

Fire Resistant Landscaping June 2021



California Sisters Landscapes

What is Fire Safe Landscaping?



1. Strategize planting zones
2. Choose the right plants
3. Intersperse non-flammable substrate in garden
4. Break up continuous vegetation
5. Create vertical and horizontal space between trees and shrubs and ground cover
6. Maintenance!



Acknowledge the First Fire Landscape Experts



Native Americans have tended and lived here for 13,000+ years.

Before Europeans and later legislature and forestry practices thoroughly interrupted cultural burning, CA experienced massive areas of burning every year, most of which was *low intensity and purposeful*. Native tribes are gaining stewardship autonomy of ancestral lands, including use of controlled burning to enhance habitat resiliency.

Foresters, fire fighters and land managers are paying closer attention to cultural burning benefits.



Where do I start?



- ❖ Work from the structure out
- ❖ Start working in the 0-5 ft zone
- ❖ Home hardening is equally important as defensible space
- ❖ Most structures ignite from embers (not flames)
- ❖ So, think ember resistance



Defensible space zones



0–5 ft

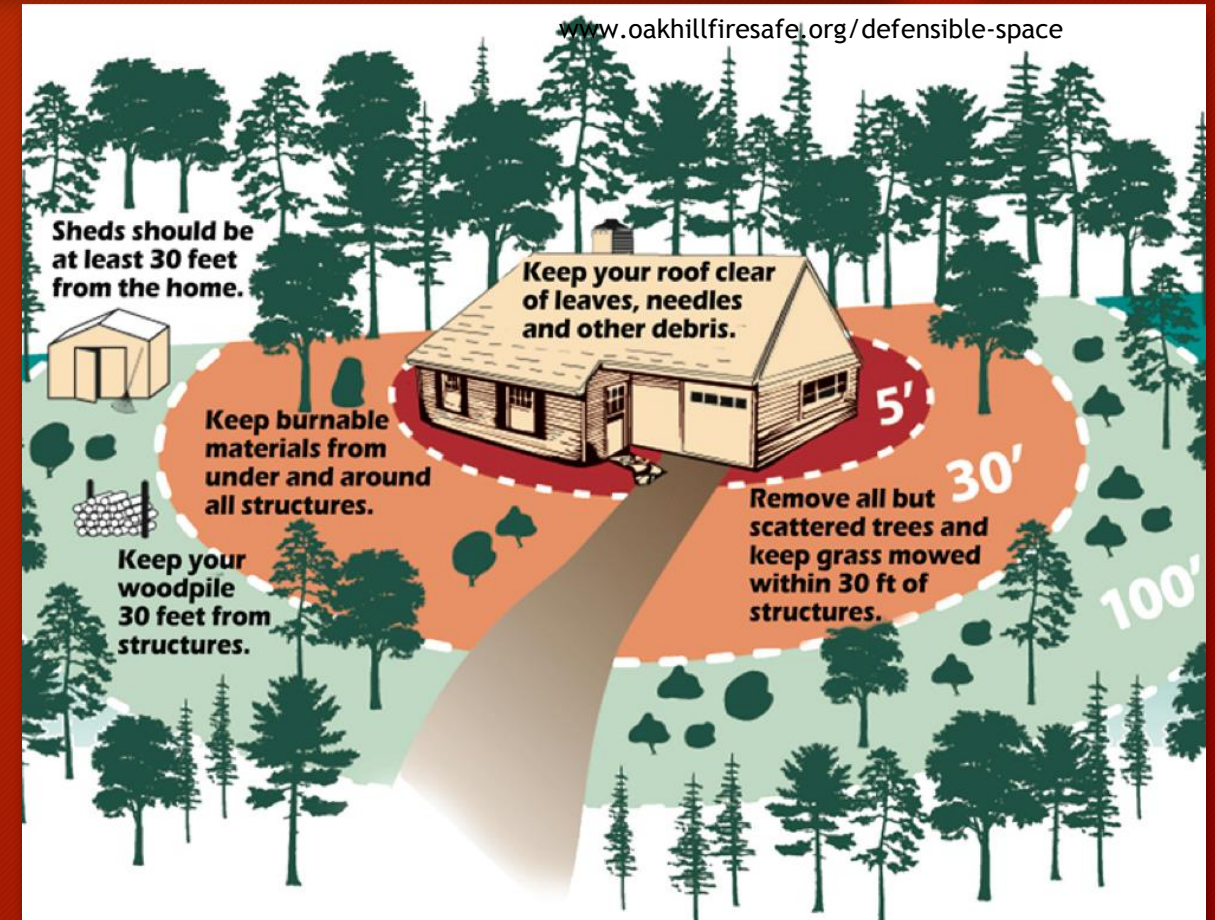
- Non-flammable siding and/or plug cracks
- No jute doormats, wicker, teak furniture etc.
- Keep decks, roof, gutters and ground clear of debris
- Use gravel, pavers, or bare soil if possible

5–30 ft

- No woodpiles
- Keep trees 10 from roof
- Mow grass, keep garden tidy
- Make paths with gravel, pavers, or bare soil
- Prune tree limbs 6+ ft up (no more than 1/3 of tree)

30–100 ft (this may not apply)

- Space trees, prioritize keeping mature, deciduous, or broadleaf over invasive or pines and small firs
- Remove Bay trees from oak areas to reduce SOD



Ember-risky spots in the garden



Where to avoid planting altogether:

- Below windows
- Within 5 ft of structures

Mulch wisely:

- Keep mulch away from structures
- Water to flatten (fluffier = more flammable)
- Alternate mulch with gravel/pavers/compost

Fences/railings/gates near structure:

- Use metal nearest structure to make fire break

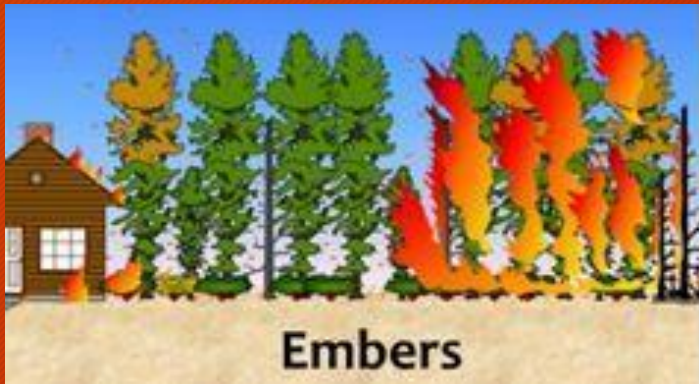
Outdoor Furniture



Think Ember Resistant



Home hardening (i.e. making your structure ember resistant) is equally important.



1. Roof → Metal, tile (with closed ends), asphalt shingle, with metal gutters
2. Vents → 1/16" to 1/8" metal screen
3. Decks → Aluminum is best
4. Windows → double pane, with one tempered
5. Eaves → soffited (closed) is best
6. Siding → cement fiber shingle, stucco, tongue and groove, or replace lowest 3 to 5 ft

On to the Fun Part! Landscaping!



1. Where to plant
2. Choosing Plants
3. Spacing
4. Break up continuity
5. Maintenance
6. Irrigation



1. Where to Plant?



Groundcover and low growing:

Anywhere beyond 5 ft of structure!

Many perennial native plants can be mowed and are excellent erosion control

Shrubs:

Scatter in garden towards outer edge or choose a few most important areas for screening etc.

Trees:

If you already have lots of trees, don't *add* more within 30 ft, but also prioritize **KEEPING**:

- ❖ Deciduous broadleaf trees are lower flammability
- ❖ Oaks = fire resistant (host 100+ native animals)
- ❖ Large redwoods can be pruned (but don't prune into a toothpick!)





1. And... Where *Not* to Plant?

Within 5 ft of house siding:

- ❖ Use rock, pavers, concrete, bare soil, aluminum deck boards

Below Windows:

- ❖ Remove vegetation below windows as glass breaks in high heat

Below Eaves:

- ❖ New structures are required to have boxed in (soffited eaves)

Keep tree limbs 10 ft from roof

- ❖ Often you don't need to remove the whole tree



<https://www.firesafemarin.org/news/entry/uc-marin-master-gardener-fire-smart-landscaping-tip-may>

2. Avoid/Remove These!



Palms



Acacia



Juniper



Bamboo



Eucalyptus



Jubata/
Pampas
Grass



2. Avoid/Remove These Too!



California Sisters Landscapes



Himalayan/
Armenian
Blackberry



Photo: Joseph DiTomaso

Ice Plant



Cape Ivy



Photo: Joseph DiTomaso

English
Ivy



Canary Island Saint
John's Wort



Periwinkle



Broom

2. Choosing Plants - The Especially Virtuous



Coffee Berry



Buckeye



Maple



Pink Flowering Current



Oaks



Toyon

2. Choosing Plants - Key Habitat Providers



Coyote Brush
29 spp.
Butterflies/moths 55+
spp. pollinators



Willow
224 spp. Butterflies/moths



Ceanothus
95 spp.
Butterflies/
moths

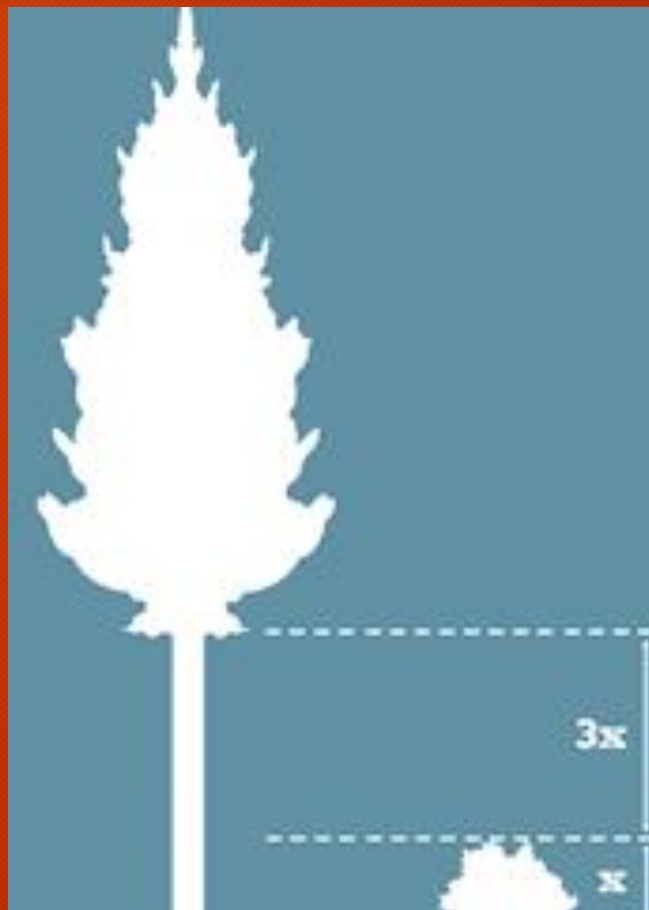


Douglas Fir
89 spp. Butterflies/moths



Oak
163 spp.
Butterflies/moths

3. Spacing -- Vertical



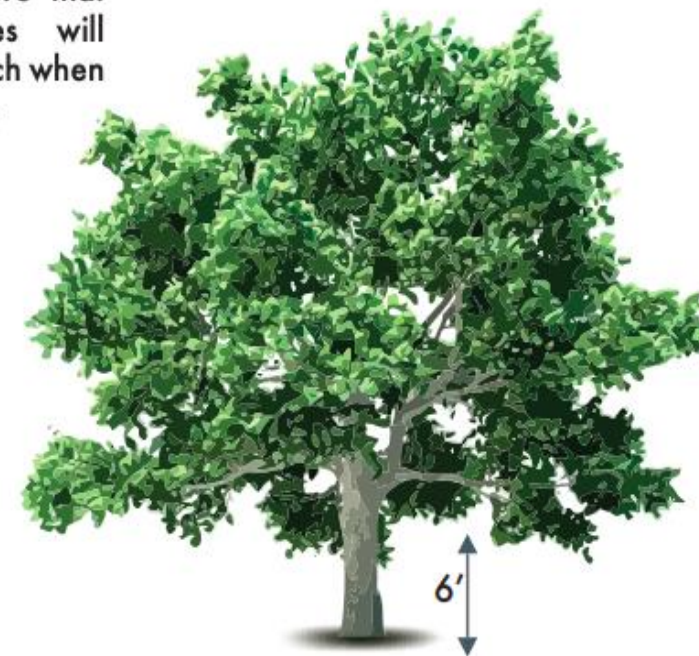
Limb and Maintain Trees



Conifers (pine, fir, cedar, etc)



Separate trees to ensure that canopies will not touch when mature.



Deciduous and broadleaf (oak, maple, bay, etc)

3. Spacing -- Horizontal



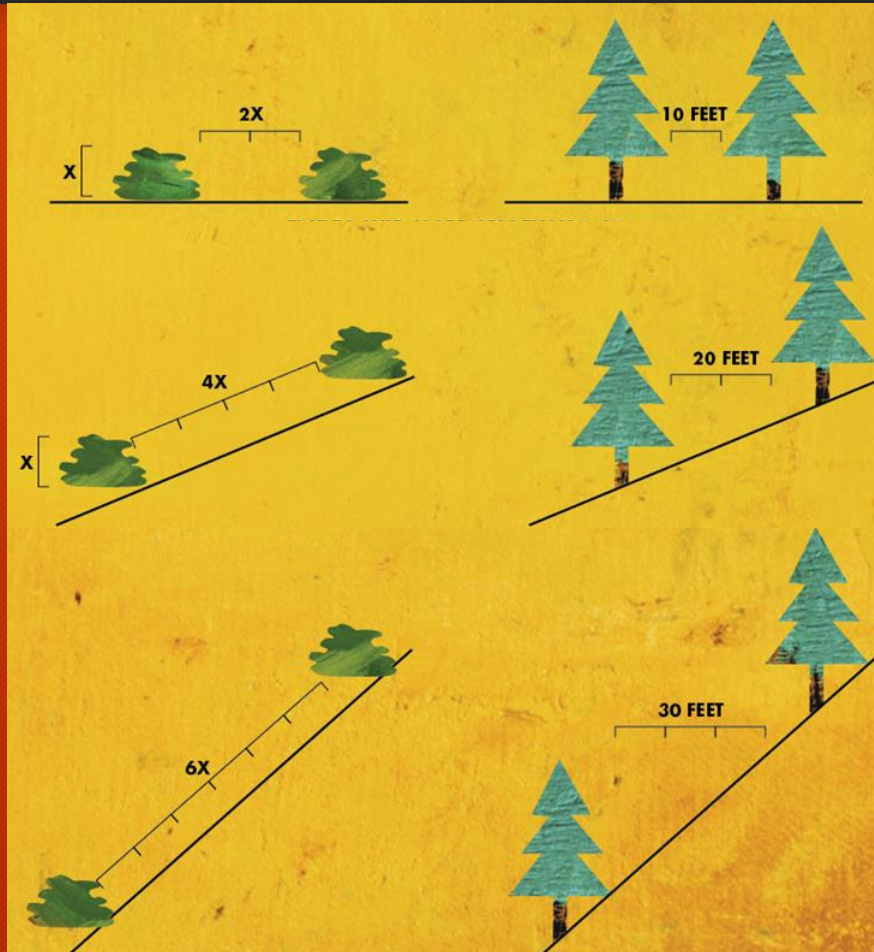
- ❖ Meadows: Cut coyote brush and small firs to base. Limb up scattered healthy oaks.
- ❖ Chaparral: aim to thin by 50% (by cutting to the ground, NOT removing by roots)
- ❖ Redwood/conifer forests: selectively thin small diameter, crowded saplings
- ❖ Oak woodlands: remove bays, newly dead oaks → So it's not too late to prevent some SOD!!!!!!



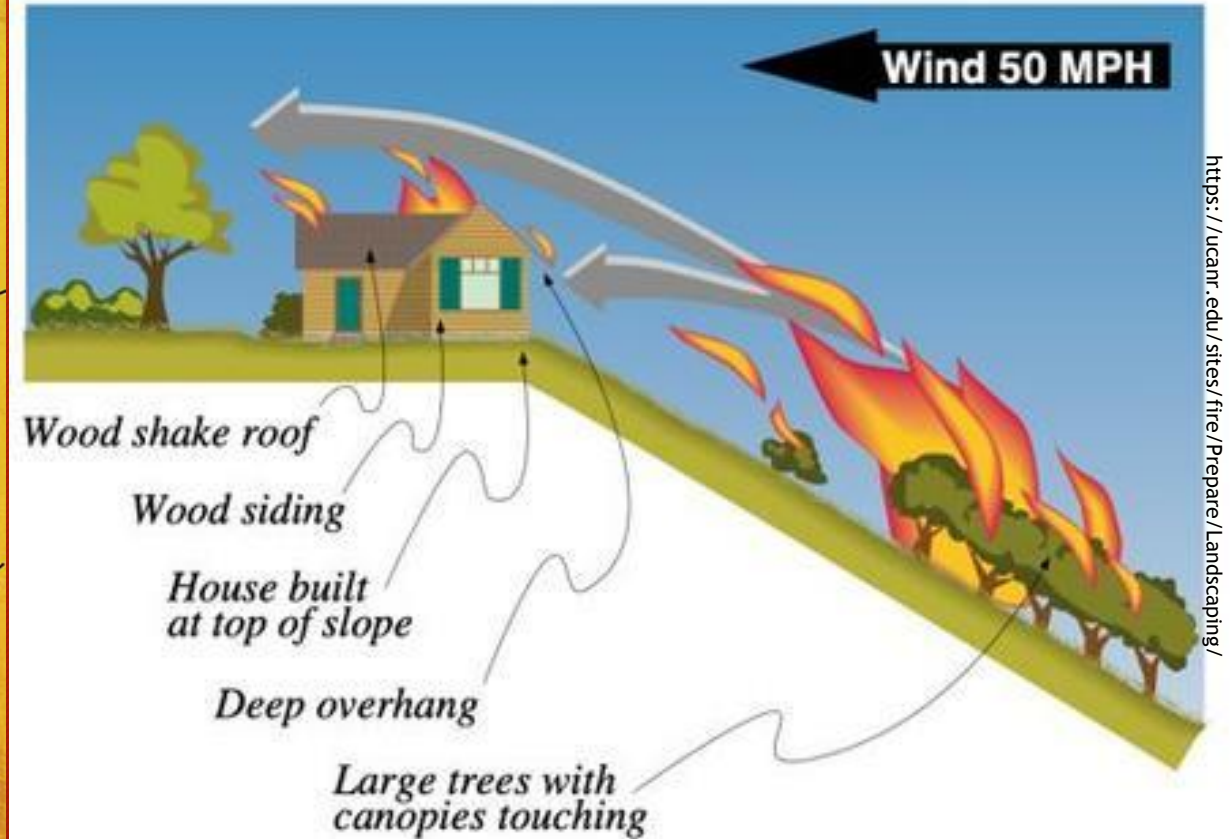


3. Spacing On Slopes - Why Not Bulldoze?

- ❖ **Under 20%:**
Space shrubs 2x height
- ❖ **20-40%:**
Space shrubs 4x height
- ❖ **Greater than 40%:**
Space shrubs 6x height



Dangerous materials and conditions for sloped sites



4. Break up Continuity - Creating Fuel Gaps



In gardens and in the larger landscape,
Increase the mosaic qualities

Why? How does this help?

This makes the landscape and
ecosystem more *resistant* to:

- ❖ Disease (harder to spread)
- ❖ Pests (harder to sustain large populations)
- ❖ Fire (keeps fire patchier, moderating intensity, as different fuels burn differently)



<https://www.gracedesignassociates.com/portfolio/garden-street>

4. Break up Continuity Examples



In a garden - leave space for paths and small clearings

In mixed landscapes - maintain meadows

In mixed evergreen forests - maintain/encourage habitat zones

- Oak/madrone/buckeye/maple
- Bays
- Redwoods/firs/tanoaks/madrone
- Alders/cottonwoods/maples/willow



5. Maintenance - like cleaning your Kitchen - never ends!



Remove lowest tree limbs:

- Conifers and Pines = 10 ft from soil
- Broadleaf = 6 ft from soil
- Keep ALL branches 10 ft from roof

Prune Shrubs/perennials (fall or late winter):

- Remove dead wood
- Cut back salvias by 70%
- Cut coyote brush, sage brush to 3 in
- Cut to ground creeping perennials

Mow (early spring/early summer):

- Grass, wildflowers → try to wait until after they seed



5. Maintenance - i.e. habitat enhancement



Add composted mulch/soil in fall:

- Add layer in garden beds (leave some space near tree trunks)

Rake (some) leaves:

- From under decks
- From 5' of structure
- From paths/hardscape

Weed invasives BEFORE they flower:

- Thistles (star, Italian, bull, milk)
- Grasses (Ripgut, foxtails, orchard, medusahead, oat, etc.)
- Broom (French, Scotch, Portuguese)





6. Irrigation - Include Overhead Irrigation

Most native plants prefer *overhead* irrigation compared to drip:

- ✓ Promotes evenly moist soil
- ✓ Encourages Mycorrhizal networks
 - Most native plants depend on a connective network between their roots and beneficial fungi in the soil
- ✓ Keeps foliage clean:
 - Dusty leaves don't breathe as well
 - Dusty dry leaves are more flammable
- ✓ Water in early morning or early evening
 - NOT night (but in very low humidity don't worry about night)



6. Irrigation - Which Plants Like Drip Best?



- Wetland plants
- Riparian (water habitat) plants
- Plants that don't mind slow drainage (e.g. clay/adobe)



<https://www.watershednursery.com/nursery/plant-finder/pluchea-odorata/>

6. Irrigation - Some Options



- MP rotators
- Pop-up sprayers
- Hand water with shower spray

In the right spot, many native plants can taper off irrigation

The irrigation taper (approx. guidelines)

- First day- REALLY SOAK it!
- First month- 2X/week
- First year 1X/week in hot, every other week in cool weather
- Second year 1X every other week in hot weather
- Third year 1X per month in hot weather



<https://www.thedailygardener.com/best-watering-wand>

Some Inspiring Gardens 😊



Notice --

- ❖ Pavers make fire break
- ❖ Pots are ceramic
- ❖ Well maintained



Photo and garden by Liz Chapman

Some Inspiring Gardens 😊



- ❖ Metal troughs make non-flammable breaks
- ❖ Set on gravel and drill holes for more drainage
- ❖ Add rocks in bottom

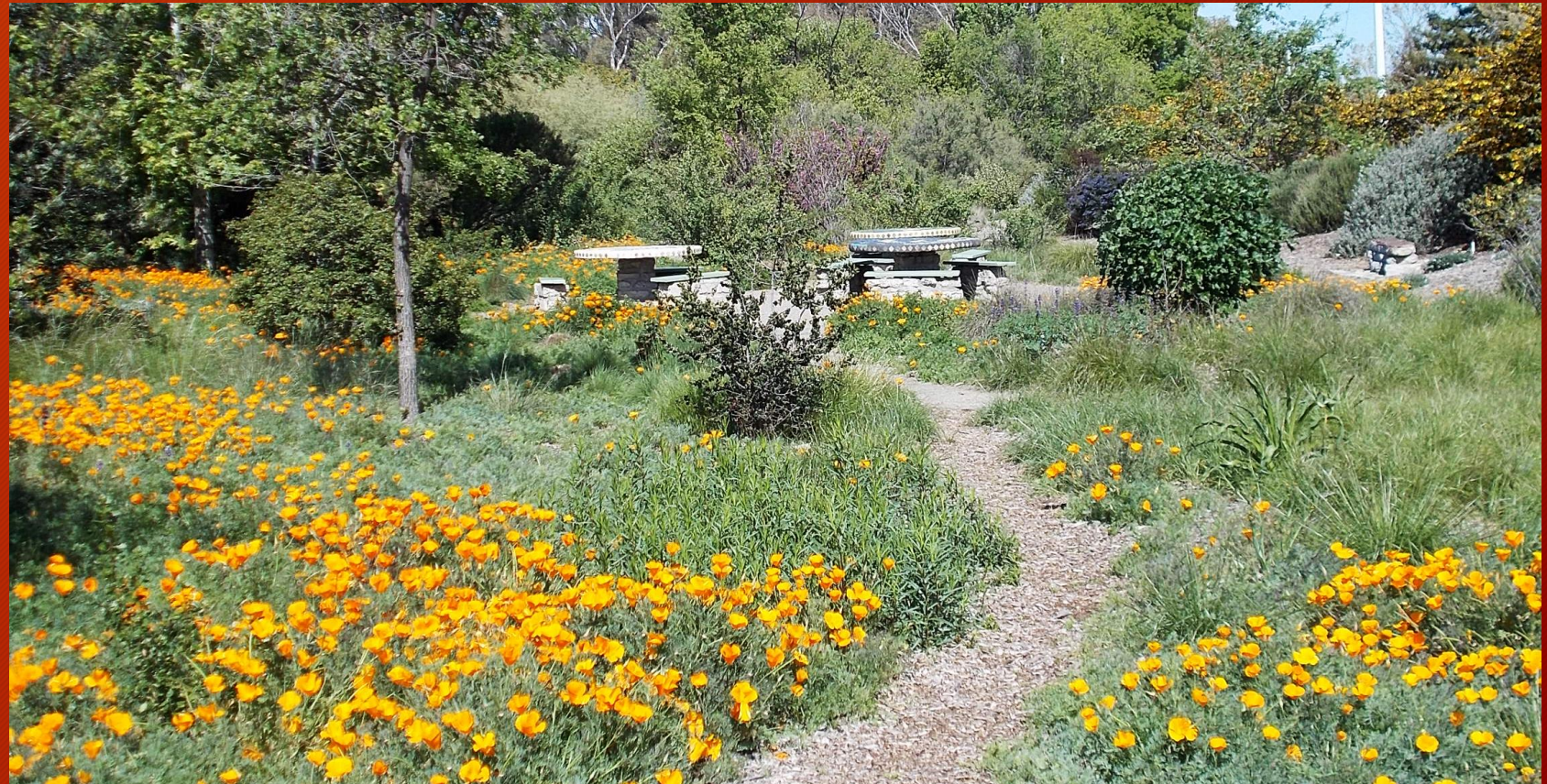


<https://www.wildflower.org/magazine/native-plants/tanks-giving>

Some Inspiring Gardens 😊



- ❖ Low plants are mowable or weed whackable
- ❖ Bushy shrubs are spaced from trees
- ❖ Benches are non-flammable (stone)



<https://granadanativegarden.org/2017/03/>

Some Inspiring Gardens 😊



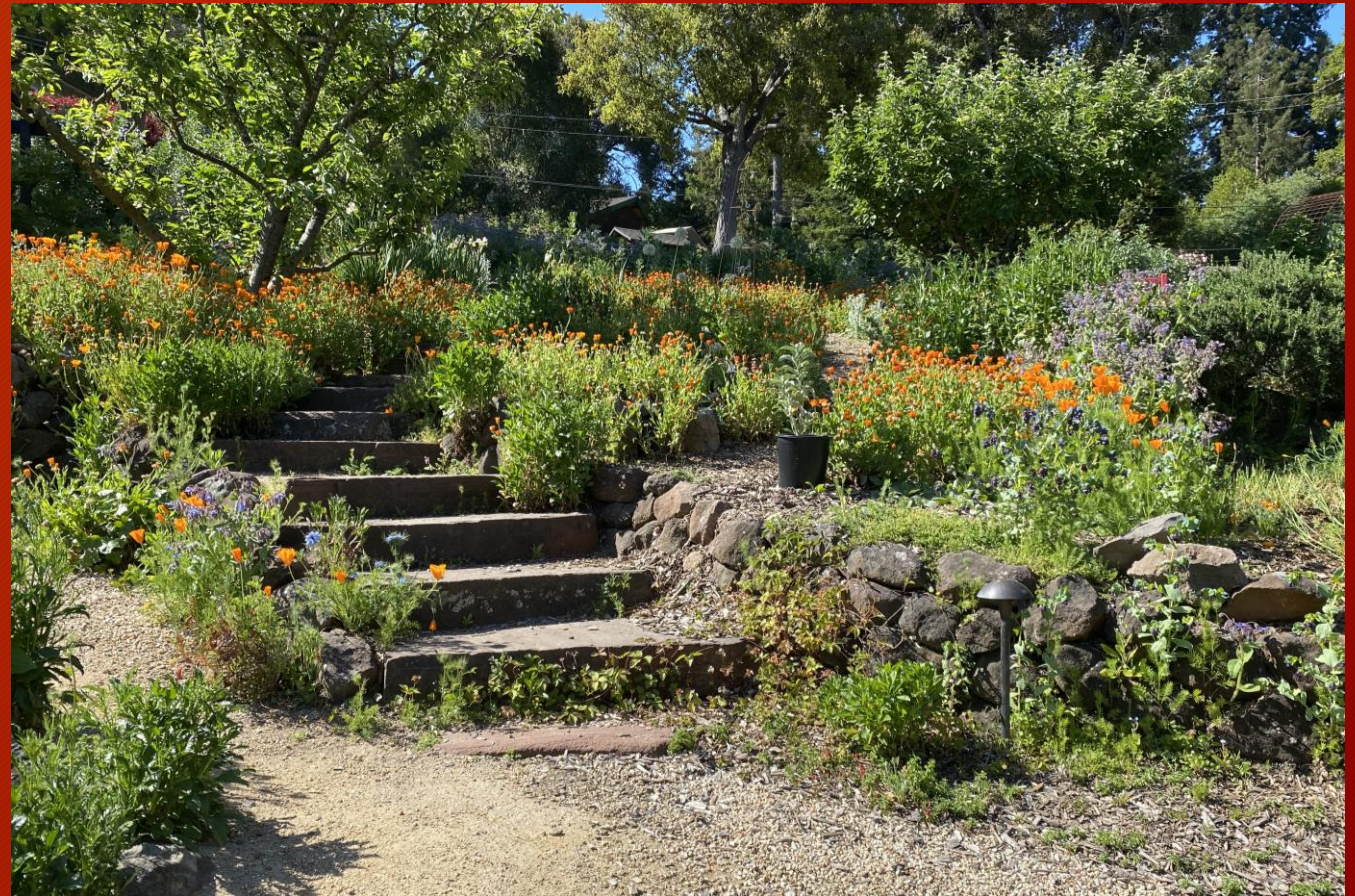
- ❖ Stone pathway and metal railing are fire break
- ❖ Healthy understory below intact canopy
- ❖ Trees are limbed up



Some Inspiring Gardens 😊



- ❖ Rock retaining walls and stairs
- ❖ Decomposed granite paths
- ❖ Juicy annual plants can be cut back after seeding



This Garden Survived a Fire ☺



- ❖ Rocks and small boulders
- ❖ Decomposed granite paths
- ❖ Shredded redwood bark mulch
(well watered in at application)



Photo and garden Landscaper, Greg Rubin,
http://www.calown.com/nativeEcology_fireSafety.html#CaseHistories

This Garden Survived a Fire 😊



- ❖ Rocks and small boulders
- ❖ Shredded redwood bark mulch (well watered in at application)
- ❖ Plastic flags survived fire because heat was so low when mulch burned



Photo and garden Landscaper, Greg Rubin,
http://www.calown.com/nativeEcology_fireSafety.html#CaseHistories

This Garden is at a Fire Station 😊



- ❖ Well maintained
- ❖ Overhead irrigation
- ❖ Diverse species
- ❖ Low growing coyote brush
groundcover between shrubs



Photo and garden Landscaper, Greg Rubin,
http://www.calown.com/nativeEcology_fireSafety.html#CaseHistories

A Meadow Garden



- ❖ Low growing
- ❖ Annuals can be cut back after blooming



Photo and garden by Nikki Hanson

An Inspiring Mountain Garden



- ❖ Boulders around water feature
- ❖ Surrounding oaks limbed up



Photo and garden by Debra Born

Resources to peruse later...

Home Hardening:

- ❖ "Be Ember Prepared Video" <https://www.youtube.com/watch?v=gAuhNDb963Y&t=1s>
- ❖ CalFire Resources for retrofitting your home: <https://www.readyforwildfire.org/prepare-for-wildfire/get-ready/hardening-your-home/>
- ❖ Oak Hill Area Fire Safe Council, Home Hardening Details: <https://www.oakhillfiresafe.org/select-building-products-retrofit-for-fire-resilience#eaves>
- ❖ Home Retrofit Guide: http://www.readyforwildfire.org/wp-content/uploads/Wildfire_Home_Retrofit_Guide-1.26.21.pdf

Defensible Space:

- ❖ UC Extension Landscaping tips: <https://ucanr.edu/sites/fire/Prepare/Landscaping/>
- ❖ Marin Fire Safe Council: <https://www.firesafemarin.org/defensible-space>
- ❖ Nikki Hanson's blog and webpage for Grassroots Ecology:
Blog: <https://www.grassrootsecology.org/eco-roots-blog/creating-fire-resistant-habitat>
Webpage: <https://www.grassrootsecology.org/fire-resistant-habitat-at-home>

Fire Resistant Plant Lists:

- ❖ San Mateo Fire Safe Council's list of recommended plants: <https://firesafesanmarino.org/preparedness/defensible-space/fire-resistant-plant-list>
- ❖ Fire Safe Marin's Guidelines on choosing plants: <https://www.firesafemarin.org/plants>
- ❖ Useful plant list for El Dorado Co. (but much overlap with this area): https://www.eldoradocnps.org/images/gardening/Ray_Griffith_EDC_Native_Plant_List.pdf



Landscaping Resources and Supplies 😊



Nurseries

- <https://www.watershednursery.com/>
- <https://www.cnps-scv.org/gardening/cnps-nursery>
- <https://www.grassrootsecology.org/nursery>

Compost, boulders, gravel

- <https://www.lyngsogarden.com/>
- <http://www.soilfarm.net/>

Irrigation

- <https://svsprinklerandpipe.com/>

Fencing

- <https://www.fencetrac.com/>
- <https://www.trexfencingfds.com/>

Decking

- <https://www.wahoodecks.com/>
- <http://www.nexaninc.com/>
- <https://versadeck.com/>
- <http://dektektille.com/>

Tools and equipment

- <https://www.gardenland.com/>
- <http://www.toolpirate.com/2319.html>
- https://www.northerntool.com/shop/tools/category_lawn-garden



Nikki's Low Flammability Plant Lists ☺



Sun garden 5+ feet from structure

https://www.calflora.org/app/ipl?list_id=px1988&bloom=t&sbloom=t

Hillside garden in full sun

https://www.calflora.org/app/ipl?list_id=px1990&bloom=t&pslinks=t

Screening in sunny conditions

https://www.calflora.org/app/ipl?list_id=px1994&bloom=t&sbloom=t&pslinks=t

Easy maintenance mowable garden

https://www.calflora.org/app/ipl?list_id=px1995&bloom=t&sbloom=t&pslinks=t



Shade garden 5+ feet from structure

https://www.calflora.org/app/ipl?list_id=px1987&bloom=t&sbloom=t

Shaded hillsides erosion control:

https://www.calflora.org/app/ipl?list_id=px1992&bloom=t

Screening semi-shaded conditions

https://www.calflora.org/app/ipl?list_id=px1991&bloom=t&sbloom=t

Redwood underplanting

https://www.calflora.org/app/ipl?list_id=px2167&bloom=t&pslinks=t



Sun garden 5+ feet from structure

https://www.calflora.org/app/ipl?list_id=px1988&bloom=t&sbloom=t





Shade garden 5+ feet from structure

https://www.calflora.org/app/ipl?list_id=px1987&bloom=t&sbloom=t

