

Using fertilizer to get rid of weeds in our grasslands, to bring back the fire-safe wildflowers



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Restored 800 acres of California grasslands back to 95%
or better native cover since 1992. This Power Point at
www.ecoseeds.com/fertilize-the-weeds.pdf

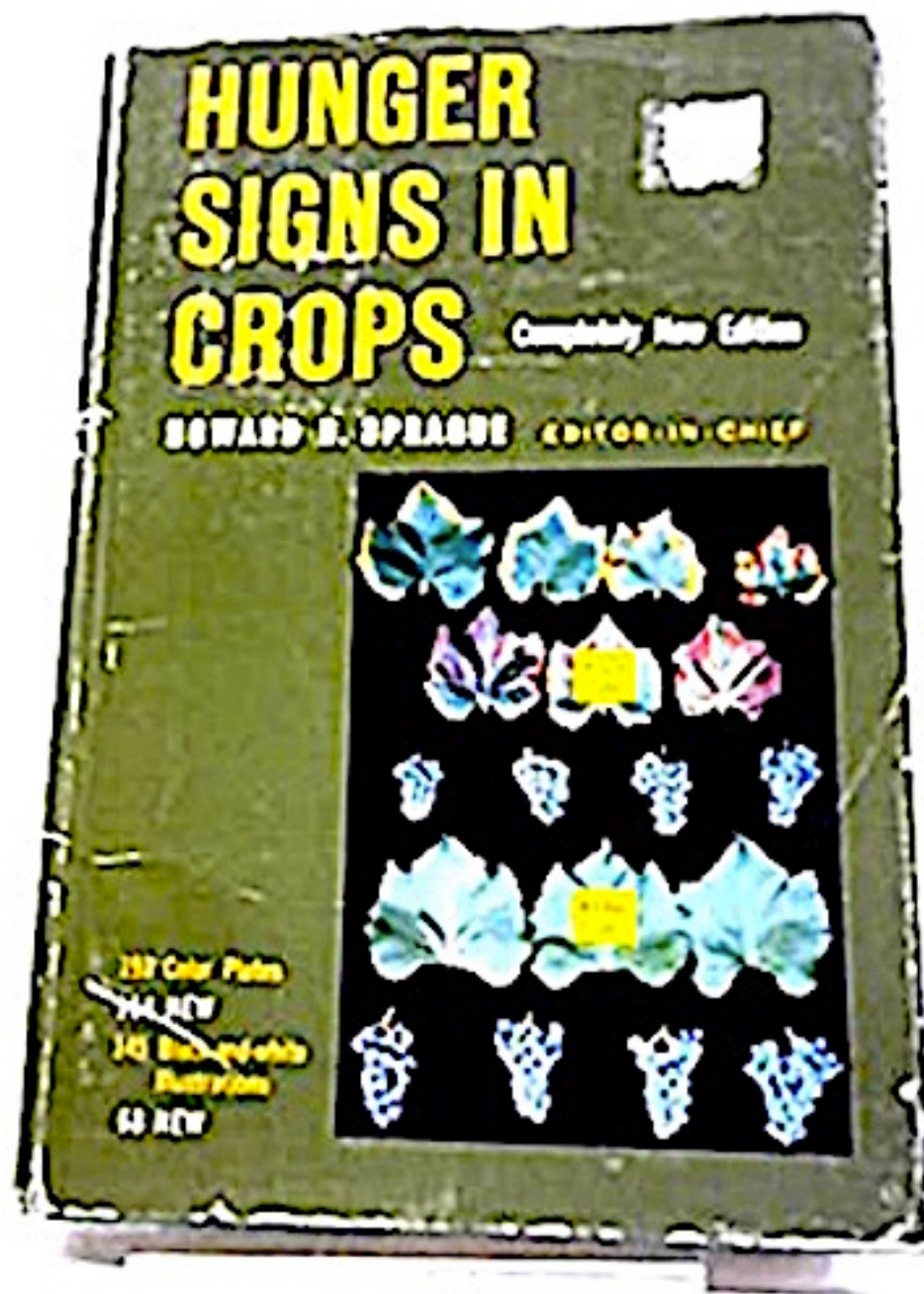
Also see-- www.ecoseeds.com/firesafe.pdf - All photos by C. Dremann



- **Thirty years ago, I was hired by BLM** to invent methods to replant the 100-mile gas pipeline north of Reno in the cheatgrass infested sagebrush desert.
- **Nobody had done a native planting at the time.** Our first year's test plots had a **97% failure rate**, and **we discovered the main reason why--**
- ***We had not added fertilizers and organic matter with the native seeds when we sowed.** Picture shows the planting **with** fertilizers added, and zero cheatgrass as far as you can see.*
- ***The other discoveries, were -- NEVER sow natives as a seed MIX.** And NEVER sow natives that could interfere with future weed management, like yarrow.*



- **My Native American relatives** learned to communicate with plants, to know how to care for them, because that knowledge was critical for our people's survival too.
- **Anyone can start communicating** with the plants, by learning their sign language, how they use the colors of their leaves, to alert us to their needs.
- **This painting shows how corn leaves "talk"** and was made for my Haiti project to teach the Haitian farmers, **the corn's sign language, left to right, is their asking for more K-P-N**
- **Image is from my artwork** at www.ecoseeds.com/art.html.



An excellent book with color photos showing the plant-nutrient sign language, is either the second or the third edition of **Hunger Signs in Crops** by Howard Sprague, 1964. Out of print, and many used copies available on line, all hard cover.

Use the photos in this book, to **learn the sign language** of the plants, so you can feed them with the proper food they need.

Do not ignore these signs because when the plants use these signals, they are in a **desperate way and need immediate help.**

- In our California grasslands, the easiest native plant to learn the plant's soil-nutrient-sign language from, is the California poppy.
- A nitrogen starved poppy's older leaves are white-tipped, shown by arrows. You need to feed them blood meal until the leaves turn green again, and use the prilled form like the Hi-Yield brand, not the fine powder.



A phosphorus-starved poppy leaves signal is turning purple, and you need to add bone meal that is pure without any nitrogen, like from the Hi-yield brand. A pelleted form would be best, for the lack of dust when applied. You may need to add bone meal several times, until the leaves turn green again.





When poppies are properly fed, they will signal back with a uniform green color, and all the other natives in your grassland will be happy too, because the poppies require the most nutrients, out of all of our serpentine and non serpentine wildflowers. The rare Western Bumblebee is gathering pollen. Poppies are their critical food plants spring through summer.

I started restoring two acres in Los Altos Hills at the same time, a few blocks from Arastradero Preserve. Soil tests determined what the soil nutrient thresholds were. **Until we added nutrients and organic matter needed by the poppies, it would have been impossible to produce a scene like this.**



- **When I was volunteered at Arastradero Preserve in Palo Alto from 2012 to 2016** to restore a small wildflower plot above the parking lot, I planted 35,000 seedlings that were mostly poppies that bloomed only one year and then went away. The soil was too poor for the native's survival. My painting of that project. **Because I did not add the fertilizers, there is no evidence today my project ever existed.**



In 2016, I started working on the 14-acre Kite Hill Preserve in Woodside, whose eastern border is I-280, where the best native habitat exists. This contradicts the theory that car exhaust nitrogen is bad for natives—this serpentine area has been bathed in nitrogen car exhaust every minute for 50 years, with no ill effects





San Mateo County has never had any urgent need to invent methods to convert the flammable weed grasses, back to fire-safe wildflowers—*until the PG&E substation wildfire along Canada Road on June 21, 2022. Burned hillside in the background, with weed straw fire fuel still on the ground and ready to burn around the substation.*

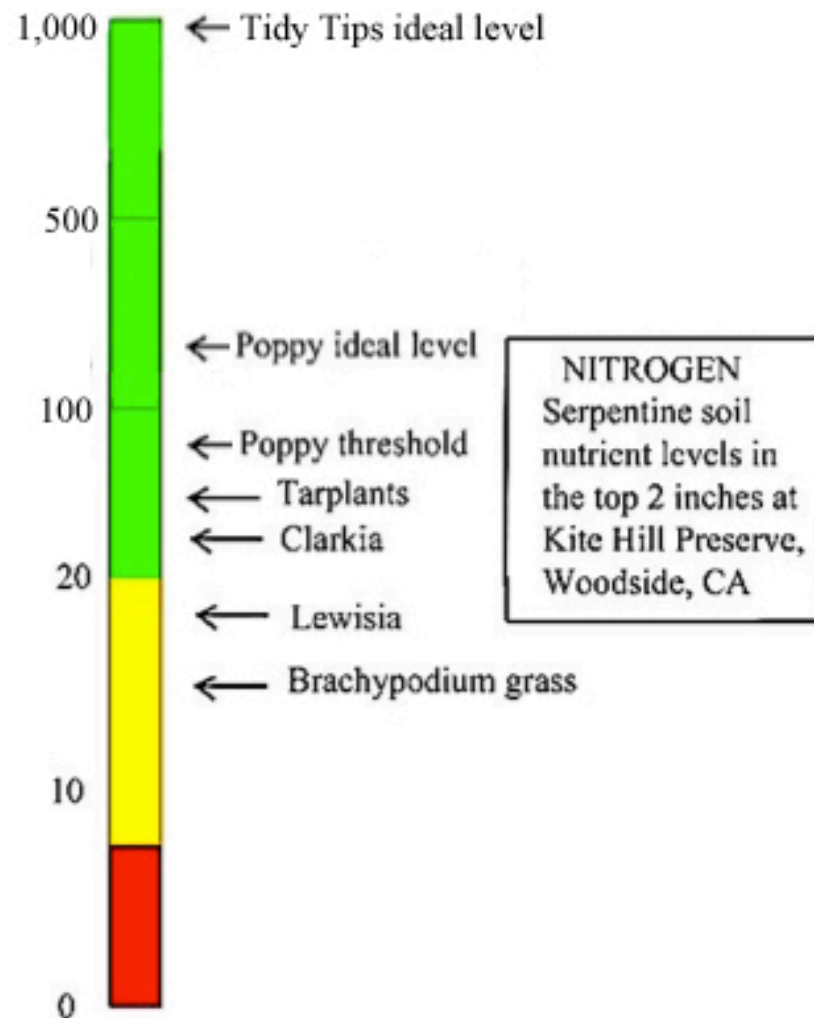


Also, very expensive homes now ring our grasslands – and a wildfire could be economically devastating. Value of homes next to Kite Hill Preserve shown.

The potential for wildfires is so dire, that insurance companies are refusing to renew fire insurance policies in our County's hill properties.



The grasslands surrounding the PGE substation were mowed, and mowed weed thatch looks fire safe--until you measure the flammable fuel per acre, ready to burn all summer. Take a square foot of the straw, weigh it in grams, multiply by 100, and that is the number of pounds of fuel per acre. Scale shows 4,600 pounds per acre is still on the ground and ready to burn.

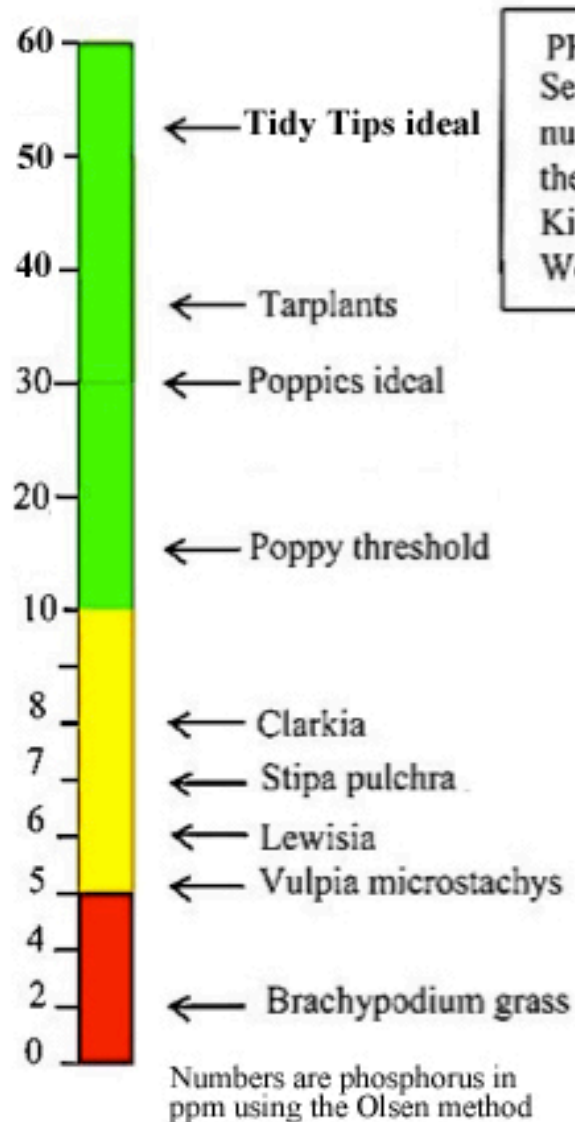


During the 2022 San Mateo County WMA annual “Picnic in the Weeds” the native seeded plots at Edgewood Preserve were **infested with the very persistent *Brachypodium* grass, which is impossible to get rid of, until you add fertilizers.**

Our soil tests at the Kite Hill serpentine soils, showed that *Brachypodium* can grow in soils, which are way below native plant threshold levels -- even at the low serpentine wildflower levels.

Nitrogen thresholds needed for plant survival, shown here

Levels from Waypoint lab A-01 tests of the top two inches of soil, the available nitrogen in ppm.



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Brachypodium can also grow in soils where the phosphorus is too low for natives. Check the levels needed by the *Lewisia*, which normally grows in pure serpentine rock and gravel.

Paradoxically, we must reverse our thinking, and start “Feeding the Weeds” in order to get rid of them—if the nutrients are not there for the natives in their necessary threshold amounts they need for survival, they will never be able to come back and replace the weeds.

Without fertilizing these grasslands, our great-grandchildren will be out whacking weeds. Instead, adding fertilizers and using the Shaw-Dremann Mowing methods, we could convert these flammable grasslands in our County, back to wildflowers in less than ten years. (*Published as the June 2002 cover article in **Ecological Restoration journal***).

At Kite Hill, three areas needed fertilizers to get rid of weeds—Brachypodium and patches of yellow star thistle. 2nd year fertilizing and mulching—Added 800 lbs. blood meal, 500 lbs. bone meal and 200 cu. ft. potting soil for organic matter. **Without fertilizers, natives cannot take hold, and decades of hard work may only substitute one weed for another. Natives need adequate fertilizers, even on serpentine.**



Soil tests were done at Kite Hill, in the area where star thistles were growing all summer, at the rate of 100 plants per square foot. **Organic fertilizers added** in October, 2022.

And only 90 days later, 99.5% of the star thistles were gone, and native tarplants (dark patches) sprouted from dormant seeds in the soil. Left=spring 2022. Right=summer 2023



Look at a California grassland, like a doctor would look at an infected wound.

- **Before 1750, California had healthy grasslands**, where burning or animal grazing or other disturbances could heal by itself over time.
- **After 1750, the introduction of exotic invasive grazing animals**, in the next 200 years wounded our grasslands so severely, that on the surface, there **is practically nothing left to start the healing process.**
- **The addition of exotic plants** -- those plants have been **infecting those grassland wounds**, and suppressing the dormant native seeds that are still in the soil, from sprouting and healing those wounds.
- **Grazing over time, removed soil nutrients and organic matter**, dropping those levels below the thresholds needed for native seedling survival, guaranteeing the natives would never have a chance to recover and heal the wounded grasslands.
- **This healing process of our California grasslands, can only start with actions of the Land Doctors** -- it cannot start on its own, as the wounds are too severe and the infections too massive and widespread.

As Land Doctors today, we must start doing four things: 1.) **Stop wounding** our grasslands with exotic animal grazing and fires. 2.) **Start unearth the dormant native seed** so they can start doing their wound-healing work. 3.) **Add the soil nutrients back** to the levels needed by the natives and 4.) **Manage the weeds and give them birth control** so they stop making any more baby weeds—Every square foot of weeds that grow in a grasslands, keeps that square foot of a grassland wound infection open, suppressing the natives, and stops the healing process.



In 2002 I wrote a proposal at www.ecoseeds.com/cool.html for the Saudi government to set aside a large area of their country as **Ecological Restoration Preserves**, to cool the climate, increase rainfall and sequester carbon by replanting the local native plants.

Working with the Saudi representative of the World Bank, **my proposal was adopted in August, 2010 to set aside 500 million acres** east of Riyadh.

Image from my proposal, shows the difference of having native vegetation and rainfall, and not having vegetation---and without vegetation, no rainfall, just a few miles away.

In October 2021, the Saudi government launched a plan called the “Saudi Green Initiative”. Along with replanting the Ecological Restoration Preserves, expand their project to **replant their entire country with 10 billion trees, at one million per week. Considered the quickest and best ecological solution to Global Warming, with those plants sequester carbon, and had its debut at the COP27 meeting in Egypt.**



When the COP27 meeting opened November 7, 2022, the Saudi's Ecological Restoration project was expanded exponentially, way beyond its own borders and was renamed the "Middle East Green Initiative" -- and will now include **24 countries that will replant 50 billion trees across North Africa, the Middle East to Pakistan, India and China.**



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Over the last 20 years of attending the San Mateo County WMA meetings, I have been proposing that we restore ALL of our publicly owned grasslands, back to fire-safe wildflower fields, to save the rare plants and animals and to make our county more fire-safe.

Like all of the grasslands at ---

- 1.) Edgewood Preserve,**
- 2.) All of the Mid-Pen grasslands,**
- 3.) All of the POST grasslands,**
- 4.) the SFPUC watershed lands,**
- 5.) Along I-280, Hwy. 92 and One,**
- 6.) Jasper Ridge and Stanford Hills,**
- 7.) San Bruno Mtn. and SSF hill,**
- 8.) State and Federal Parks on the coast, etc.**

Photo: Edgewood Preserve with solid *Brachypodium* weed-grass on hill.

We could we establish the “California Wildflower Initiative” where our public land management agencies do their soil tests and buy the bags of fertilizers our grasslands need, and get the crews with string trimmers and get all of our public grasslands and wildflower meadows restored by 2030?



This fertilizing method must be combined with the “Dremann-Shaw monthly mowing method” at 8-12 inches high, so adding fertilizers benefit the natives instead of feeding the weeds. Example shown from Kite Hill, my method is able to do the conversion from weeds to natives in only one year, and no poppy seeds were sown.



By converting California's grasslands back to fire-safe wildflowers, can help avoid what happened in the 2017 PGE wildfire in the Bennett Ridge subdivision where my cousin Mitch lives, where the mowed weed grass thatch laying on the ground all summer, in October **burned 70 homes to their foundations.**



Fire-safe wildflowers are always the best choice to have covering our California hills, and they are so beautiful too!

