



# Resilient Landscaping for Fire & Drought

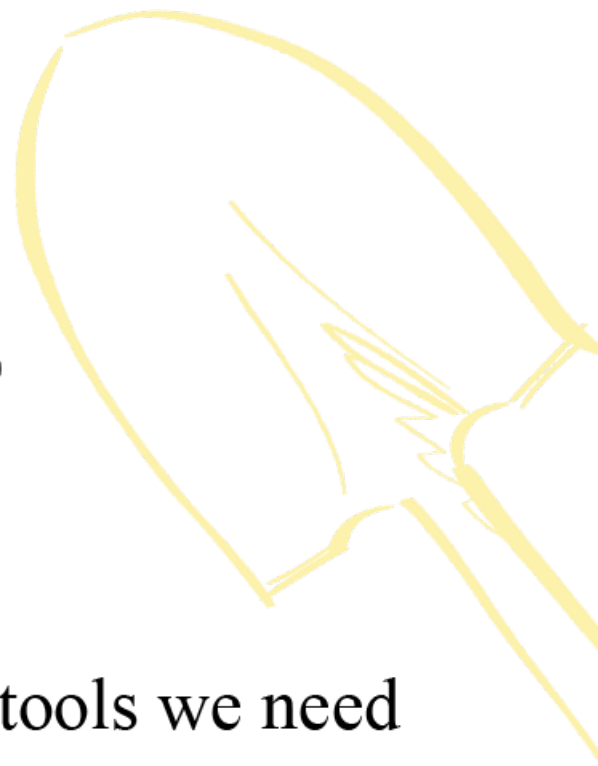


UC Master Gardeners of Napa County  
<http://napamg.ucanr.edu/>

*Our mission: "To extend research-based knowledge and information on home horticulture, pest management, and sustainable landscape practices to the residents of California and be guided by our core values and strategic initiatives."*



## **Help Us Better Serve You!**



Our follow-up survey provides us the tools we need to grow and improve the quality of our program.



FIND this slideshow & further resources  
on our website:

UC Master Gardeners of Napa County  
<http://napamg.ucanr.edu>

Go to UCMaster Gardeners Website: [napamg.ucanr.edu](http://napamg.ucanr.edu)

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# UC Master Gardeners • Napa County

Home Garden Questions? **Events-Find us!** En español Members Area

The Master Gardener program is a volunteer organization associated with the University of California Cooperative Extension. *Our mission is to extend research based knowledge on home horticulture, pest management, and sustainable landscape practices to the residents of California and to be guided by our core values*

Then select **Events-Find us!**

Then click on **Past Programs and Events**

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## UC Master Gardeners • Napa County

Home Garden Questions? Events-Find us! En español Members Area

# Events and Find Us!

Click for Home Page!

**Events and Information**

**Past Programs and Events**  
Recordings and References

**We're Social!**

Like us on **facebook**

Join us **Instagram**

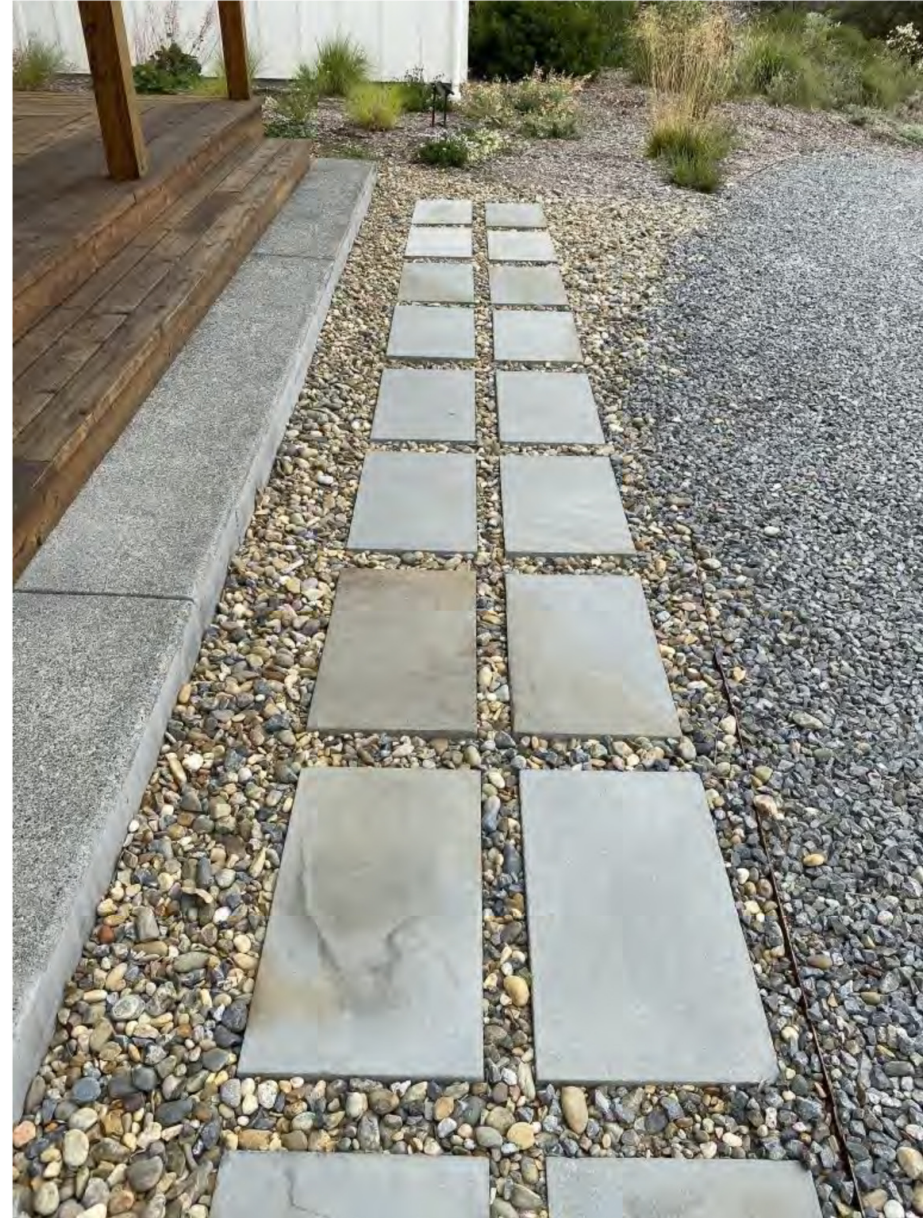
**Photo Albums!**

Explore our website to find many more gardening resources

Master Gardener Calendar	
Event Name	Date
<a href="#">Seasonal Tip &amp; Ideas for Gardeners - 1 hour Free Napa Library talk by zoom</a>	12/1/2022
<a href="#">Ole Health Garden monthly event -NO</a>	12/17/2022

# Xeriscape

Plant groupings that require little to no irrigation



Photos & garden design: April Owens

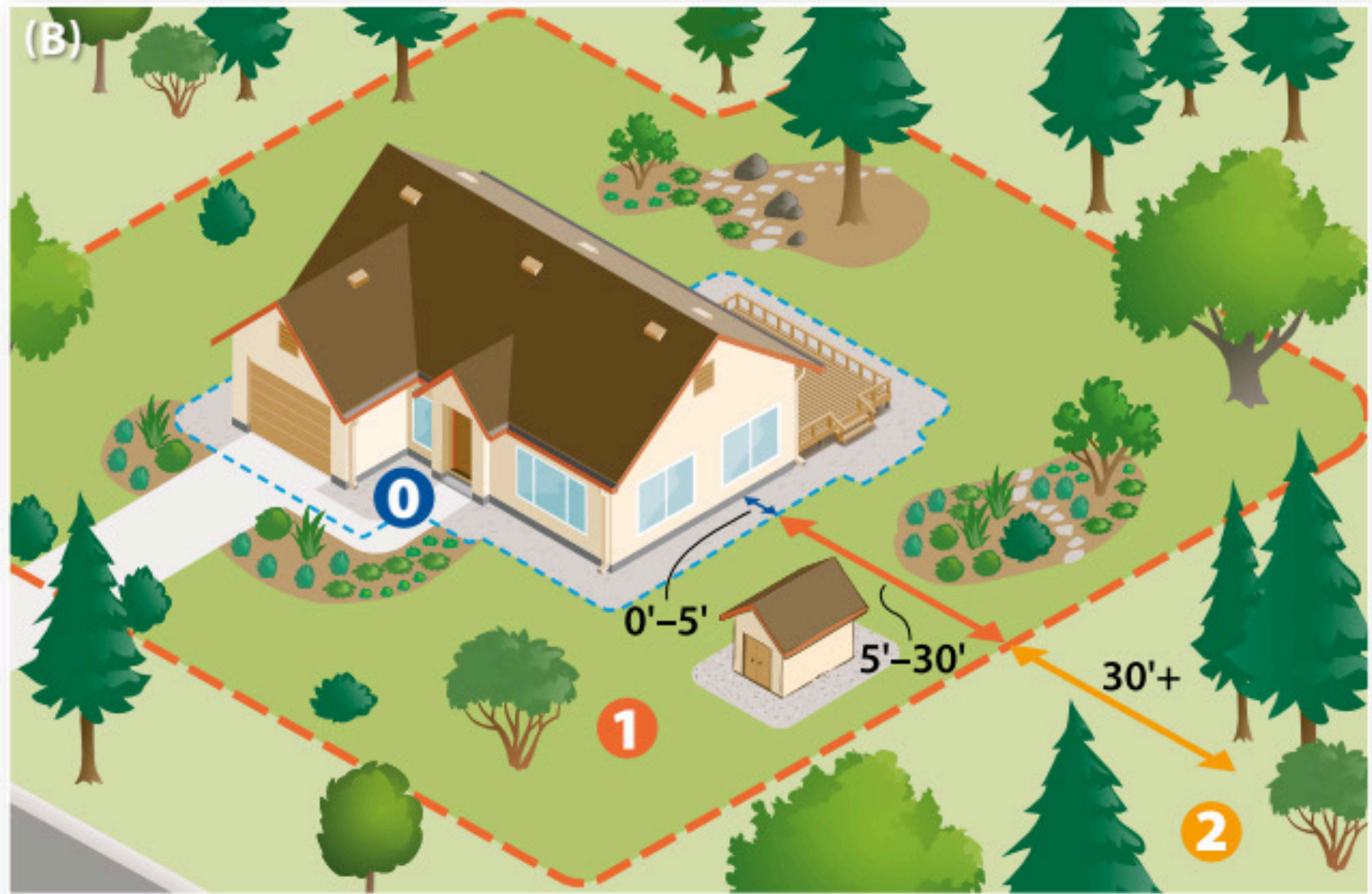
# Hydrozone

Plants grouped  
according  
to water needs



Photo courtesy of Clio Tarazi

(B)



# Zone 0

Hardscape  
0 organic matter







Photos & garden design: April Owens

# Mulching Considerations



Iris Craig

Mulch



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# Why do we mulch?

- To Keep Weeds from Growing
- Conserve Water
- Separate Plants from each Other



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# University of Nevada Testing Site



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# Wood Mulch Catches Fire

- With any spark, including a cigarette mulch can smolder beneath the layer, and later ignite.
- An area within 5 feet of your house needs to be rock or gravel.
- Wood mulch needs to be irrigated.
- There are wood mulches that burn more slowly than others.



# Research on Wood Mulches - University of Nevada(2008)

University of Nevada tested eight different mulches, allowing them to dry, and then igniting them. Results indicate the least flammable to most flammable

1. Composted wood chips
2. Tahoe chips single layer
3. Tahoe chips with fire retardant
4. Tahoe chips
5. Medium pine bark nuggets
6. Shredded western red cedar
7. Pine needles
8. Shredded rubber







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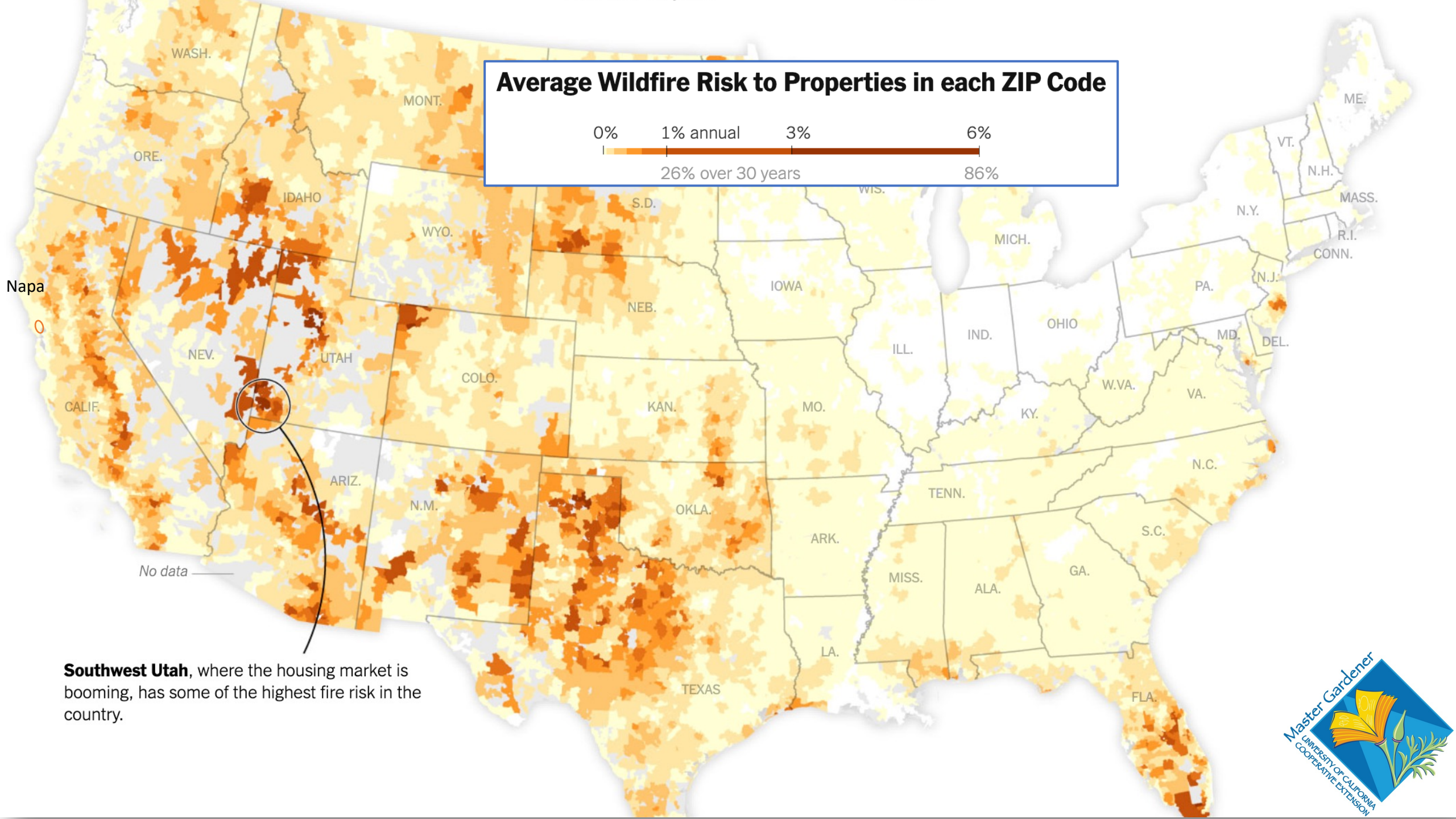
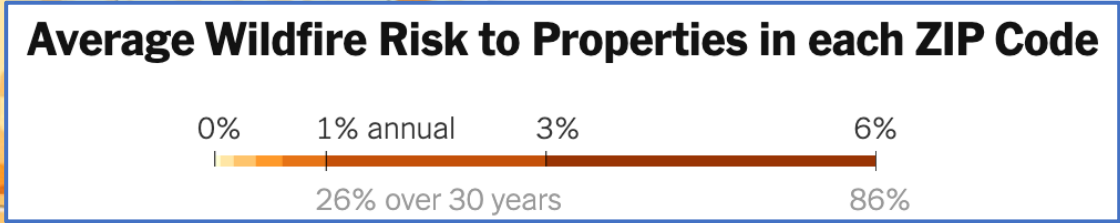
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# Firewise Landscaping

Cindy Kerson  
MG Class of '20



Napa

No data

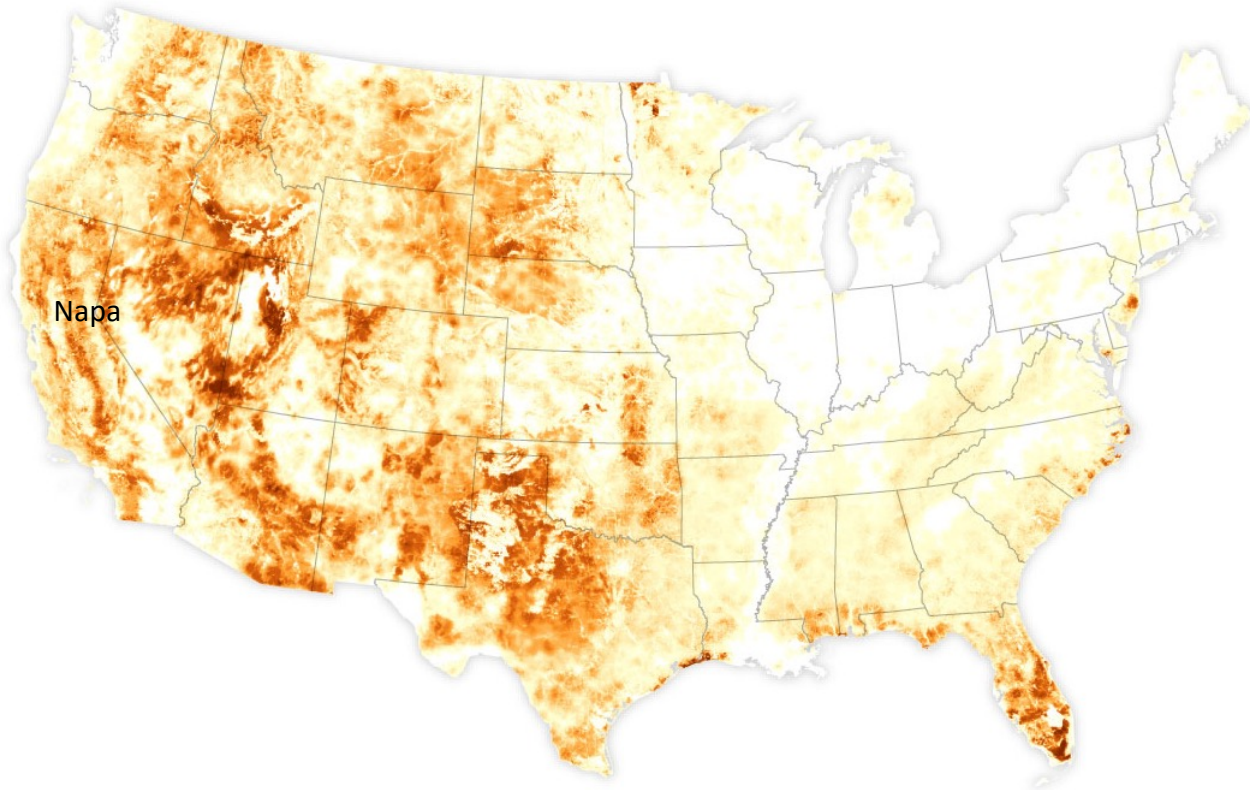
**Southwest Utah**, where the housing market is booming, has some of the highest fire risk in the country.



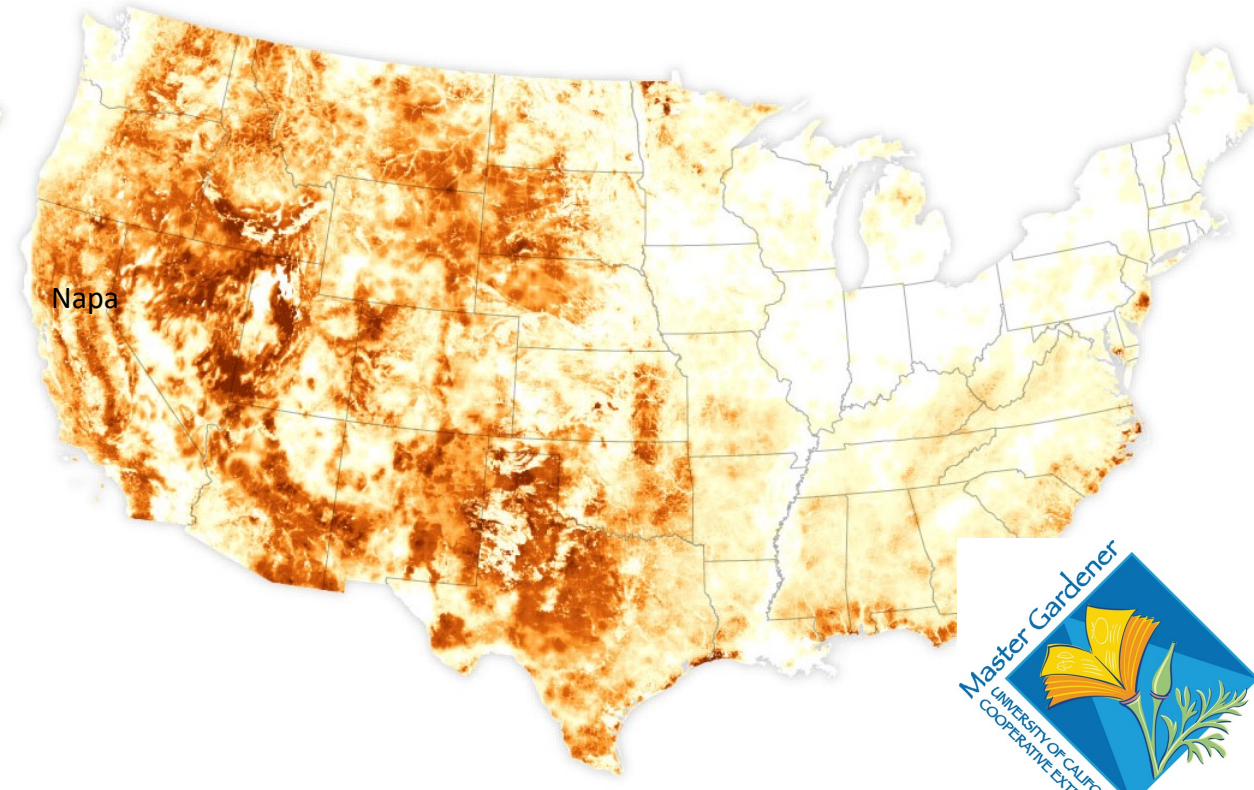
# Growing Wildfire Risk



The estimated likelihood of wildfire **today**.



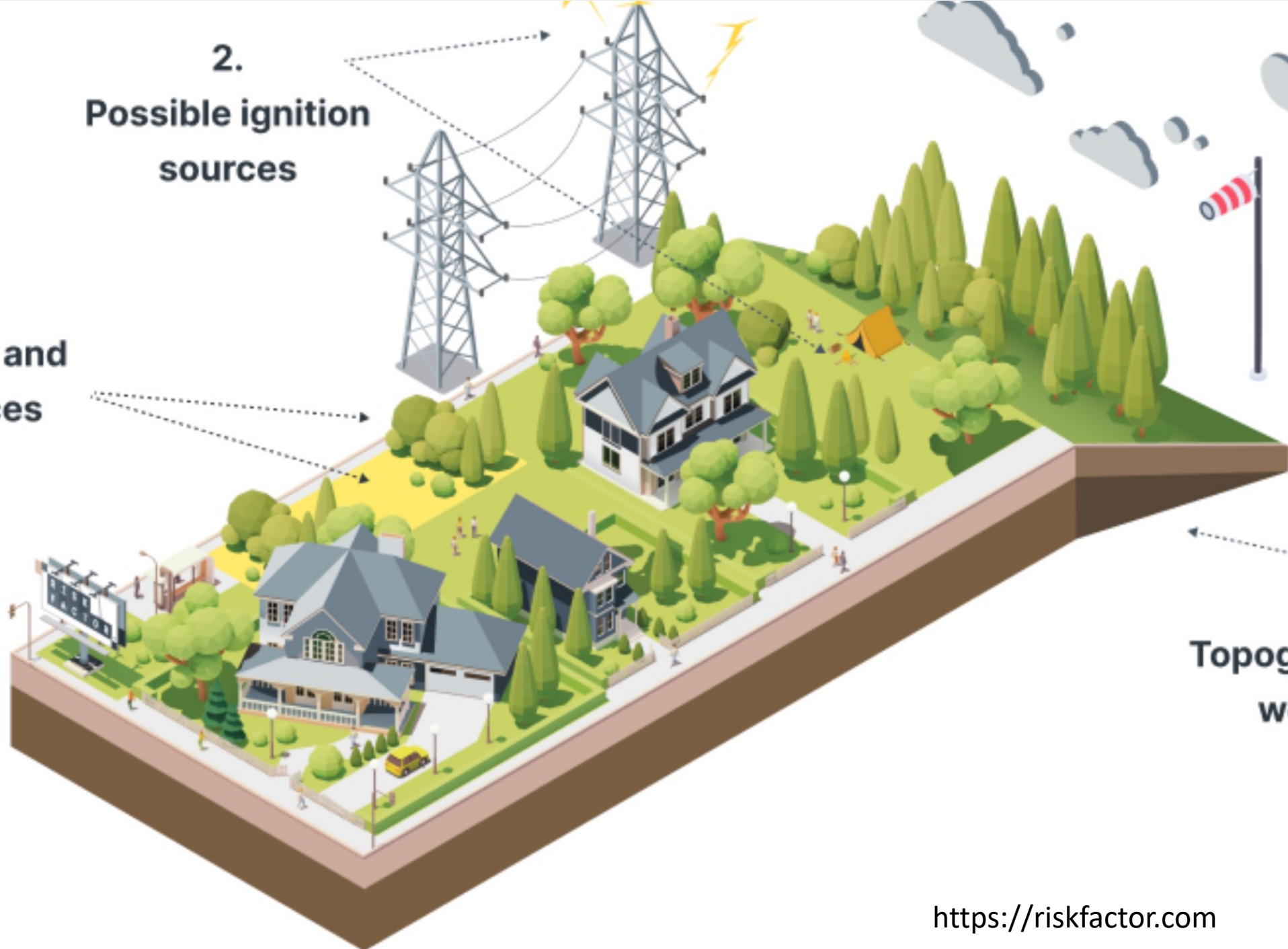
And **in 30 years**, with warming.



**1.**  
**Vegetation and  
fuel sources**

**2.**  
**Possible ignition  
sources**

**3.**  
**Topography and  
weather**





# WUI?

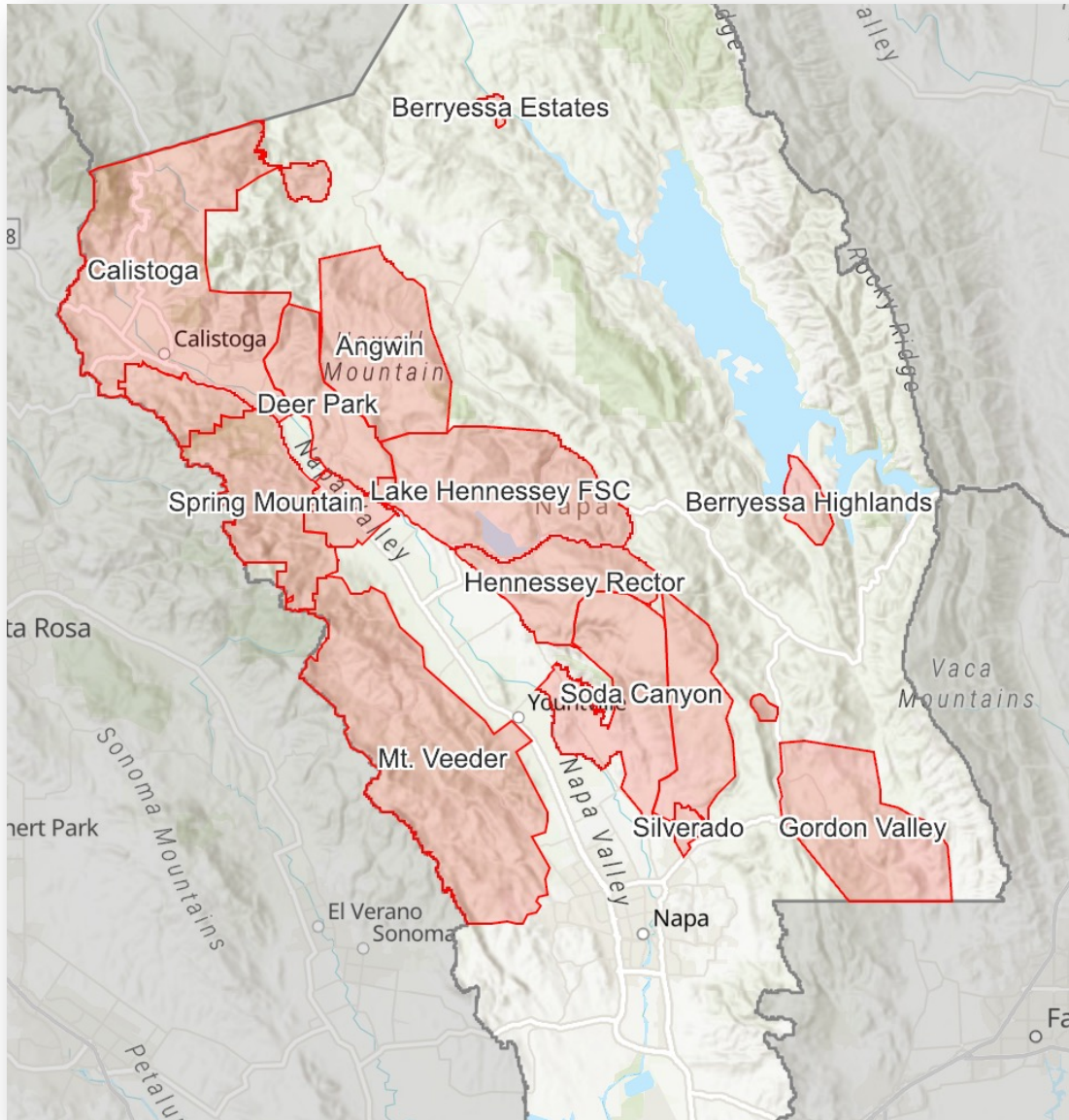
- Home hardening (the process of creating defensible space)
- Sustainable landscaping
- Zone 1: 0-5'
- Zone 2: 5-30'
- Zone 3: 30-100'



# Fire Safe Councils

## Napa Firewise:

Our FSCs are working hard to educate homeowners about Fire Safe activities while working with local fire officials to design and implement projects that increase the wildfire survivability of their communities. Many of our Fire Safe Councils have successfully implemented such projects as hazardous fuel reduction projects, community wildfire protection planning, and homeowner training. Two excellent examples of this are the [Angwin Fire Safe Council](#) and the [Mt. Veeder Fire Safe Council](#).



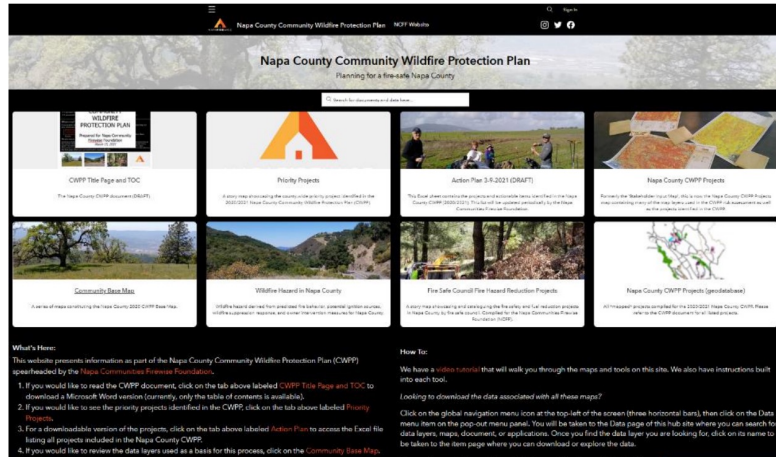
<https://napafirewise.org/fire-safe-councils>





# NAPA COUNTY COMMUNITY WILDFIRE PROTECTION PLAN

Prepared for Napa Communities Firewise Foundation  
March 15, 2021



# CWPP

- Community Wildfire Protection Plan
- Projects are county wide – bigger than local FSCs
- Major corridors
- Community ingress & egress
- Containment lines



## MINIMUM HORIZONTAL CLEARANCE

SHRUBS

TREES



Without a zone of defense, fire can easily travel from fuel to fuel. This is called the *Laddering effect*.



## MINIMUM VERTICAL CLEARANCE



<https://www.readyforwildfire.org/prepare-for-wildfire/get-ready/fire-smart-landscaping>

<https://idahofirewise.org/firewise-landscapes/firewise-landscape-design/>



# CONSIDERATIONS



1. Are they blade-leaf or needle-leaf evergreens?
2. Do they have stiff, woody, small or fine, lacey leaves.
3. Do they produce sap?
4. Are they manicured?
5. Are the leaves hairy or fuzzy?
6. Do they have loose or papery bark?
7. Do they flame (not smolder) when preheated and ignited with a match?
8. Are they heavy water users?
9. Do they have an extensive root system?
10. Does the plant contain a lot of waxes, oils, and resins?
11. Is the tree a hardwood?
12. How close is it to your home or other buildings?
13. Does the plant have an open-growth structure?
14. How fast does the plant grow?
15. How close is it to taller trees?
16. How tall will the plant grow?
17. Do they produce a lot of woody dead material?

# CONSIDERATIONS



1. Does it desiccate?
2. Is ETo high?
3. Are the leaves thick and rubbery?
4. Do the leaves close in the day and open at night?
5. Are the leaves hairy or fuzzy?
6. Will you be planting in a low area on your property?



<https://www.nbcbayarea.com/news/local/climate-in-crisis/as-drought-grows-which-plants-survive-resist-fire/2896220/>

## Fire-Prone Plants



Some plants are particularly susceptible to fire: they may ignite readily and burn intensely, and should be removed or aggressively maintained if present near a home, road, or driveway. You *may* be required to remove some or all of these species depending on local fire codes if present within 100' of structures.

### FIRE-PRONE PLANT CHARACTERISTICS

- Often blade-leaf or needle-leaf evergreens, or grasses.
- Often have stiff, woody, small or fine, lacey leaves.
- Leaves and wood often contain volatile waxes, fats, terpenes or oils (crushed leaves will have strong odors).
- Sap is usually gummy, resinous, and may have a strong odor.
- Usually contain plentiful fine, twiggy, dry, or dead materials.
- May have pubescent (hair covered) leaves.
- May have loose or papery bark.
- Usually flame (not smolder) when ignited with a match.

This is a list of some common fire-prone plants in Marin. It's important to remember that other plants may share these characteristics, and ALL PLANTS can burn if poorly maintained. Many California natives are fire-prone, and some depend on fire to reproduce. Native trees should be maintained free of dead material, with no limbs within 6'-10' of the ground, and clear of shrubs beneath the canopy. Other fire-prone natives should be maintained in isolated stands more than 30' from structures.

## Fire-Resistant Plants Common to Marin County, CA



Fire-resistant landscaping requires careful plant selection, placement, spacing, and maintenance to help resist the spread of fire to your home. Fire-resistant plants are usually easier to maintain and more naturally resistant to igniting from flames and embers. These plants are NOT "fireproof" and all require irrigation and frequent maintenance to resist ignition.

### FIRE-RESISTANT PLANT CHARACTERISTICS

- Tend to have leaves, not needles.
- Leaves tend to be supple, moist and easily crushed.
- Trees tend to be clean, not bushy, and have little deadwood.
- Shrubs are low-growing (2' or lower) with minimal buildup of dead material.
- Taller shrubs are clean, not bushy or twiggy.
- Sap is water-like and typically does not have a strong odor.
- Most fire-resistant trees are broad-leaf deciduous (lose their leaves), but some thick-leaf evergreens may also be fire-resistant.
- Most have low surface-area to volume ratios.
- Learn more at [www.firesafemarin.org/plants](http://www.firesafemarin.org/plants)



[https://firesafemarin.org/wp-content/uploads/2021/08/FIRESafe-MARIN\\_plant-list\\_2019.pdf](https://firesafemarin.org/wp-content/uploads/2021/08/FIRESafe-MARIN_plant-list_2019.pdf)

Good:

City of Oakland Watershed  
Improvement Program

**TREES**

Common Name	Botanical Name	Plant Type
Aspen, Cottonwood, Poplar	Populus spp.	deciduous
California Buckeye	Aesculus californica	deciduous
Coast Live Oak	Quercus agrifolia	evergreen
Madrone	Arbutus menziesii	evergreen
Quaking aspen	Populus tremuloides	deciduous
Western redbud	Cercis occidentalis	evergreen
White alder	Alnus rhombifolia	deciduous

Bad:

**TREES**

	Common Name	Botanical Name
	Acacia	Acacia spp.
	Arbor-Vitae	Thuja spp.
	Bald Cypress	Toxodium spp.
P	Blue Gum Eucalyptus	Eucalyptus globulus
	Cedar	Cedrus spp.
	Cryptomeria	Cryptomeria japonica (except dwarf)

# Good:

City of Oakland Watershed  
Improvement Program  
**FIREWISE NATIVES**

## SHRUBS

Common Name	Botanical Name	Plant Type
California wax myrtle	Myrica californica	evergreen
California fuschia, Hummingbird flower	Zauschneria californica	perennial
California Lilac, Blueblossom	Ceanothus thrysiflorus	evergreen
Coastal wild gum	Grindelia stricta venulosa	perennial
Coffeeberry	Rhamnus californica	evergreen
Creeping mahonia	Mahonia repens	evergreen
Douglas iris, Pacific coast iris	Iris douglasiana	bulb
Evergreen currant, Catalina perfume	Ribes viburnifolium	evergreen
Fremontia, Flannel Bush	Fremotodendron spp.	evergreen
Golden yarrow	Eriophyllum confertiflorum	perennial
Holly-leafed cherry	Prunus ilicifolia	evergreen
Lemonade berry	Rhus integrifolia	evergreen
Manzanita	Arctostaphylos	evergreen
Monkey Flower	Mimulus longiflorus (Diplacus longifolius)	perennial
Pink flowering currant	Ribes sanguineum	evergreen
Redberry, Red-berried buckthorn	Rhamnus crocea	evergreen
Saltbush	Atriplex lentiformis breweri	deciduous
Sandhill sage	Artemisia pycnocephala	evergreen
Santolina lavender, Gray lavender	Santolina chamaecyparissus	evergreen
Showy Island snapdragon, Hummingbird flower	Galvezia speciosa	evergreen
Sonoma sage	Salvia sonomensis	perennial
Toyon	Heteromeles arbutifolia	evergreen
Western azalea	Rhododendron occidentale	evergreen
Wild ginger	Asarum caudatum	perennial
Wooly blue curls, Romero	Trichostema lanatum	perennial

# Bad:

## SHRUBS

	Common Name	Botanical Name
	Buckwheat	Erigonum spp.
	California sagebrush	Artemesia californica
P	Chamis, Greasewood	Adenostoma fasciculatum
P	Coyote Brush	Baccharis pilularis consanguinea
	Hopseed Bush	Dodonaea viscosa
	Juniper	Juniperus spp.
P	Red Shanks	Adenostoma sparsifolium
	Scotch/French/Spanish Broom	Cytisus, Genista, Spartium



# Good:

City of Oakland Watershed  
Improvement Program  
FIREWISE NATIVES

## GROUND COVERS

Common Name	Botanical Name	Plant Type
Thrift, Common thrift	Armeria maritima	evergreen
White Yarrow	Achillea millefolium white	perennial
California poppy	Eschscholzia californica	perennial
Creeping red fescue	Festuca rubra	perennial
Wild strawberry, Sand strawberry	Fragaria chiloensis	evergreen
Gum plant, Coastal wild gum	Grindelia stricta	perennial
Island alum root, Coral bells	Heuchera maxima	perennial
Wax myrtle	Myrica californica	evergreen
Sage	Salvia spp.	perennial
Blue-eyed grass/ Yellow-eyed grass	Sisyrinchium bellum/ Sisyrinchium californicum	perennial grass

# Bad:

## GROUND COVERS

	Common Name	Botanical Name
	Algerian Ivy	Hedera canariensis
P	Coyote Brush	Baccharis spp. (when overgrown)
P	Juniper	Juniperus spp.

Good:

City of Oakland Watershed  
Improvement Program  
FIREWISE NATIVES

Bad:

**PERENNIALS**

	<b>Common Name</b>	<b>Botanical Name</b>
	Bamboo	Bamboo spp.
	Black Sage	Salvia melilifera
	Deer Grasses	Muehlenbergia spp.
	Fountain Grasses	Pennisetum setaceum
	Grasses	Miscanthus spp.
	Pampas grass	Cortaderia selloana

# Drought Tolerant and Firewise?

Annuals –  
drought avoiders



Plant Types	
Succulents	More Fire Resistant
Ground Covers	
Turf	
Annuals	
Perennials	
Deciduous Trees	
Shrubs	
Grasses	
Conifers	Least Fire Resistant



# Fire Opportunists

- Coastal Lotus
- Twining Snapdragon
- Whispering Bells
- Poodle-dog Bush
- Stinging Lupine
- Phacelia
- Fire Poppy
- Fireweed
- Some mushrooms
- French Broom
- Brewers calandrinia



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# Walking My Garden Talk

Before



Compost



After



## References

Firesafe Landscaping : [ucanr.edu/bcmg/resources/firesafe](http://ucanr.edu/bcmg/resources/firesafe)

Fire Safe San Mateo: [firesafesanmateo.org](http://firesafesanmateo.org)

Wildfire Preparedness in the Home: [sonomamg.ucanr.org/firewise-landscaping](http://sonomamg.ucanr.org/firewise-landscaping)

[chrome-extension://efaidnbnmnnibpcajpcglclefindmkaj/https://naes.agnt.unr.edu/PMS/Pubs/1510\\_2011\\_95.pdf](chrome-extension://efaidnbnmnnibpcajpcglclefindmkaj/https://naes.agnt.unr.edu/PMS/Pubs/1510_2011_95.pdf)

<https://anrcatalog.ucanr.edu/pdf/8695.pdf>

[Ready-Set-Go-Plan-09 CALFIRE am.pdf](#)

[https://firesafemarin.org/wp-content/uploads/2021/08/FIRESafe-MARIN\\_plant-list\\_2019.pdf](https://firesafemarin.org/wp-content/uploads/2021/08/FIRESafe-MARIN_plant-list_2019.pdf)

## Upcoming Events



5/7/23  
2-4 p.m.

Food Growing Forum (in person): Growing Olives  
Held at a home olive orchard. Register at  
<https://napamq.ucanr.edu/eventsfindus/>

5/12/23  
10 a.m.-noon

Guided Tree Walk at Fuller Park, corner of Oak and Jefferson Sts., Napa  
Pre-register at <https://napamq.ucanr.edu/eventsfindus>

5/13/23  
10 a.m.-4 p.m.

Climate Smart Garden Tour—hosted by Napa RCD  
Tour of 11 private and public gardens in Napa and Yountville. Tickets are \$5 at  
<https://www.eventbrite.com/e/open-garden-garden-month-2022-tickets-332065656317>

5/20/23  
10 a.m.-noon

Gardening With the Masters at OLE Health Garden  
300 Hartle Ct., Napa.  
Register at <https://www.olehealth.org/events/community-outreach-resources/>

5/20/23  
10 a.m.-noon

Dual Composting Workshop: learn about worm or back yard composting  
Napa Valley College, Upper Valley Campus, 1088 College Ave, St. Helena  
Register at <https://napamq.ucanr.edu/eventsfindus>

5/27/23  
10 a.m.-noon

Pollinators in Your Garden (in person) at Las Flores Learning Garden  
4300 Linda Vista Ave., Napa  
Register at <https://napamq.ucanr.edu/eventsfindus>



# Questions?

UC Master Gardeners of Napa County  
<http://napamg.ucanr.edu>