

“Craig’s weed-grass fire-fuel plan”,
converting flammable weed grasses to
fire-safe native cover in private and public
properties, by unearthing 100-250 year old
dormant native seeds still in the soil.

*Permanently eliminate the tons of weed-grass
fire-fuel per acre of the mowed thatch, that remains
all summer around our homes and critical infrastructure,
and could help cause future firestorms.*

Copyright © 2022 by Craig Carlton Dremann, The Reveg Edge, P.O. Box 361
Redwood City, CA 94064 – Office 650-325-7333 – craig@ecoseeds.com -
Restored 800 acres of native wildflower meadows and grasslands to date.

In October 2017, the PG&E firestorm swept into the Bennett Ridge subdivision, where everyone had trimmed their trees and shrubs, *but had waited until late spring to cut their weed grasses when dry and 3-4 feet tall.* Photo before the fire.

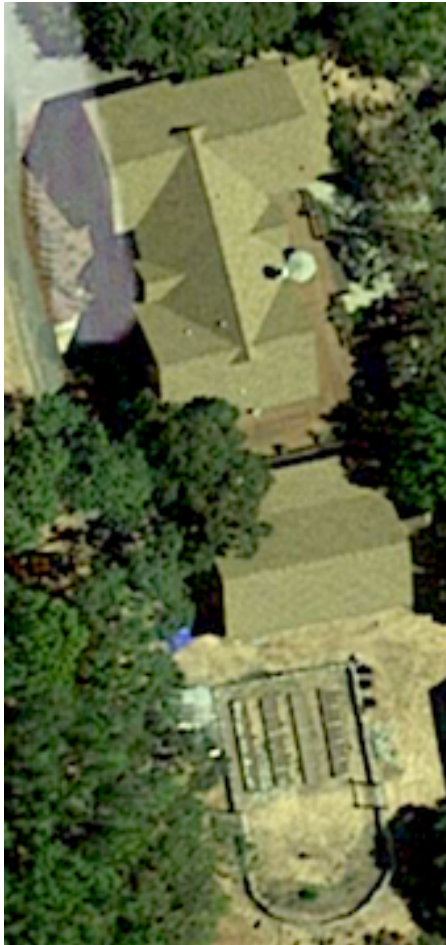


My cousin Mitch's home was one of the only homes left standing, because he got rid of the weed grasses when he moved in. Every foot tall the weed grasses grow before you cut them, produces one ton of fire fuel per acre.

70 homes were burned to their foundations.



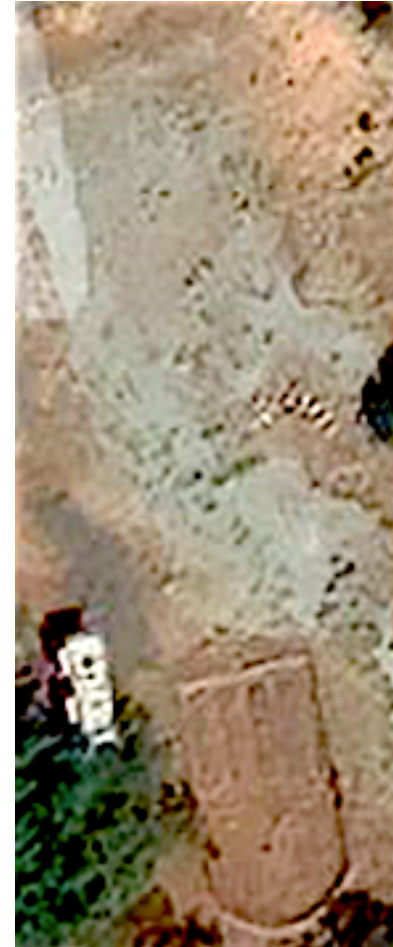
Obviously, annual mowing of the weed grasses does not adequately eliminate fire fuels. We all need to adopt monthly mowing at 8-12 inch high, and start mowing earlier while grasses are still green.



6-2017



10-2017



10-2020

The June 21 Edgewood Fire that came within a few feet of the Canada Road PG&E substation, with the weed grass thatch helping to spread that fire.
The burned hillside is in the background.



Our once a year mowing of the weed grasses gives us the illusion that we are fire safe, even though *thousands of pounds of fire fuel thatch are still lying on the ground and ready to burn.*



Scale shows 46 grams of a square foot of thatch that in September is still surrounding that PG&E Canada Road substation after the fire, *which translates to 4,600 pounds per acre.*



In 2017, I was hired by the Woodside Fire Prevention District to convert half of Buck Meadow, located on Los Trancos Road 1.8 miles up from Alpine Road and take the five foot tall flammable wild oats, and *use my special mowing method to get that meadow back to fire-safe natives, and without sowing any native seeds.*



Two years of monthly mowing, while weed grass seeds are still green and keeping everything mowed to 8-12 inches high, we *stopped weed grasses from reproducing*. We eliminated 75% of the fire fuel, and natives are sprouting up from dormant seeds.



Buck meadow is divided by Los Trancos Road, and the other part is mowed once a year, which keeps the amount of fire fuel stable, and is not reduced over time. Weighing one square foot of thatch in grams, then multiply by 100, gives the pounds of fuel per acre. *That equals 5,200 pound per acre surrounding Los Trancos Woods homes all summer.*



Working at the Kite Hill Preserve in Woodside since 2016, the serpentine grassland was a huge weed-grass and star thistle patch. *Picture of thick foxtails and rip gut grass along Alta Mesa when we started.*

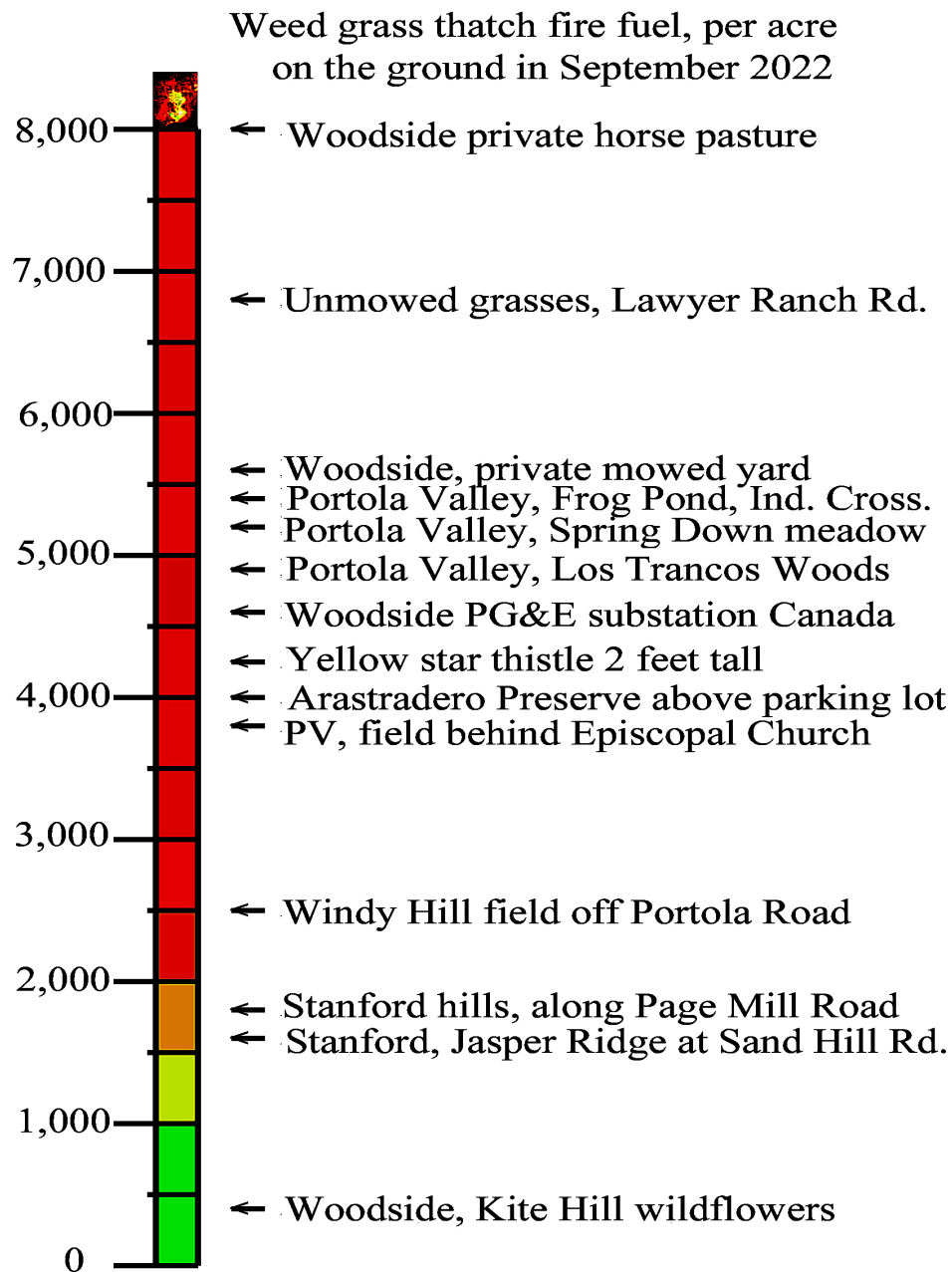


The dormant fire-safe *native seeds in the soil* underneath the weeds, started sprouting at the rate of 5-10 seedlings per square inch when we started mowing monthly at 8-12" high.



By measuring the amount of mowed weed grass fire fuel thatch still on the ground in September 2022, there are tons that could potentially cause a wildfire. The highest rate found was in a Woodside private horse pasture, and *equal to 1,000 gallons of gasoline per acre.*

Do we really want to take those risks?



Another experiment, is to set fire to a square foot of different grasses to see how dangerous or how fire-safe they are. Video of burning one of our smallest weed grasses, the “Zorro” fescue. The flames shot up fast and 3 feet high, and made me jump back, at <https://www.ecoseeds.com/movie-burning-zorro.m4v>



Our weed-covered grasslands, with only a few years of monthly mowing at 8-12 inches high, could be *converted back to fire-safe wildflower meadows, by unearthing the 100-250 year old dormant native seeds.*



***Kite Hill Preserve
April, 2019***

When you use other methods to manage weed grass fire fuels in California, you can do permanent damage to our native grassland ecosystems:

Tilling drives the dormant native seeds too far into the soil to be able to sprout.

Grazing removed critical fertilizers like nitrogen, phosphorus and calcium from the soil, and can drop soil levels below the thresholds needed for native seedling survival.

Grazing, when cows remove the soil calcium and that mineral is incorporated into their bones and milk, can radically change soil pH -- up to 50X more acid than normal.

Grazing causes the animals to focus on eating the choice natives that stay green longer into summer, before they will eat the dry or prickly weeds.

Burning weed grasses to clear off fire fuels, produces fires 10-20 times hotter than what native grassland plants were used to--so you can kill the perennial natives like poppies and native grasses that still exist, when you burn the dry weed grasses.

Burning also can destroy the surface layer of organic matter that the native seedlings need for their seed bed. Looking underneath the thatch layer of weed-grasses in California hills, the surface organic matter is gone, removed by grazing and fires in the past. Without that surface organic matter, those grassland soils can get rock-hard-- it took three people working 15 minutes taking turns with a hand-pick to get a one-quart sample of soil from the Stanford Hills near the "Dish" a few years ago.

Our native grasslands and wildflower fields are California's rarest ecosystem.

Everyone should try my monthly mowing method at 8-12 inches high, and also try and stop the burning, grazing and tilling methods that can cause permanent damages to our endangered natural resource. And increase your mowing, earlier in spring and higher.

This method is useful for many areas, by restoring solid native cover, those areas are permanently readjusted to their lowest possible fire fuel levels.

- **Around homes and critical infrastructure** like our electric power substations where weed grasses need to be mowed once a year.
- **Firebreaks that are plowed or mowed** annually to keep clear like roadsides and under high power lines—could be converted to back to natives.
- **Vineyards and orchard**, instead of the task of annual weed management, convert the space between the plants back to natives, like the 1.25 million acres of almonds, and 800,000 acres of vineyards.
- **In California 50,000 miles of roadsides that are mowed or herbicided** each year for fire prevention, would be the perfect areas to convert back to natives. Converting back to natives could be an essential part of the Caltrans 2022 “State push for Fire-Resilient Roadways Strategy” at <https://dot.ca.gov/programs/public-affairs/mile-marker/issue1-2022/fire-prep>
Iowa DOT started this process 22 years ago with their “Native Ecotype Project”

Our State and County highway departments, could stop the threat of roadside weed-grass wildfires, by converting all of those areas back to fire-safe natives, and that would beautify our highways at the same time. Photo from Caltrans Fire-Resilient Roadways Strategy.



Travel

Work with Caltrans

Programs



Thirty years after Craig invented his fire-fuel plan, finally in 2022 researchers are catching up and confirming that Craig's plan is the best method to get rid of the weed grasses, and that conversion of the weed areas to solid native cover is the ideal goal for fire safety.

Two presenters at the 2022 Cal-IPC November conference, concluded that Craig's Weed Grass Fire Fuel Plan is the best method to use, with "Timed Mowing" as other name for monthly mowing in the paper, *"Timed mowing of invasive grasslands in Santa Monica Mountains National Recreation Area"*.

The value of permanently converting the flammable weed grass areas, back to solid native cover, is what the second presenter's paper is all about, with the title: *"Replacing non-native grasses with herbaceous native plants to reduce ignition potential of fuel breaks and roadsides."*

Timed mowing of invasive grasslands in Santa Monica Mountains National Recreation Area

8:55 AM-9:15 AM -- Description

Development at the urban-wildland interface has swelled in recent years due to population growth and urban sprawl. As a result, fuels reduction efforts are on the rise to protect life and property. Traditional fuel safety practices leave buffers of cleared vegetation around housing and include multi-acre fuels reduction zones that are placed in strategic areas to control the travel of wildfire. Although fuels work is necessary to protect life and property, the timing of clearance activities facilitates invasive spread as treatments occur annually during late spring and summer when most weeds have already set seed. This study proposes a digression from late season mowing and instead investigates the efficacy of early season mowing to prevent seed set of flammable invasive vegetation that tend to dominate fuels reduction areas. **By managing non-native grasslands through repeated early season mowing, we predict a reduction in the cover of invasive grasses and forbs, and over time a depletion of the non-native seedbank.** Preliminary results from this study show that timed mowing reduces cover and litter of invasive grasses and encourages passive recovery of low growing native forbs, which reduces fire risk by lowering relative fuel loads. Although there is an initial labor investment associated with timed mowing activities, the lower fuel load and higher habitat quality resulting from the establishment of native communities will ultimately reduce labor needs, and provide a long-lasting solution to fuels treatment areas, which are otherwise written off as wastelands.

Speaker

- → **Matthew Wells**(Speaker) Santa Monica Mountains NRA

Replacing non-native grasses with herbaceous native plants to reduce ignition potential of fuel breaks and roadsides ¶

8:30 AM-8:50 AM ¶

Description ¶

Fuel breaks and roadsides are often invaded by non-native annual grasses. Annual grasses grow at high density and cure in spring creating easily ignitable fuel which increases fire spread rates, expands the fire season, and increases fuel continuity. In Southern California national forests, most wildfires start along transportation corridors. Thus, reducing the ignition potential in these areas to increase the resilience of California wildlands to anthropogenic wildfire is critical. Our goal is to eco-engineer fuel breaks and roadsides with native herbaceous species that reduce ignition risk, meet fuel management objectives, and enhance native ecosystem services. We conducted a plot-scale restoration experiment within a fuel break in the Los Padres National Forest, Santa Barbara, California. Plots were restored by either directly seeding a community of annual forbs, or by hand planting a community of bunchgrasses and perennial forbs. Control plots were dominated by non-native annual grasses and forbs. **The different plant communities were monitored for three years including: live fuel moisture, fuel load, live: dead biomass, and litter depth; as well as ecological traits—invasion resistance and floral availability. Native communities retained live fuel moisture over summer and created less litter,** whereas the non-native community lost all live fuel moisture in spring and generated more litter. Thus, the native communities would be more difficult to ignite and propagate fire, giving credibility to using native species on fuel breaks to meet fuel management goals, while supporting desirable ecosystem services. ¶

Speaker ¶

- → **Robert Fitch** (Speaker) University of California, Santa Barbara ¶