



Creating and Maintaining a Fire Wise Landscape

Presented by

Alice Cantelow

UCCE Master Gardener

Robin Stanley

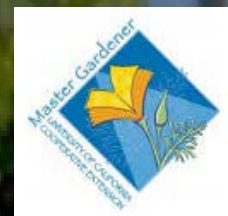
UCCE Master Gardener

Mark Stanley

California Dept. of Forestry
and Fire Protection, Retired

Sponsored by

University of California
Cooperative Extension Master Gardeners
of El Dorado County



It Does Happen Here



King Fire

What are the consequences of climate change?

SCIENCE
CONNECTIONS →

WESTERN WILDFIRES & CLIMATE CHANGE

Wildfires are **increasing** and wildfire season is getting **longer** in the Western U.S.



Average number
of large wildfires
per year
bigger than 1,000 acres



1980-1989
~140



1990-1999
~160



2000-2012
~250

Average length of wildfire season

Early 1970s: 5 months



Today: 7+ months

- Warmer and drier conditions, overall
 - Increase shrublands/ chaparral over grasslands **OR** Increased fire → loss of woody-dominated communities, replaced by grasslands

Our Discussion of the Major Fires Is Limited

- The basics of fire wise landscaping are the same, if even more important.
- Our focus is on what you CAN control.
- The need for collaboration is greater than ever.
- We do a short version of this talk for neighborhood groups.

A Look at Today's Topics

- The basics of fire
- The principles of fire wise landscaping
- Integrating native and drought tolerant plants into the landscape
- A fire agency's perspective
- Your plan of action

Our Goals for Today

- We want you to understand:
 - Your property's over-all risk level
 - The fire equation and how fire moves
 - The principles of fire wise landscaping
 - Ways landscapes can be attractive and fire wise
 - The overlap of fire wise and drought tolerant plants
- We want you to identify:
 - Fire wise landscaping resources
 - 3 key actions you can take starting today

Our Hope for Today

We don't want you to feel like we dictated what you should do.

We want you to feel empowered to create a landscape that

- considers aesthetics
- incorporates low water use plants
- creates a more defensible space in the event of a fire.

Use Your Checklist

FIREWISE LANDSCAPING CHECK LIST UCCE MASTER GARDENERS OF EL DORADO COUNTY

1. Use the insurance chart on page 1 of the class handout to score your house: Remember – the lower your score the better. The higher your score, the more you need to take action. _____

2. What do you think is the biggest risk factor for your house and property?

3. What have you already done to decrease fire risk around your home and property?

4. Check 2 or more things that you can do to better protect your house:

- ☐ Once you have cut dead branches, arrange for chipping through the EDC Fire Safe Council. Plan early before funds are gone.
- ☐ Limb up trees to a height of at least 6'.
- ☐ Create horizontal spacing between shrubs and trees.
- ☐ Create vertical spacing between shrubs and trees.
- ☐ Remove fallen leaves, needles, twigs, bark, cones, and small branches in both zones. However, they may be permitted to a depth of 3 inches if erosion control is an issue.
- ☐ Look at firewise plant lists to determine the overall vulnerability of your current landscape.
- ☐ Create a landscape plan that incorporates plants that are both fire-resistant and drought tolerant into your landscape.
- ☐ If you know you will be replacing some areas with more drought tolerant/firewise plants in the future, create a plan for removal of existing plants and irrigation of any new plants.
- ☐ Other

Every single check list will look different
at the end of the day.

No Need to Take Many Notes

Refer to your handout to follow along with the 6+ steps.



.....University of California Cooperative Extension¶
.....MASTER GARDENERS OF EL DORADO COUNTY¶



1981—MASTER GARDENERS—SERVING EL DORADO COUNTY FOR THIRTY-FOUR YEARS—2015¶

311 Fair Lane, Placerville, CA 95667¶

(530) 621-5512¶

Firewise Landscaping in a Weather Resilient Garden

Robin Stanley—UCCE/El Dorado County Master Gardener¶

Mark Stanley—Ret. Chief Deputy Director—California Department of Forestry and Fire Protection¶

¶ Visualize and map your own property. Resolve that you will leave here today with a plan of action!¶

¶ California law mandates 100' of defensible space around your house and other structures. You may have to clear an even larger area, depending on your slope.¶

¶

slope

| | | | | |
|---|---|--------|---|---|
| A | → | 0—20% | → | Level—congratulations¶ |
| B | → | 21—40% | → | Moderate—fairly easy to walk and to work¶ |
| C | → | +40%→ | → | Steep—a challenge to climb and to clear¶ |

¶

Why Fire Wise Landscapes Matter

Landscaping to the Letter of the Law (and More)

A Aesthetics

E Enforcement

I Insurance

O Opportunity

U Upkeep (aka Maintenance)

Why Should You Care?

- Your house and property are major investments.
- Your homeowner's insurance may be affected.
 - How many have had insurance issues?
- You can rebuild a house.
- Can you recreate a home?
- It's the law.

Where Do You Live?

- Urban
- Subdivision
- Rural (under 2 acres)
- Rural (over 2 acres)
- Other

Who Will Win Bragging Rights?

- How much work have you done on the fire safety of your property this year?
- What fire safe practices do you already know?
 - Time for a quiz...

A Quick Quiz

Please answer TRUE or FALSE.

- ___1. The chaparral plant does not grow in El Dorado County.
- ___2. You should only have a fire extinguisher in your kitchen.
- ___3. The most frequent cause of fires in *non-urban areas* in California is arson.
- ___4. Grassland fires are hotter and more destructive than forest fires.
- ___5. You should clear dry grass and dead brush for at least 30 ft. from your house.

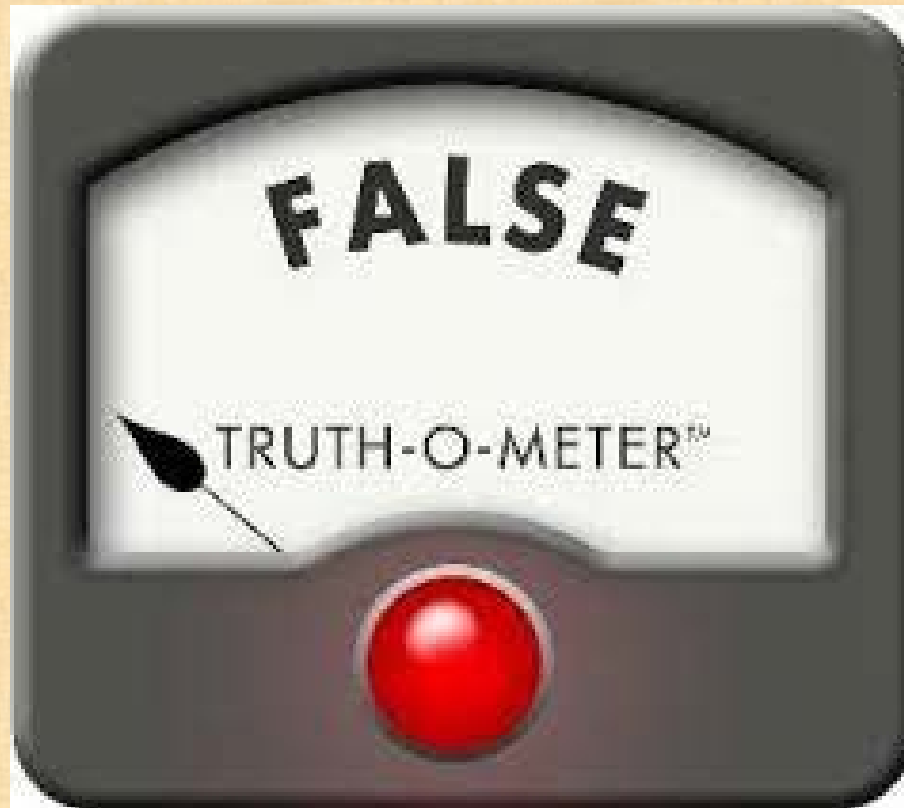
More Quiz Questions

- ___6. A deck will keep your house safe from wildfire.
- ___7. The necessary ingredients for fire are oxygen and fuel.
- ___8. The only requirement for door-yard burning is that it must be a burn day.
- ___9. Fire departments will risk lives to save every house in a fire.
- ___10. A drought tolerant landscape can be made fire wise.

Quiz Answers

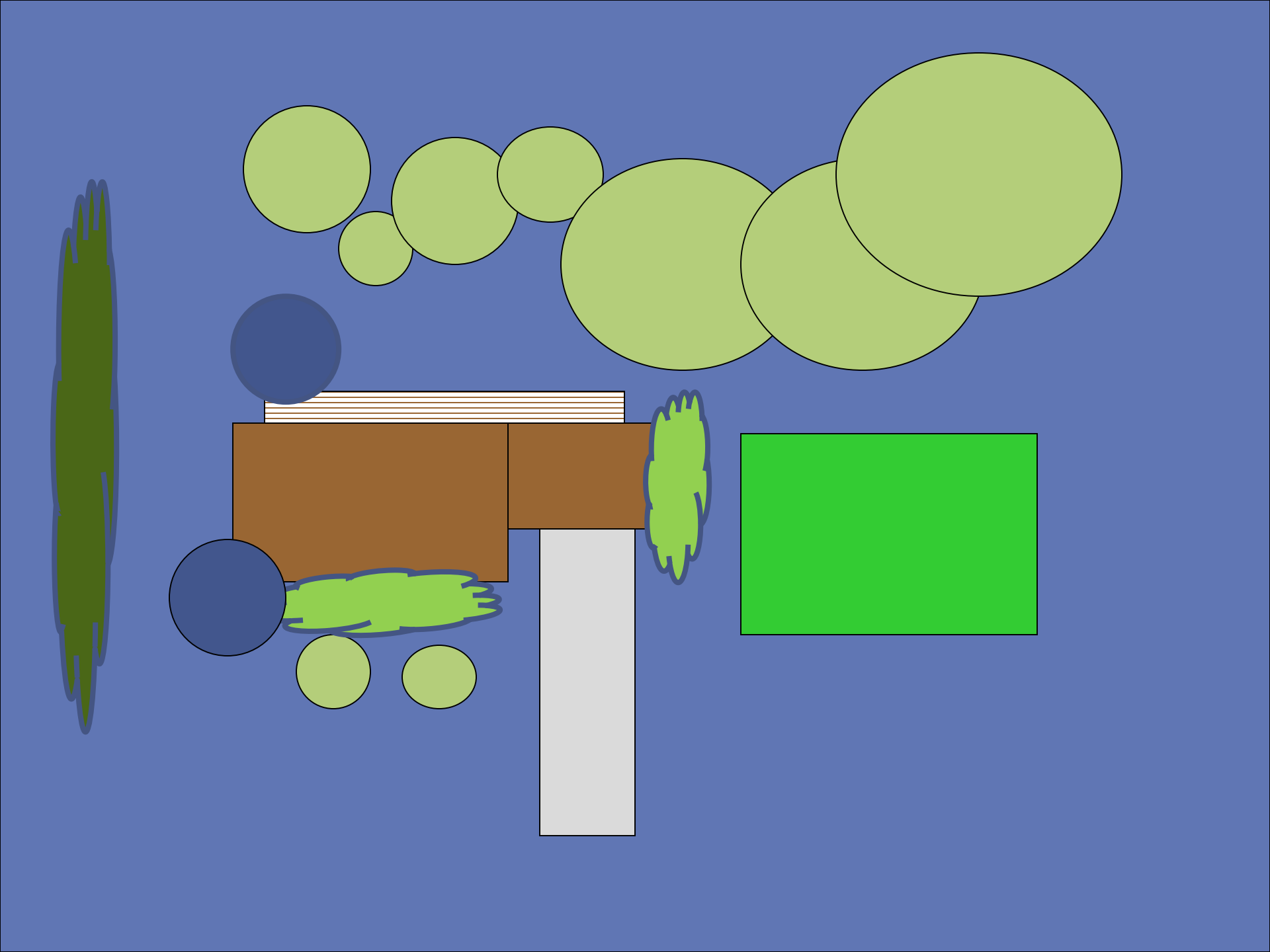
Are you surprised?

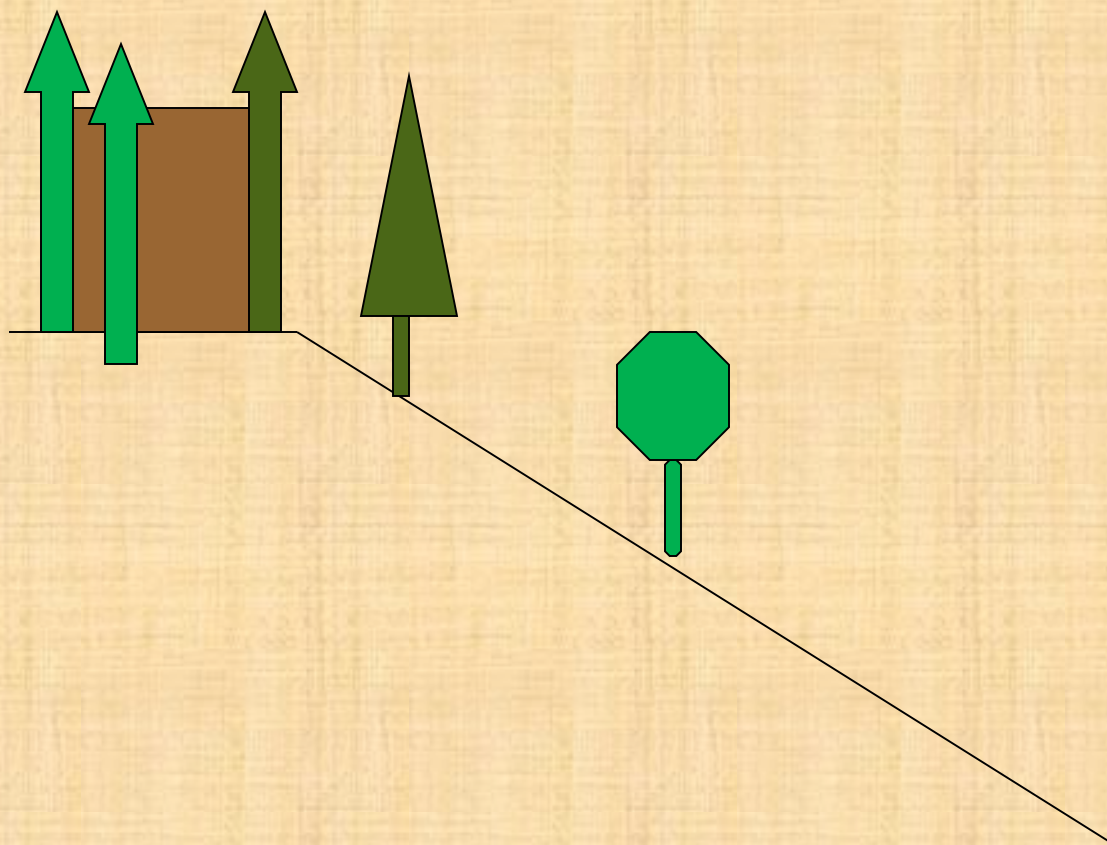
All are false except #10.



What Do You Have Now?

- Take a minute to envision your property.
 - Aerial view
 - Side view
- Why pay attention to the slope?
- How many of you live on level ground?
- Is your area rural, suburban, or urban?







Assessing Your Property

**Check how accurately you visualized
your house and vegetation by
checking Google Satellite view when
you get home.**

Assessing Your Property

- Grassland
- Chaparral
- Oak woodland
- Conifers
- A little bit of everything

Assessing Your Property

What is your property's slope like?

- | | | |
|----------|-----------------|---|
| A | 0 – 20% | LEVEL– congratulations |
| B | 21 – 40% | MODERATE– more difficult to walk and to work |
| C | +40% | STEEP – a challenge to climb and to clear |



| | | |
|---------------------------------|------------------------------|------------------------------------|
| Grass, weeds small shrubs +1 | 20 – 40 degree slope +3 | Rough terrain in the area +1 |
| Shrubs, small trees +2 | +40 degree slope +4 | History of fire in the area +1 |
| Timber wood- land +3 | Less than 1 home/10 ac +1 | Extreme fire weather +1 |
| 1 – 10 degree slope +1 | 1 home per 5- 10 ac +2 | Good water, roads, signs -1 |
| 10 – 20 degree slope +2 | 1 home per 0-5 ac. +3 | Strict local fire ordinances -1 |

Another Checklist

| Home & Site Hazard Assessment | | | |
|---|---|--------------|------------|
| Important Factors | Characteristics of Material | Point Rating | Your Score |
| What kind of roofing material do you have? | If you have asphalt shingles, metal, clay tile or ULC rated shakes | 0 | |
| | If you have unrated wooden shakes | 30 | |
| How clean is your roof? | No needles, leaves or other combustible materials | 0 | |
| | A scattering of needles and leaves | 2 | |
| | Clogged gutters and extensive leaf litter | 3 | |
| What is the exterior of your home built out of? | Non-combustible material stucco, metal siding, brick | 0 | |
| | Logs or heavy timbers | 1 | |
| | Wood, vinyl siding or wood shakes | 6 | |
| Are your eaves and vents closed up and screened? | Closed eaves and vents with 3 mm wire mesh | 0 | |
| | Closed eaves and vents with no mesh | 1 | |
| | Open eaves, open vents | 6 | |
| Have you screened in your balcony, deck or porch? | All decks, balconies and porches are screened or sheathed in with fire resistant material | 0 | |
| | All decks, balconies and porches are screened or sheathed with combustible material | 2 | |
| | Decks, balconies and porches are not screened or sheathed in | 6 | |
| How fire resistant are your windows and doors? | Tempered glass in all doors/windows | 0 | |
| | Double pane glass: | | |
| | • Small/Medium | 1 | |
| | • Large | 2 | |
| | Single pane glass: | | |
| | • Small/Medium | 3 | |
| | • Large | 4 | |

It's from British Columbia, but it's helpful here, and it's on your resource list.

Assessing Your Property and You

- What is your current level of risk?
 - Based on type and placement of vegetation
 - Based on slope
 - Based on density
- What are you willing to spend to be safe?
 - Money
 - Time
 - Energy
- What can you afford to lose?

CAL FIRE NEW RECOMMENDATIONS

Press Release - March 5, 2019

18. CAL FIRE should update codes governing defensible space and forest and rangeland protection.
 - a. Review the penalty for non-compliance with defensible space code, establishing a fixed compliance date in lieu of three-inspection process. Include vacant land provisions.
 - b. Review enforcement the full 100 feet of defensible space around a structure when the structure is closer than 100 feet from the parcel line.
 - c. Consider the home and the first 0-5 feet as the most critical and hardened aspect of home hardening and defensible space. Consider requiring ignition resistant building material, only allow bark and hardscape, not trees or shrubs in this area.
 - d. Consider science-based regulation of wood piles and wood fences.

A Word about Insurance

- Notes from Carl Hagan are on your handout. Don't file frivolous claims and know what your policy does and doesn't cover.
- Also check this resource on your handout:
- <https://einhorninsurance.com/insurance-advice/fire/california-fair-plan/>
- While we don't endorse vendors, this is a better explanation than the FAIR website.



NO DEFENSIBLE SPACE

DEFENSIBLE SPACE





Every Property Is Unique

People generally make tradeoffs balancing

- the requirements of the law
- the advice of the professionals
- personal preferences and priorities.



Fire



Know the Basics of Fire:

- Fuel + Oxygen + Heat = Fire
 - What of these 3 can you control?
- Fuel is...
 - Dry or dead vegetation
 - Wood siding, roofing, decking
 - Trees
 - Woody shrubs or perennials



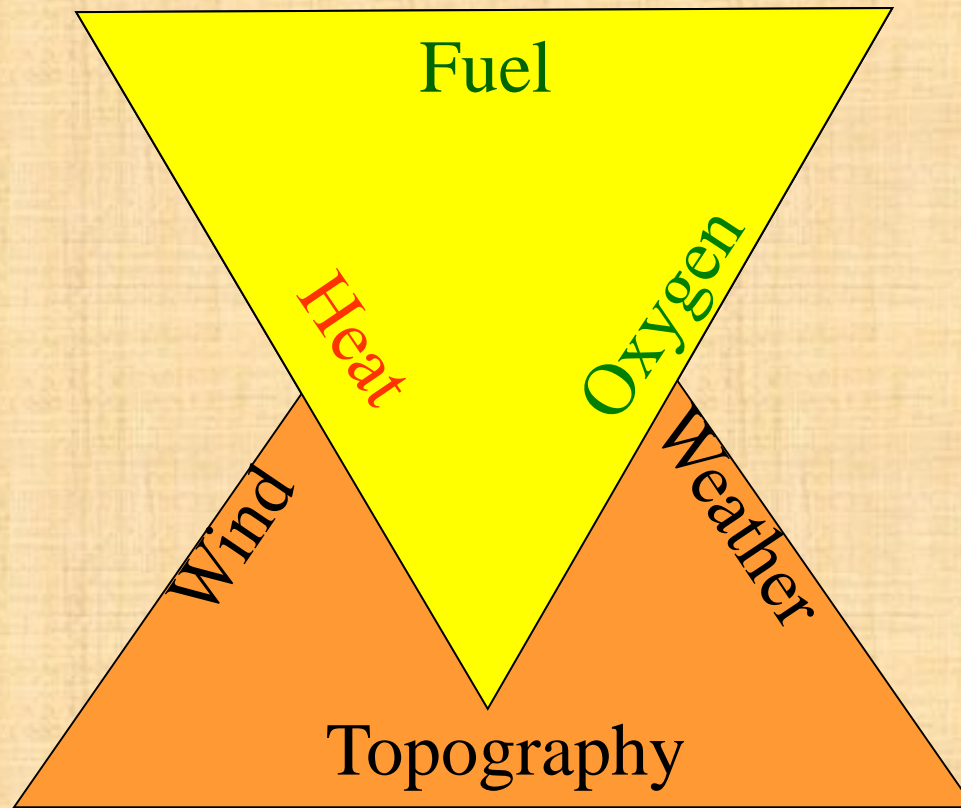
Your Home

Fuel Is...

anything that will burn.

Fire Triangles

Fire Triangle



Fire Environment Triangle

FIRE



Camp Fire

1 hour after it
started





Camp Fire

The Not-So-New Law (January, 2005)

Things Have Changed:

- The “new” state law extended the defensible space from 30’ to 100’.
- That doesn’t sound like much - just 70’ -but compare an:

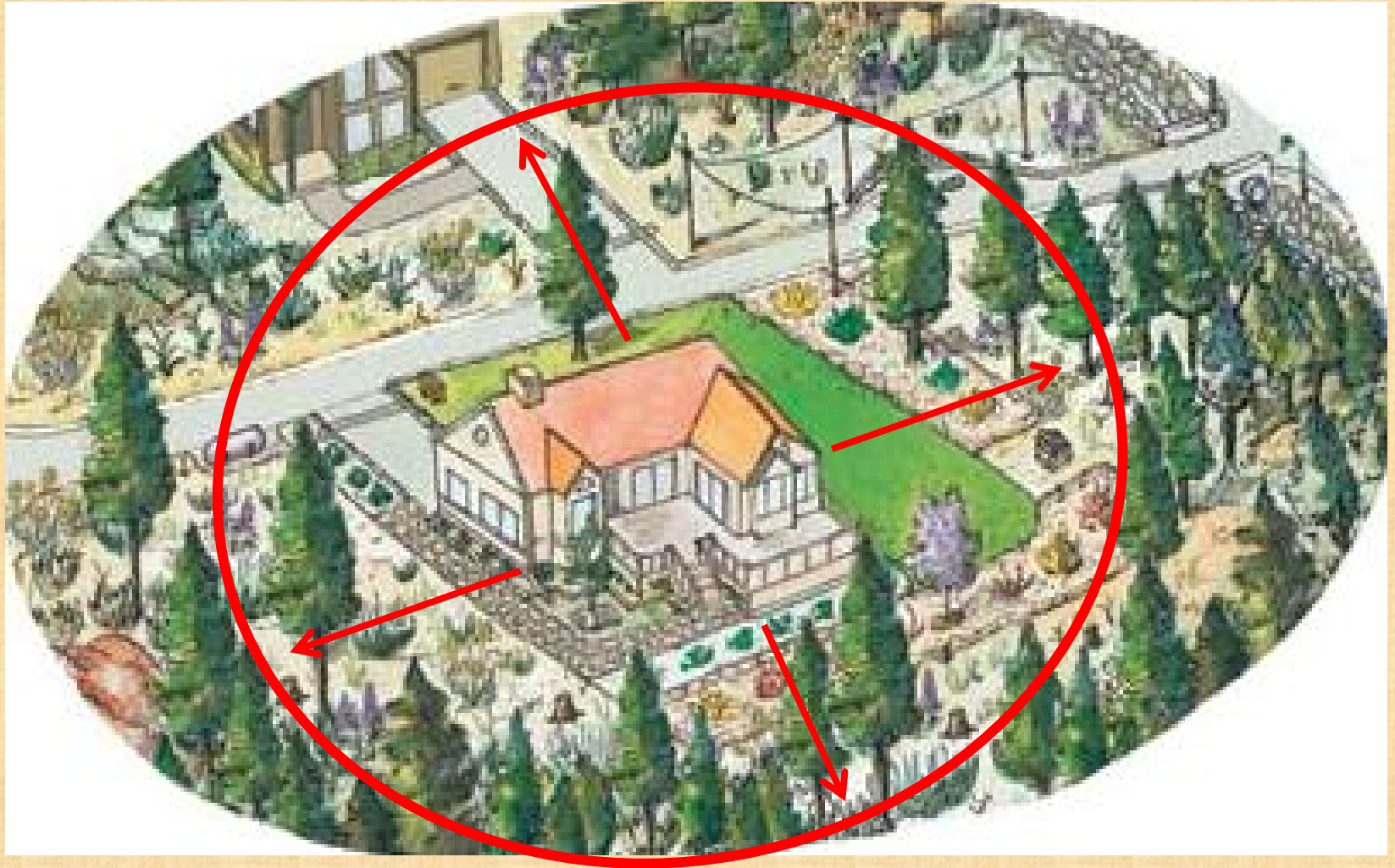
area with 30’ clearance = 2,826 ft²

vs.

area with 100’ clearance = 31,400 ft²

11 times more area

How Do I Measure





County of El Dorado Vegetation Management & Defensible Space Ordinance

Ordinance

DID YOU KNOW that El Dorado County has a new Vegetation Management & Defensible Space Ordinance? (Ordinance No. 5101, Chapter 8.09) *Effective May 30, 2019*

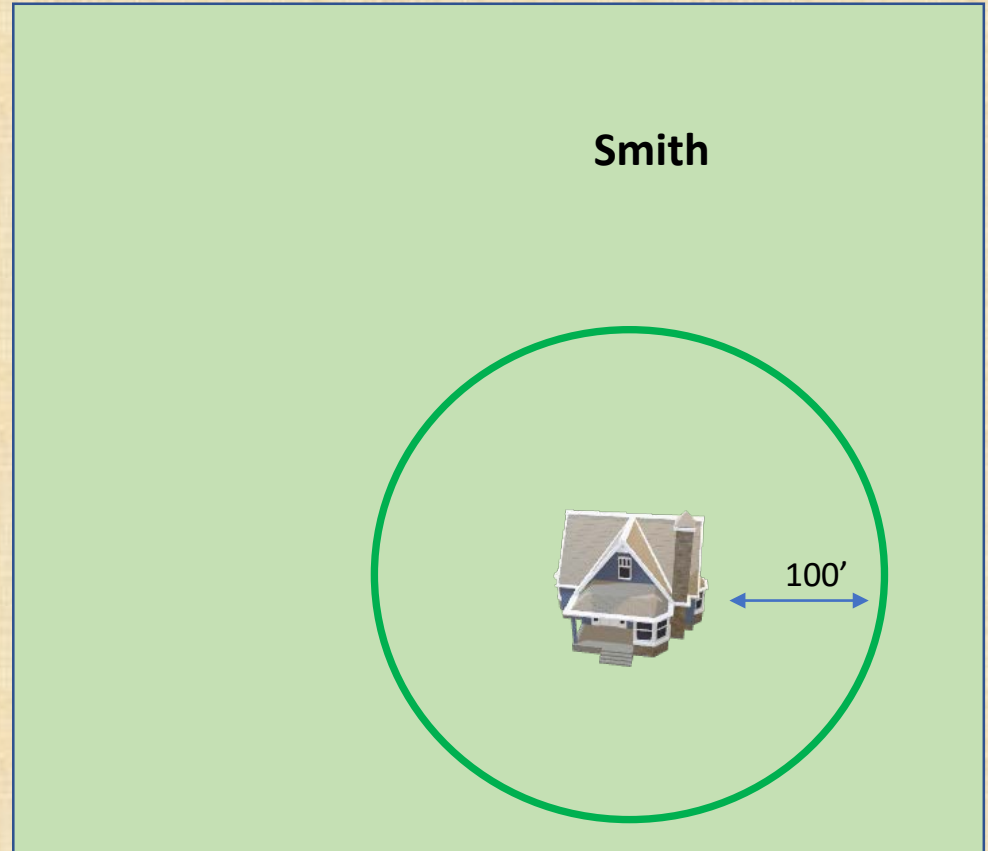
- Vegetation Management is controlling plant material to prevent wildfire spread. Vegetation management requires an ongoing commitment.
- Defensible Space is the area around a structure where combustible vegetation that can spread fire has been cleared, reduced or replaced.
- For improved parcels, any structure (greater than 120 sq. ft.) is required to have minimum defensible space of 100-feet from each side of the structure.*
- Good Neighbor Policy: property owners may be required to clear up to 100-feet of defensible space from structure(s) located on a neighboring parcel.*
- Inspections begin June 1, 2020.

*Review the Vegetation Management and Defensible Space Ordinance for more details.

**Take time now to learn, prepare and protect yourself,
your family, your property and your community.**

For more information, visit: www.edcgov.us/government/CAO/VegetationManagement
or call 530-621-4663.

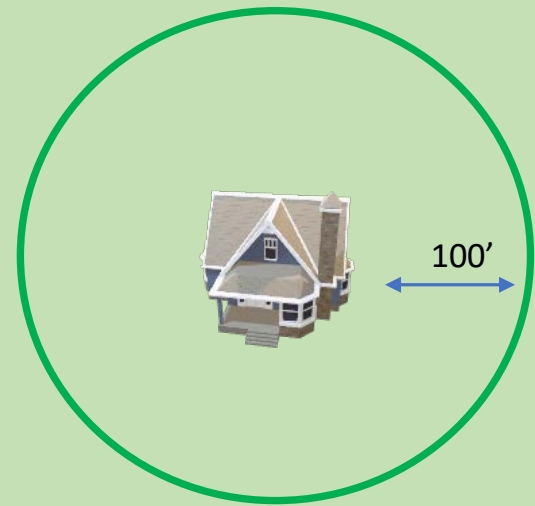
New Ordinance & How it May Affect You



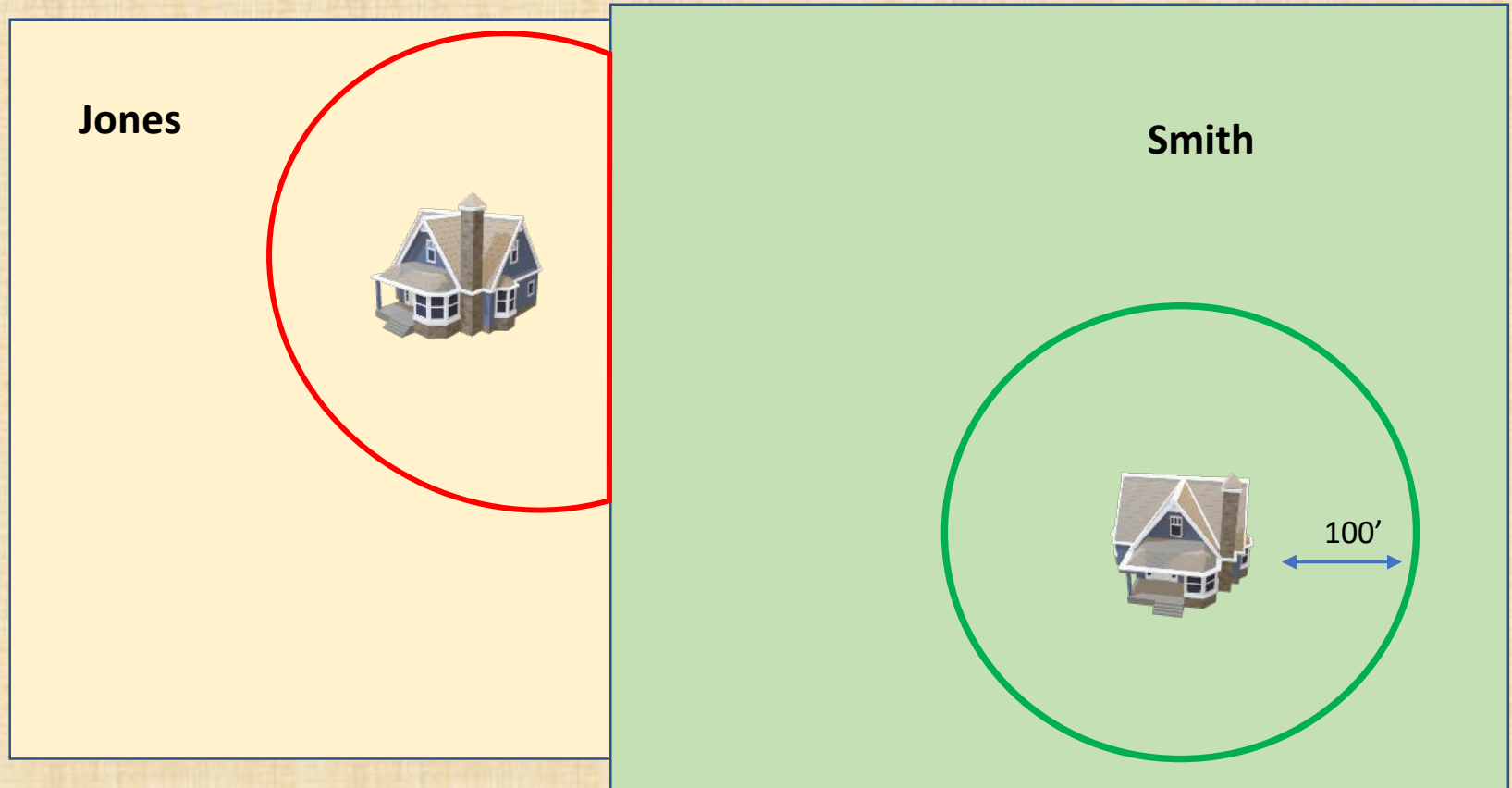
Jones



Smith

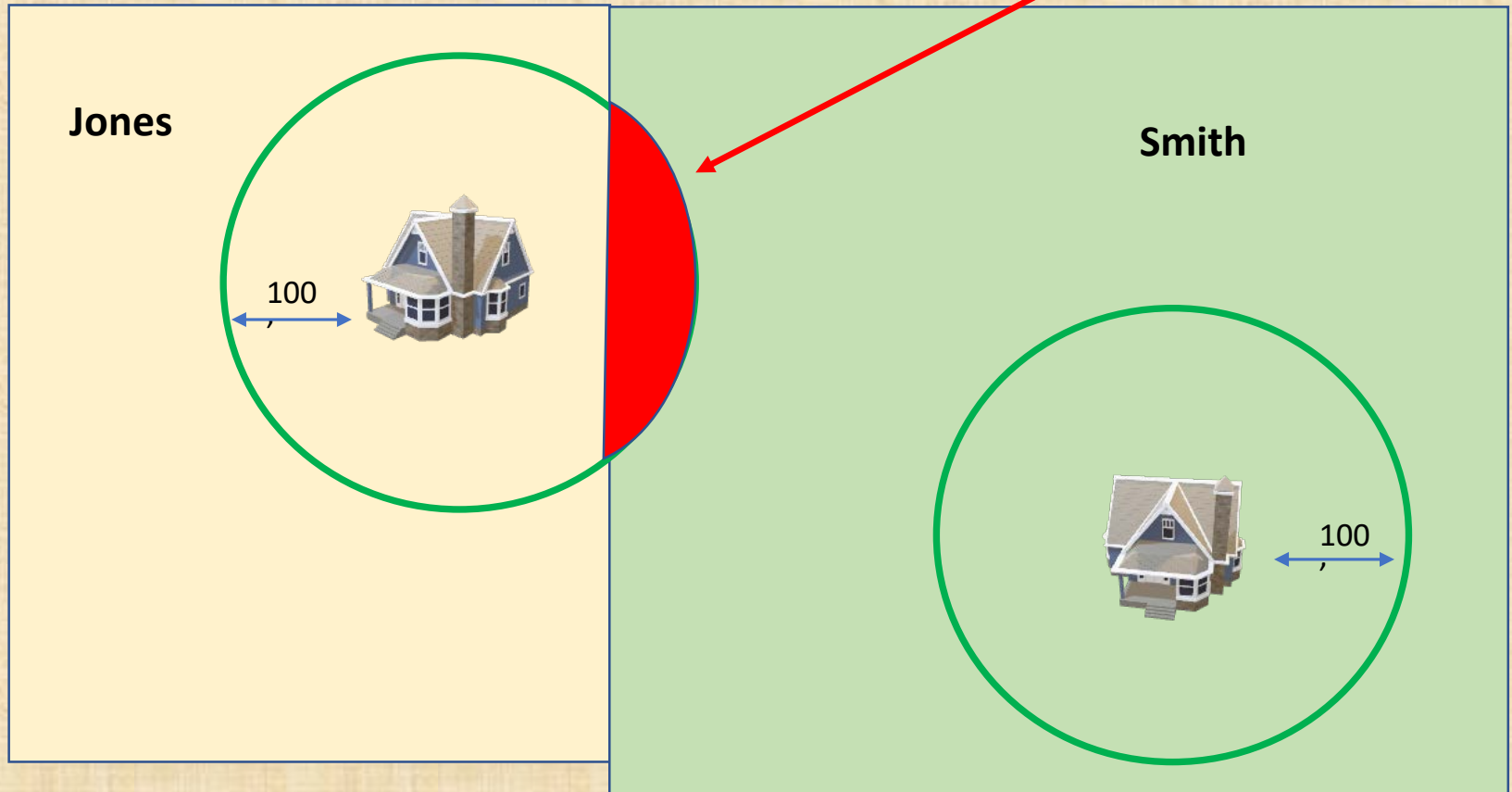


Old Law --- 100' or to the property line



New ordinance

Smith is now tasked with cleaning the red area on his property.





Spacing is what the law is getting at

- Spacing depends on slope, height of vegetation and fire risk.
 - Steeper slope = more spacing
 - Higher vegetation = more spacing
 - Higher fire risk = more spacing
- Identify your two zones:
 - 0' - 30' – Zone 1
 - 30' - 100' – Zone 2

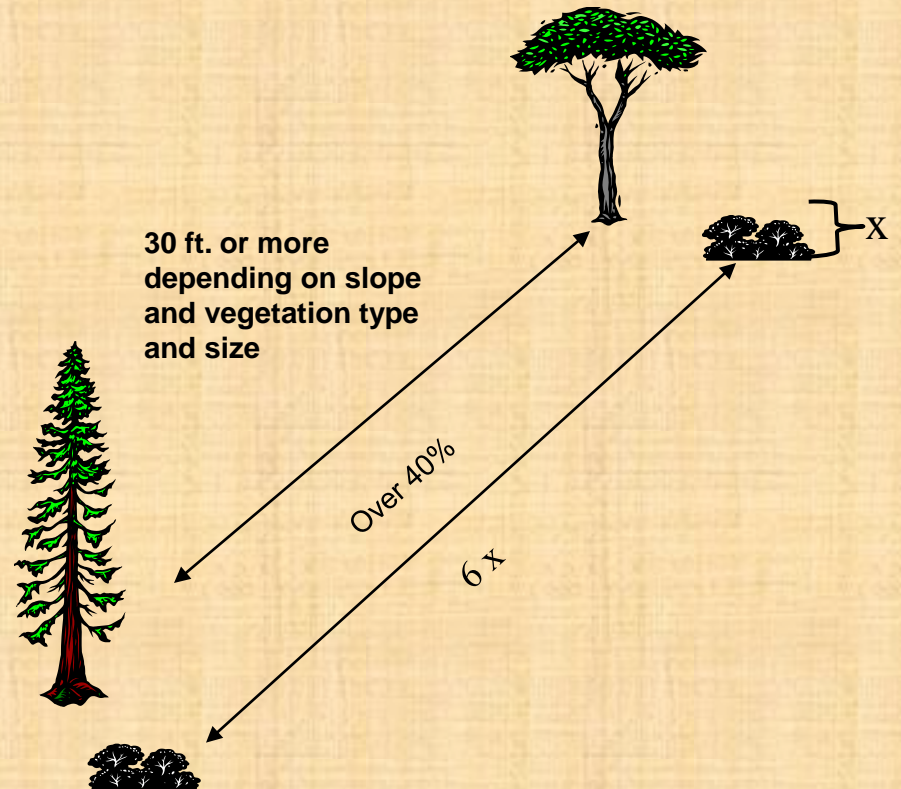
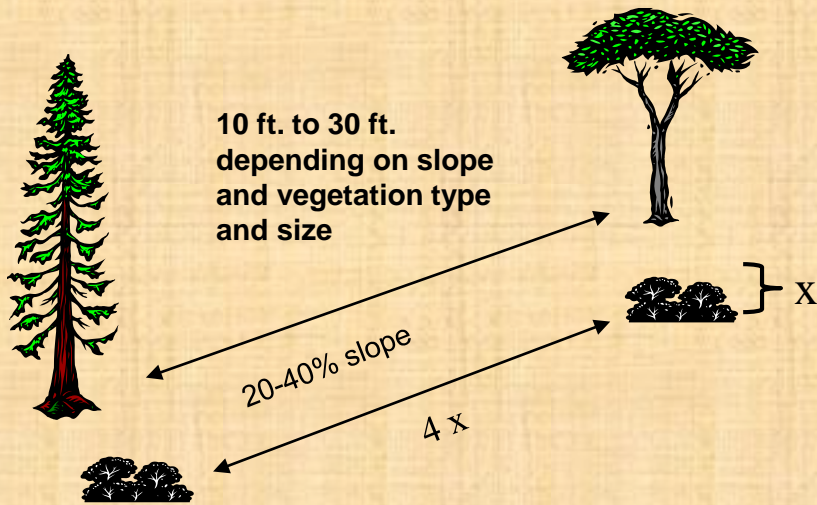
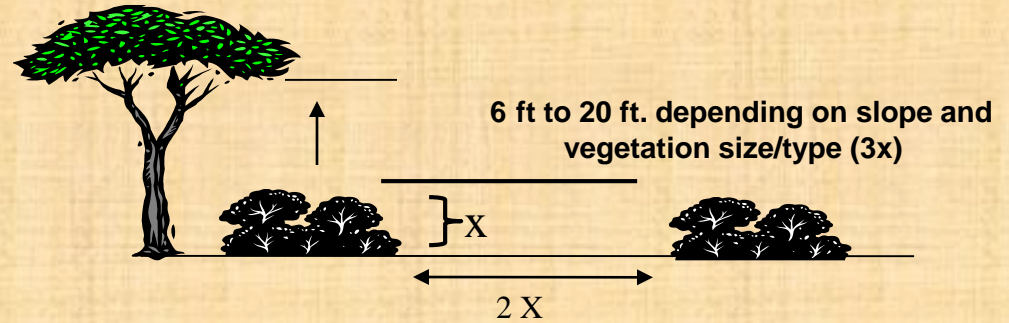




Untreated

Treated

Spacing



Minimum Vertical Clearance



Spacing Guides

Plant Spacing Guidelines

Guidelines are designed to break the continuity of fuels and be used as a "rule of thumb" for achieving compliance with Regulation 14 CCR 1299.

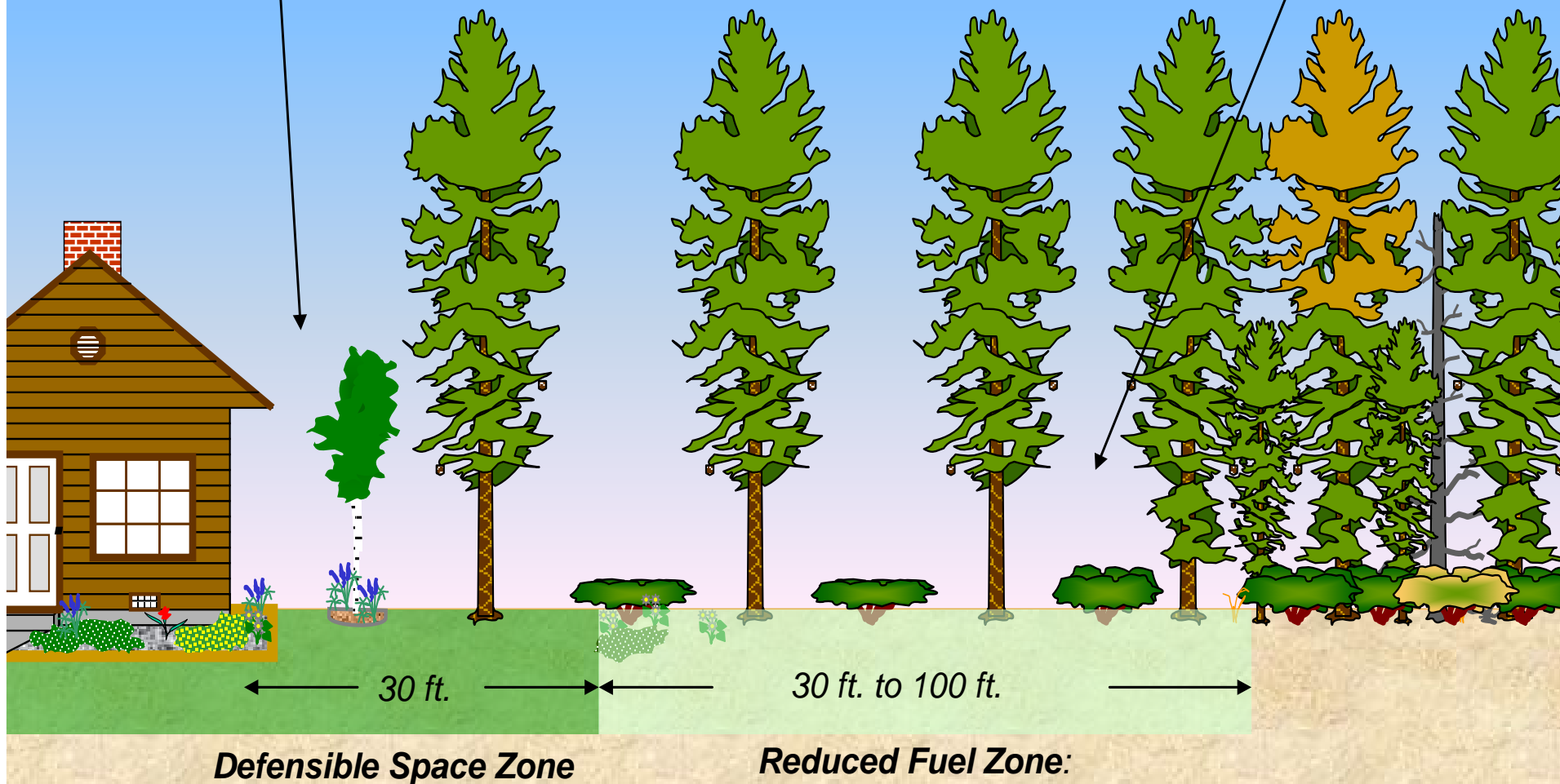
| Trees | Minimum horizontal space from edge of one tree canopy to the edge of the next | |
|----------------|---|---------------------------------|
| | Slope | Spacing |
| | 0% to 20 % | 10 feet |
| | 20% to 40% | 20 feet |
| | Greater than 40% | 30 feet |
| | | |
| Shrubs | Minimum horizontal space between edges of shrub | |
| | Slope | Spacing |
| | 0% to 20 % | 2 times the height of the shrub |
| | 20% to 40% | 4 times the height of the shrub |
| | Greater than 40% | 6 times the height of the shrub |
| | | |
| Vertical Space | Minimum vertical space between top of shrub and bottom of lower tree branches: 3 times the height of the shrub | |

NOTE: Fuel Separation distances are measured between the outer edge of the tree or shrubs canopy to the next tree or shrubs outer edge, NOT the trunk or main stem of a tree or shrub.

Adapted from: Gilmer, M. 1994. California Wildfire Landscaping

Defensible Space

Reduced Fuel Zone











A Previous Attendee's Efforts...Then



Now





Before



After



Before



After





What Would You Do?

What Do You Think?



Would this pass the test?

On-going Maintenance



Storm Damage







Everywhere You Turn, the Message Is There



It's Your Responsibility



100 Feet Defensible Space
(PRC 4291)



**Remove Flammable Brush &
Weeds from your Roadside**



Diamond Springs - El Dorado
Fire Protection District



www.edcfiresafe.org

Location Is a Factor



Top of a Steep Hill





Spacing





Mulches



Burning Characteristics Trials



◀ Figure 2. The eight different mulch treatments were replicated three times and randomly positioned within the plot layout on May 28, 2008. After being exposed to the elements for over 2½ months, they were ignited on Aug. 14, 2008.

Not All Mulches Are The Same

Mulches Used in Residential Landscapes



Shredded Western
Red Cedar



Composted Wood Chips



Shredded Rubber



Pine Needles



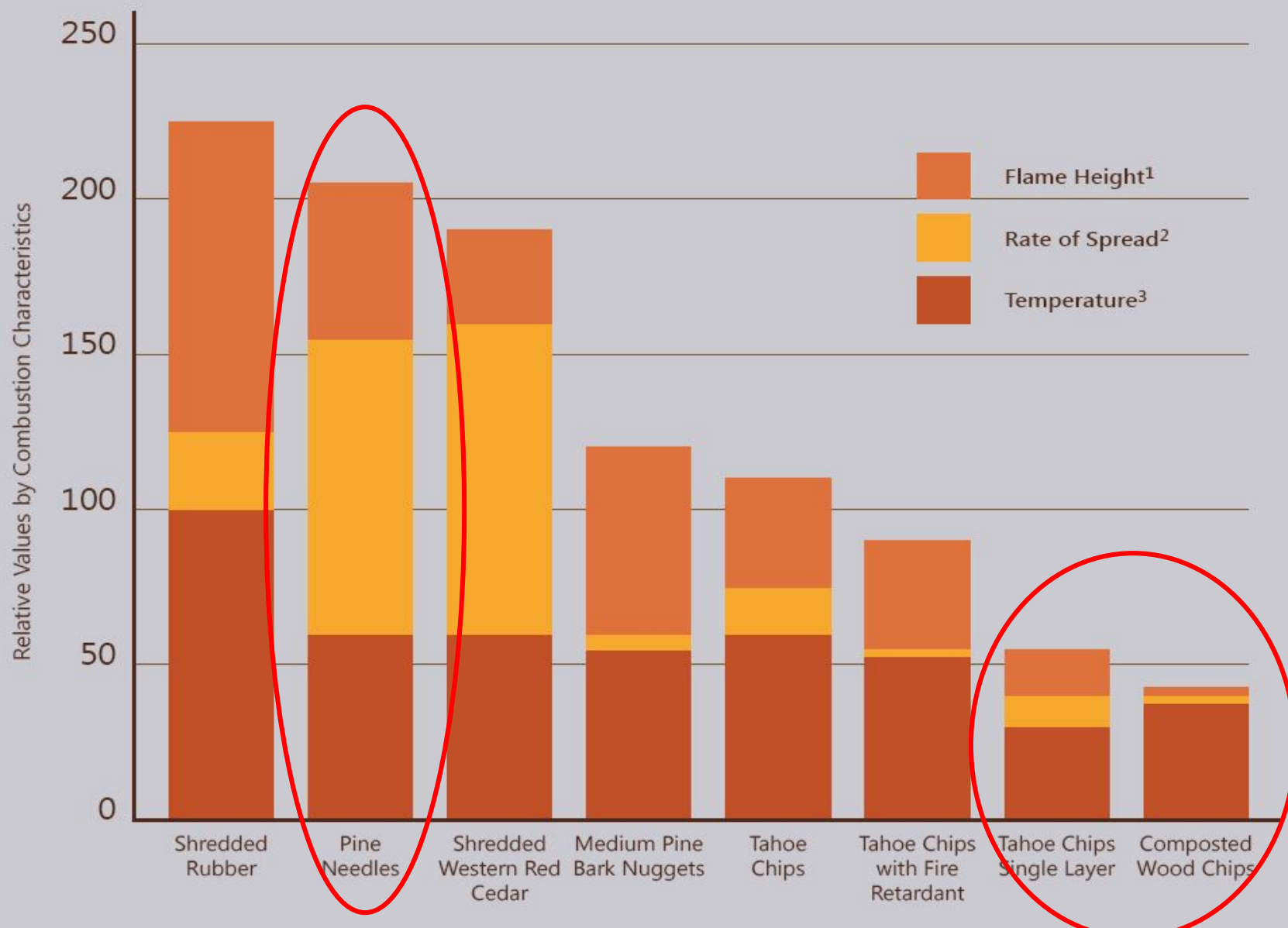
Medium Pine Bark
Nuggets



Tahoe Chips

(Normal wood chips)

Burning Characteristics of Mulch



The Fire Wise 3 Rs

The Sonoma County FSC suggests you think about your own property and what you need to:

REMOVE

REDUCE

REPLACE



EDC Fire Safe Council

A Step-by-Step Guide

- 1. Determine your DEFENSIBLE SPACE.**
- 2. Remove DEAD or DYING vegetation.**
- 3. Break up CONTINUOUS vegetation.**
- 4. Eliminate LADDER FUELS.**
- 5. Make your defensible space LEAN, GREEN and CLEAN.**
- 6. Keep up with regular MAINTENANCE.**

And You'll See We've Added More
Stay Tuned!

1. Define DEFENSIBLE SPACE

Lean, Clean and Green Zone

An area of 30 feet
immediately surrounding
your home

Reduced Fuel Zone

The fuel reduction zone in
the remaining 70 feet (or to
the property line)



100' DEFENSIBLE SPACE

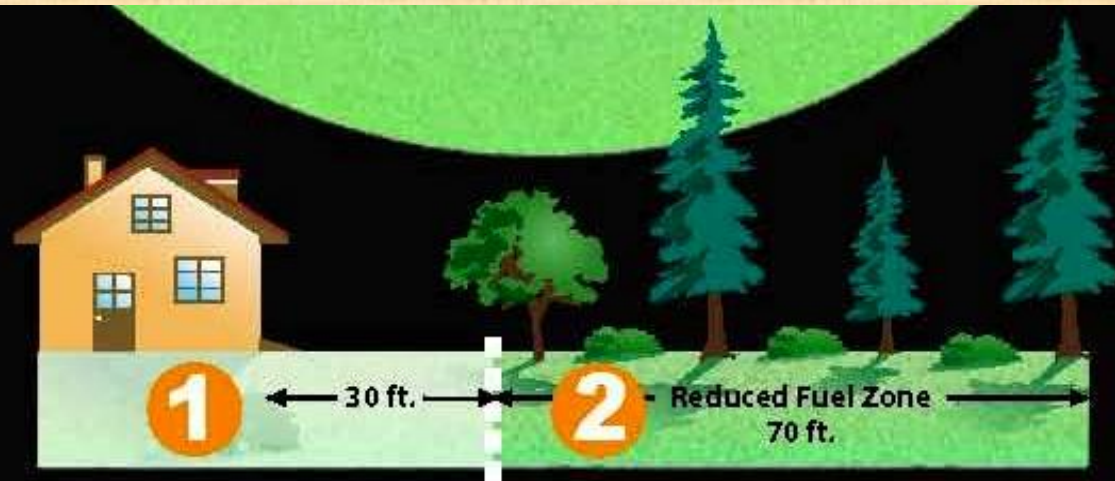
Make Your Home

FIRE SAFE



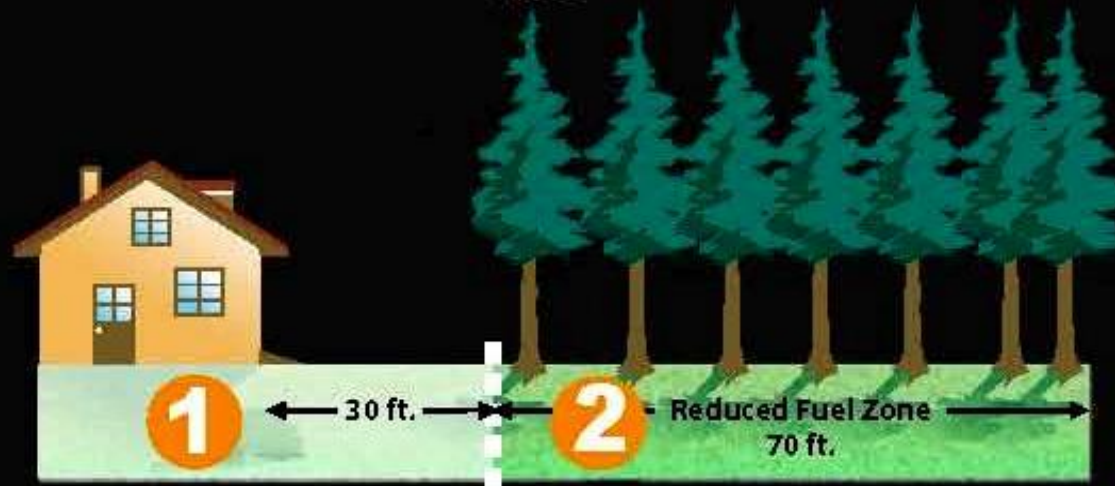


a



or

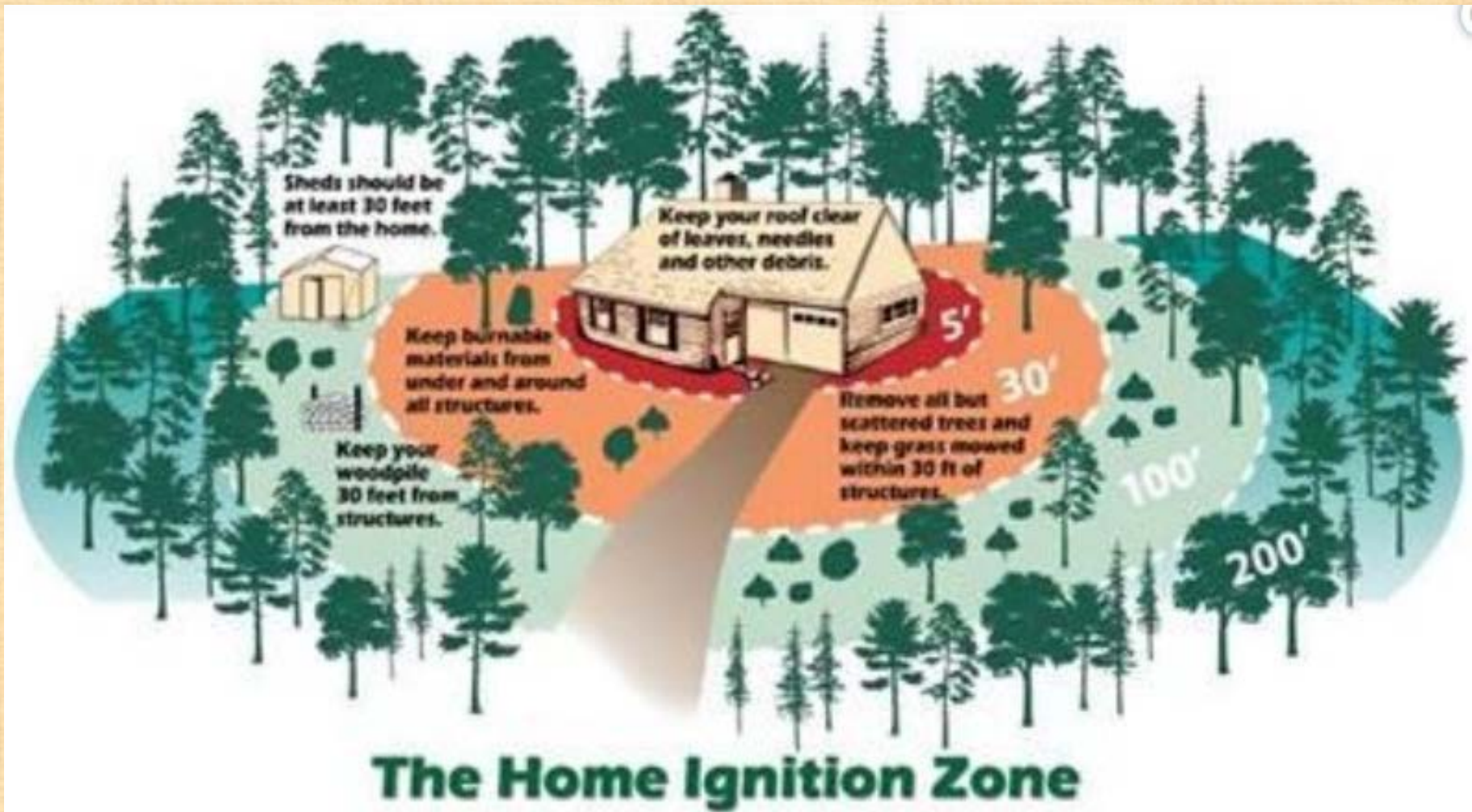
b



Contact your local CAL FIRE office, fire department,
or Fire Safe Council for tips and assistance.

www.fire.ca.gov

A New Look at DEFENSIBLE SPACE



A 5' Non-flammable Zone Is Good





LIVING WITH FIRE

IN MARIN COUNTY, CA

A GUIDE TO LIVING IN A FIRE PRONE COMMUNITY



BROUGHT TO YOU BY:



WILDFIRE IS COMING.

IS YOUR HOME READY?

3 SIMPLE STEPS

DEFENSIBLE SPACE

HARDEN YOUR HOME

IMPORTANT INFO

Roll over the numbers below to learn about the simple steps you can take to dramatically increase the chance of your home surviving a wildfire.



www.ReadyForWildfire.org

Creating Your Own Defensible Space

It's up to **YOU** to control the fuel.



Defensible Space Does Work!



2. Remove DEAD & DYING Growth

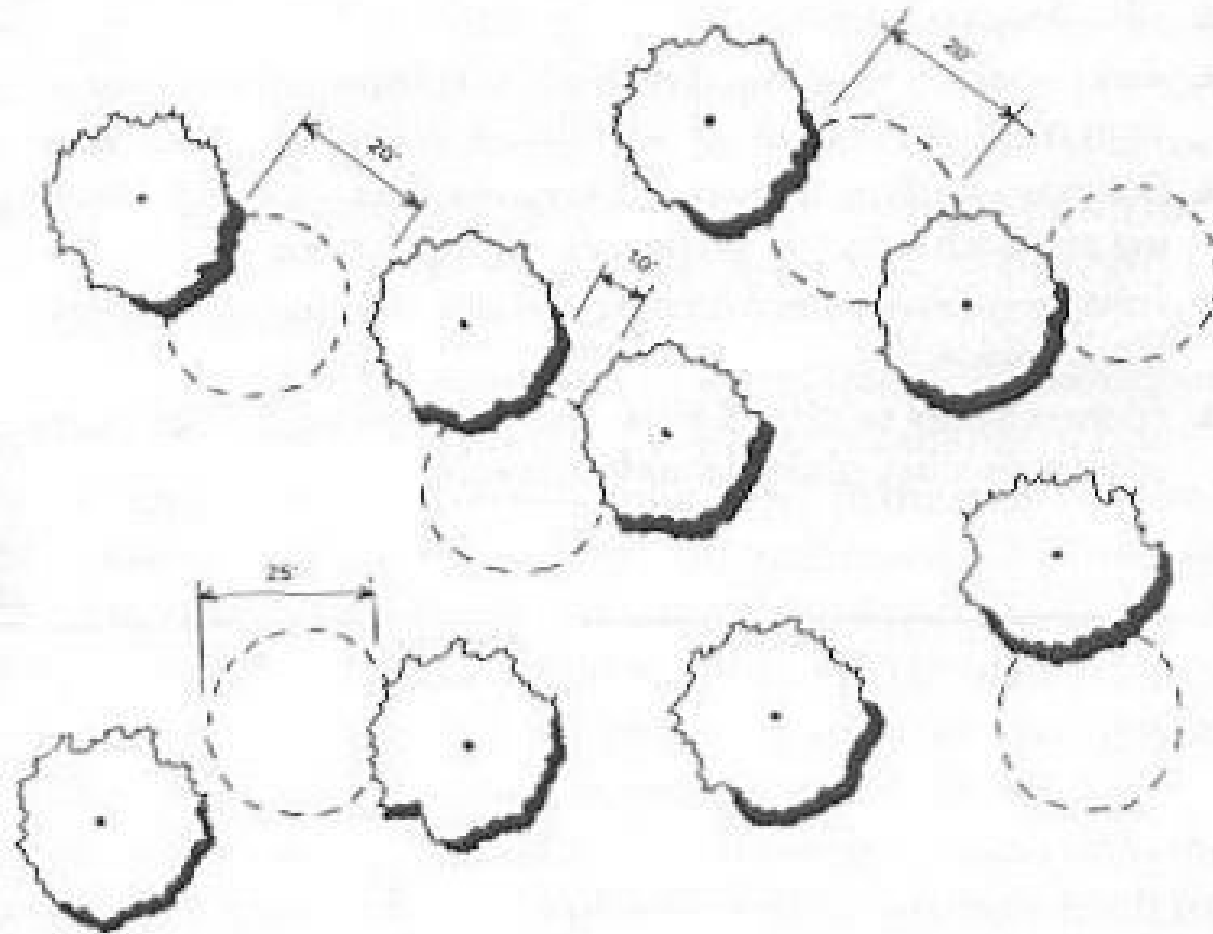


Ah – the job that never
ends...

3. Break up CONTINUOUS Vegetation by Creating Your Own Spacing



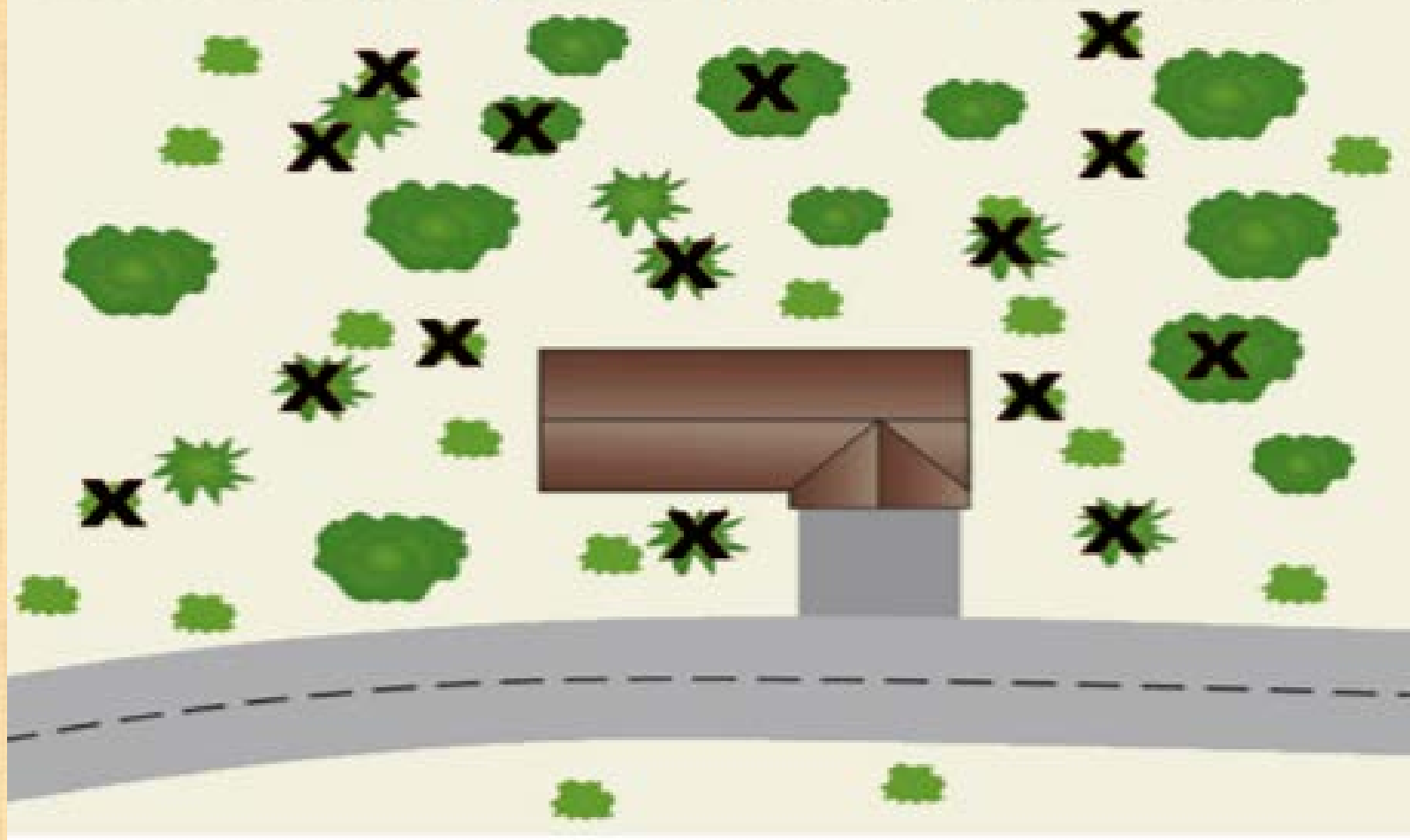
Mother Nature Doesn't Always Know Best!



Tree Removal Diagram

Another Perspective

Fire spreads on the ground from plant to plant and to your home. To reduce the chance of fire spreading to your home, increase the spacing between plants. (x = plant removed)



Some Basics of California Landscaping

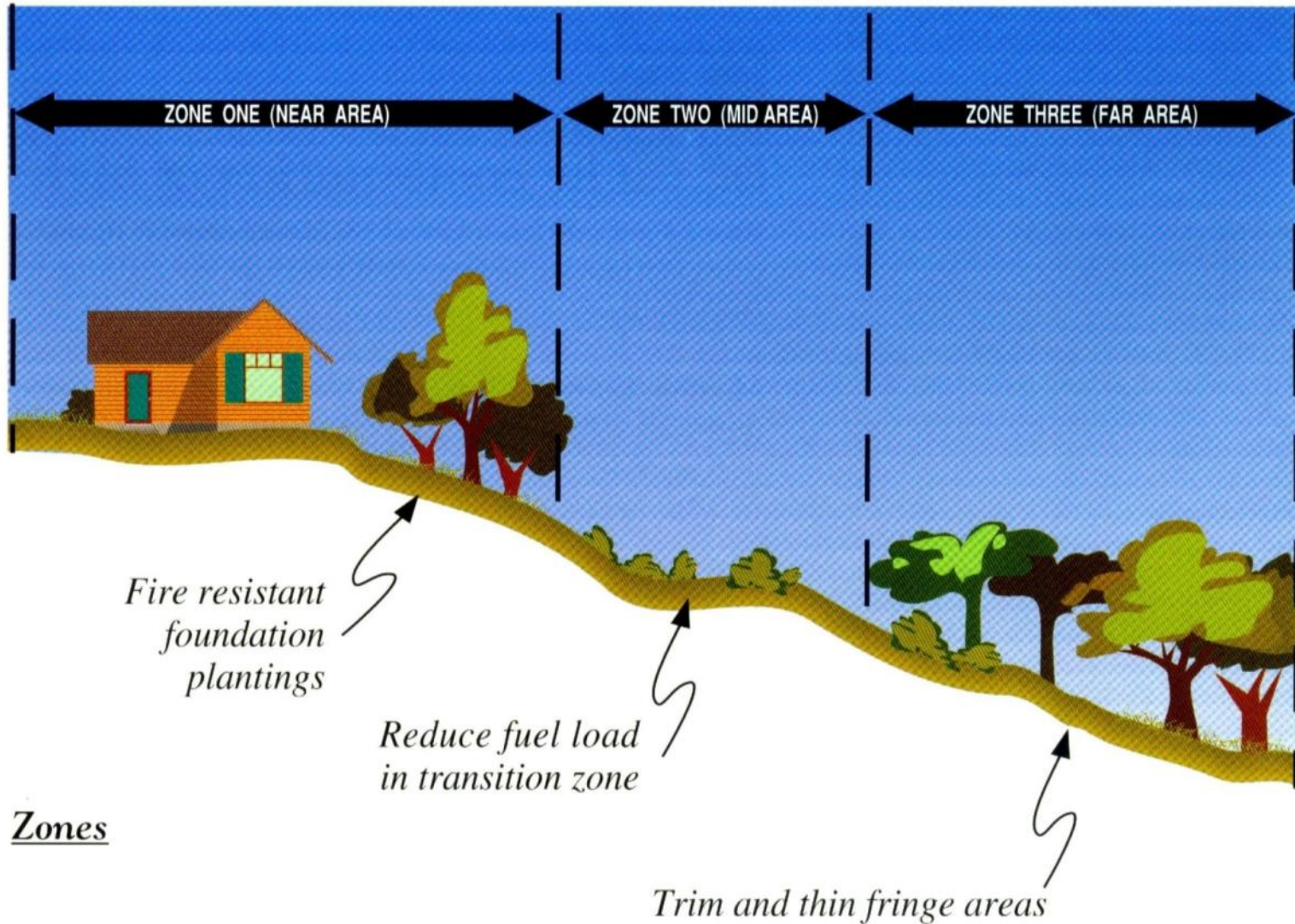
- Create maximum impact near house.
- Utilize hydro-zoning – grouping plants with similar irrigation and cultural needs.
- Mosaic planting can create fuel breaks.
- Pathways and other non-flammable hardscape build interest in your landscape.

The Hydro-zoning Concept

Plan/revitalize your landscape for fire safety and water conservation:

- Oasis High water zone
- Transitional Moderate water zone
- Fringe Low water zone

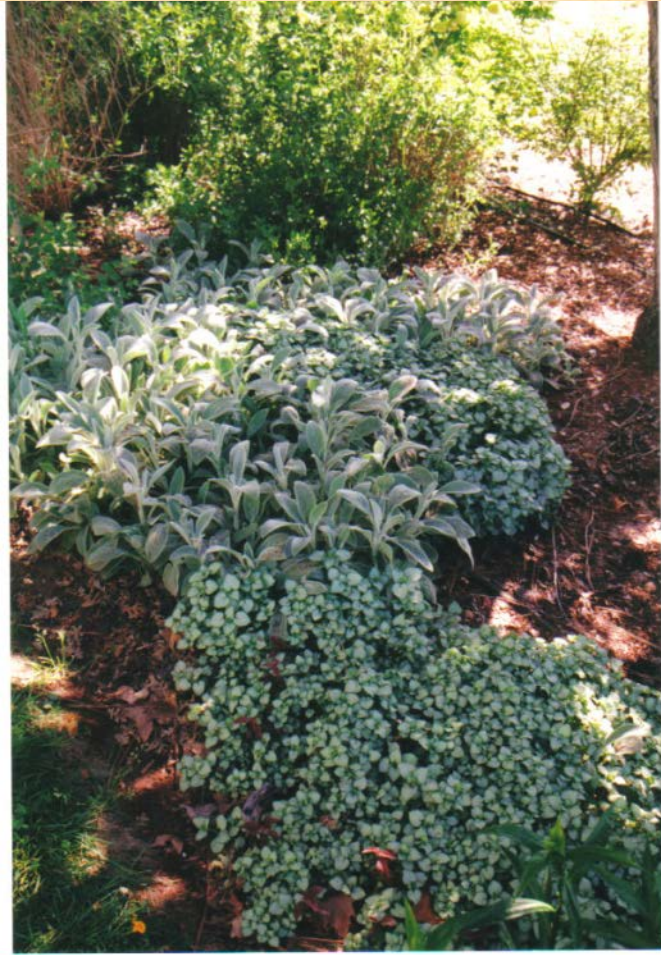
Understand These Zones



Oasis



Moderate Water Zone



Low Water Zone



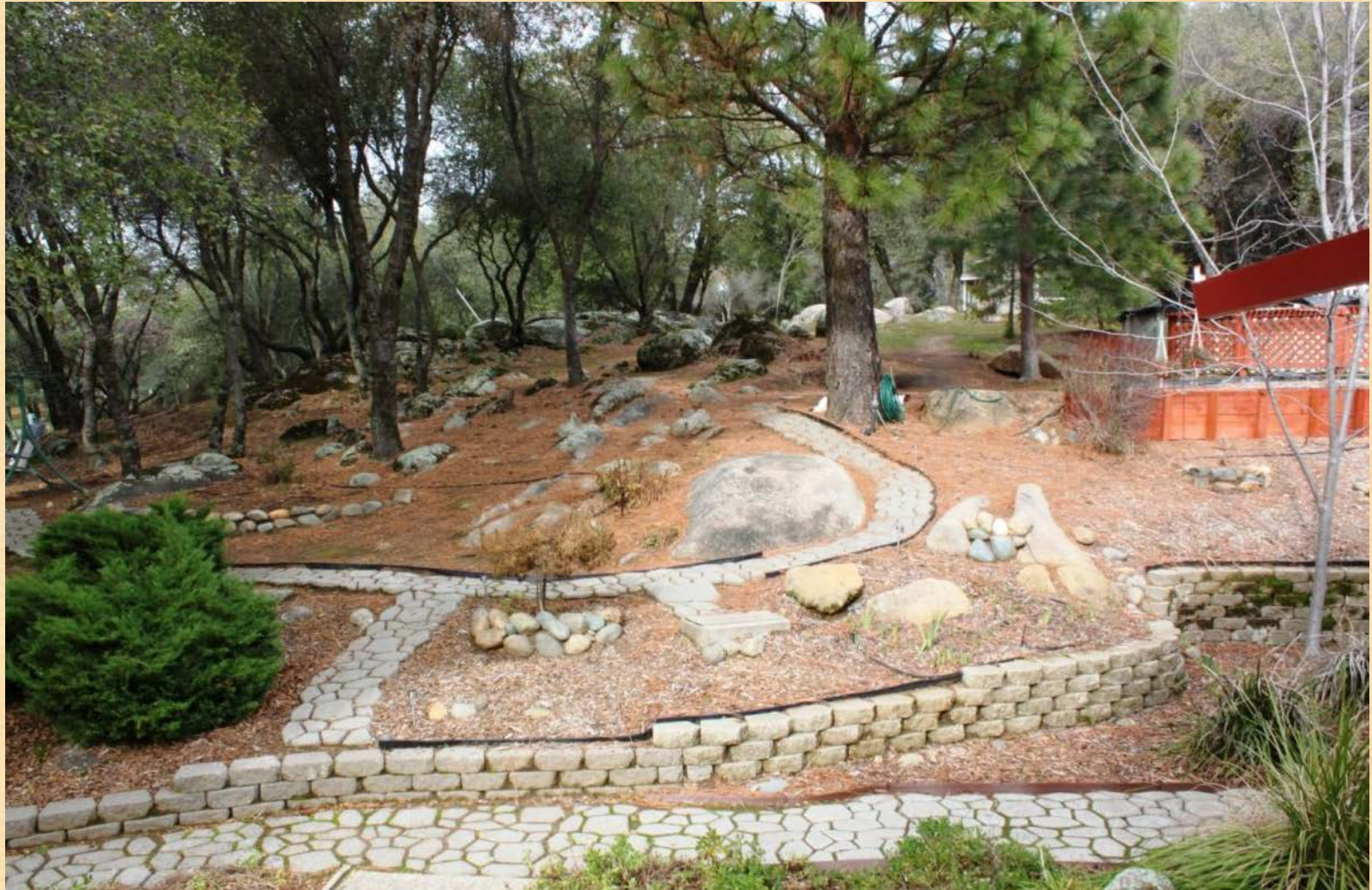
Mosaic Planting Can Be Valuable

- It also uses basic landscaping principles:
 - Group plants by water needs.
 - Group plants by cultural needs.
- Take it a step further for fire safety:
 - Space plants (vertically/horizontally).
 - Integrate non-combustibles into your mosaic.

A Colorful Mosaic



Incorporate Nature and Hardscape into Your Mosaic



Consider Options for Fuel Breaks



5 8'99

Not All Are Rock or Bare Dirt

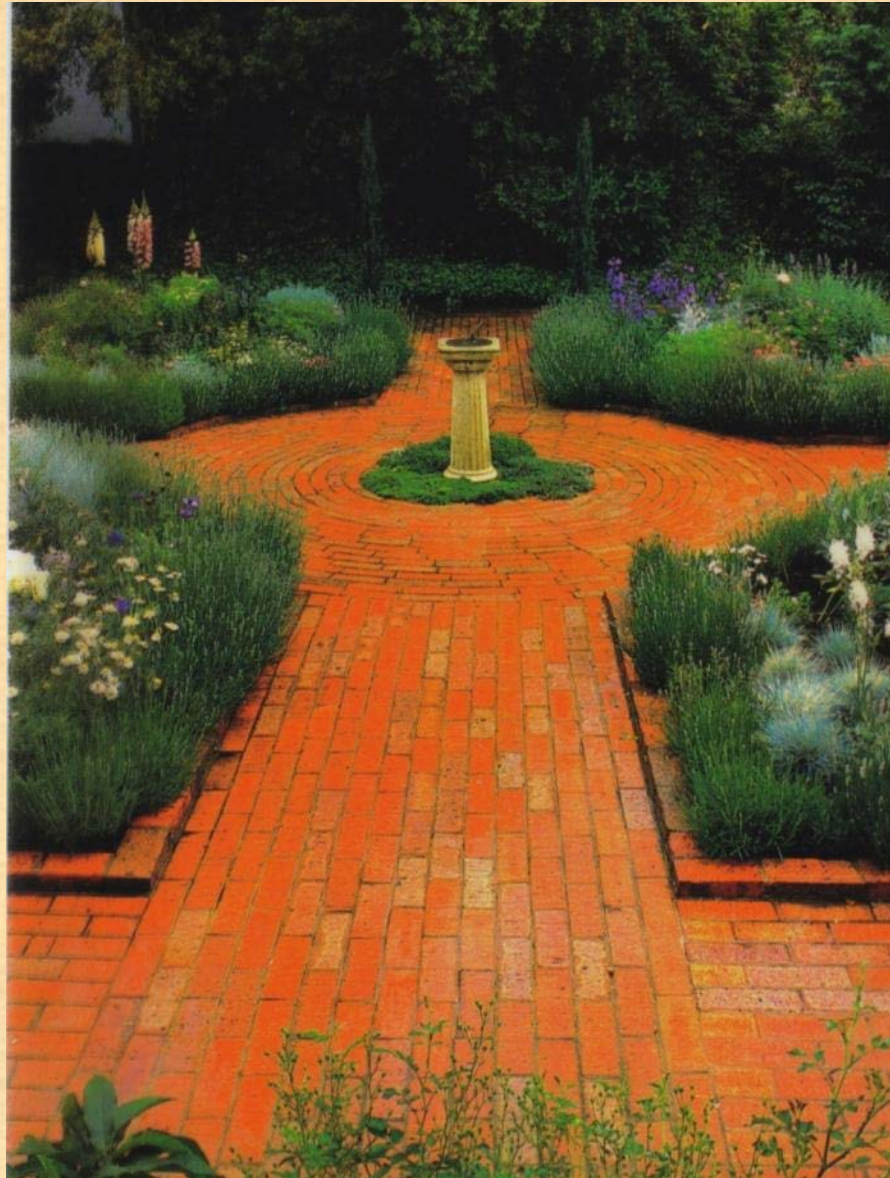


Fuel Breaks Come in All Shapes and Sizes





A Focal Point Can Be a Fuel Break



Fuel Breaks

Hardscape = Fuel Breaks = No Water Needed



What an Inviting Fuel Break



Maybe This Is Your Year for Adding More Hardscape



Some Spacing Isn't So Easy



Large Trees Can Be a Challenge





Be Careful When Clearing

Don't let the ladder get the better of you!





Our Poster Child for Safety

Experience doesn't make you an expert!



Speaking of Safety

Be sure you are working with caution!

Are **YOU** doing the right thing the wrong way?

Are you doing the right thing the wrong way - for example, trying to eliminate the fire hazards around your home and in the process starting a wildland fire? Each year CDF responds to nearly 1,500 fires started by Californians using equipment the wrong way.

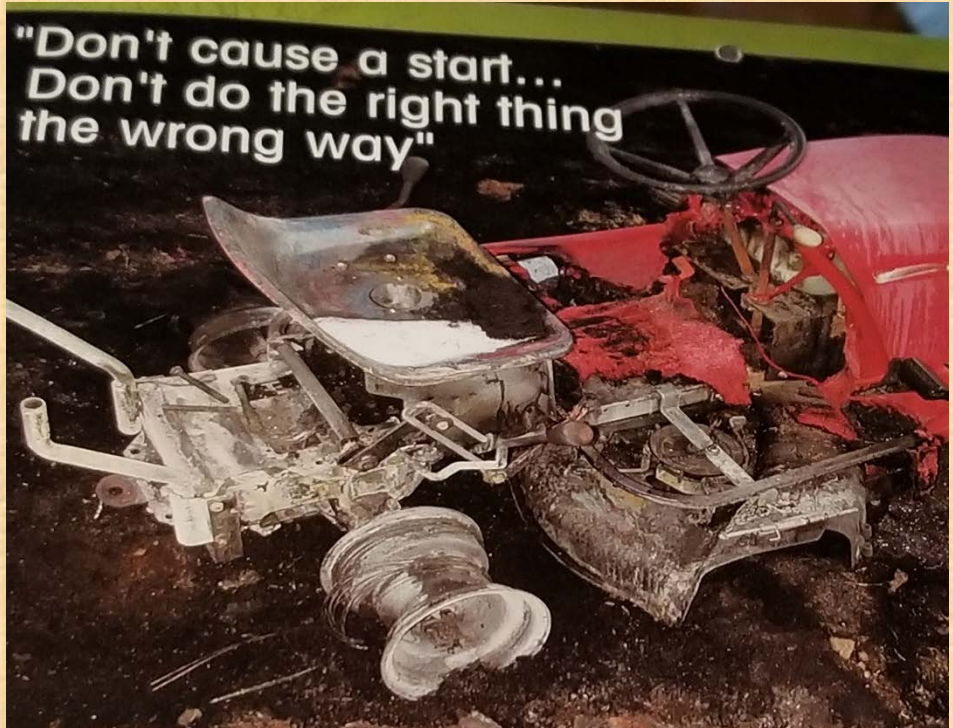
Whether working to create a defensible space around your home, just mowing the lawn, or pulling your dirt bike over to the side of the road, if you live in a wildland area you need to use all equipment responsibly. Lawnmowers, weed eaters, chainsaws, grinders, welders, tractors, and trimmers can all spark a wildland fire. Do your part, the right way, to keep your community fire safe.

Here's how to do it the **RIGHT WAY**:

- Do your clearance before 10:00 a.m. - **NOT IN THE HEAT OF THE DAY, OR WHEN THE WIND IS BLOWING!**
- Lawn mowers are designed to mow lawns. **NEVER** use lawn mowers in dry vegetation. Use a weed trimmer to cut down dry weeds and grass.
- Remove rocks in the area before you begin operating any equipment. A grass or weed hidden rock is enough to start a fire when struck by a metal blade.
- In wildland areas, spark arresters are required on all portable gasoline powered equipment. (Tractors, harvesters, chainsaws, weed eaters, and mowers).
- Keep the exhaust system, spark arresters and mower in proper working order and free of carbon buildup. Use the recommended grade of fuel and don't top off.
- Keep the engine free of oil and dust, and keep the mower free of flammable materials.
- In wildland areas, a permit may be required for grinding and welding operations. Be sure to have 10 feet of clearance, a 46" round point shovel, and a backpump water-type fire extinguisher ready to use.
- Hot exhaust pipes and mufflers can start fires you won't even see - until it's too late! Don't pull off into dry grass or brush.
- Keep a cell phone nearby and call 911 **IMMEDIATELY** in case of a fire.



www.fire.ca.gov
July 2002





Know When to Get Help

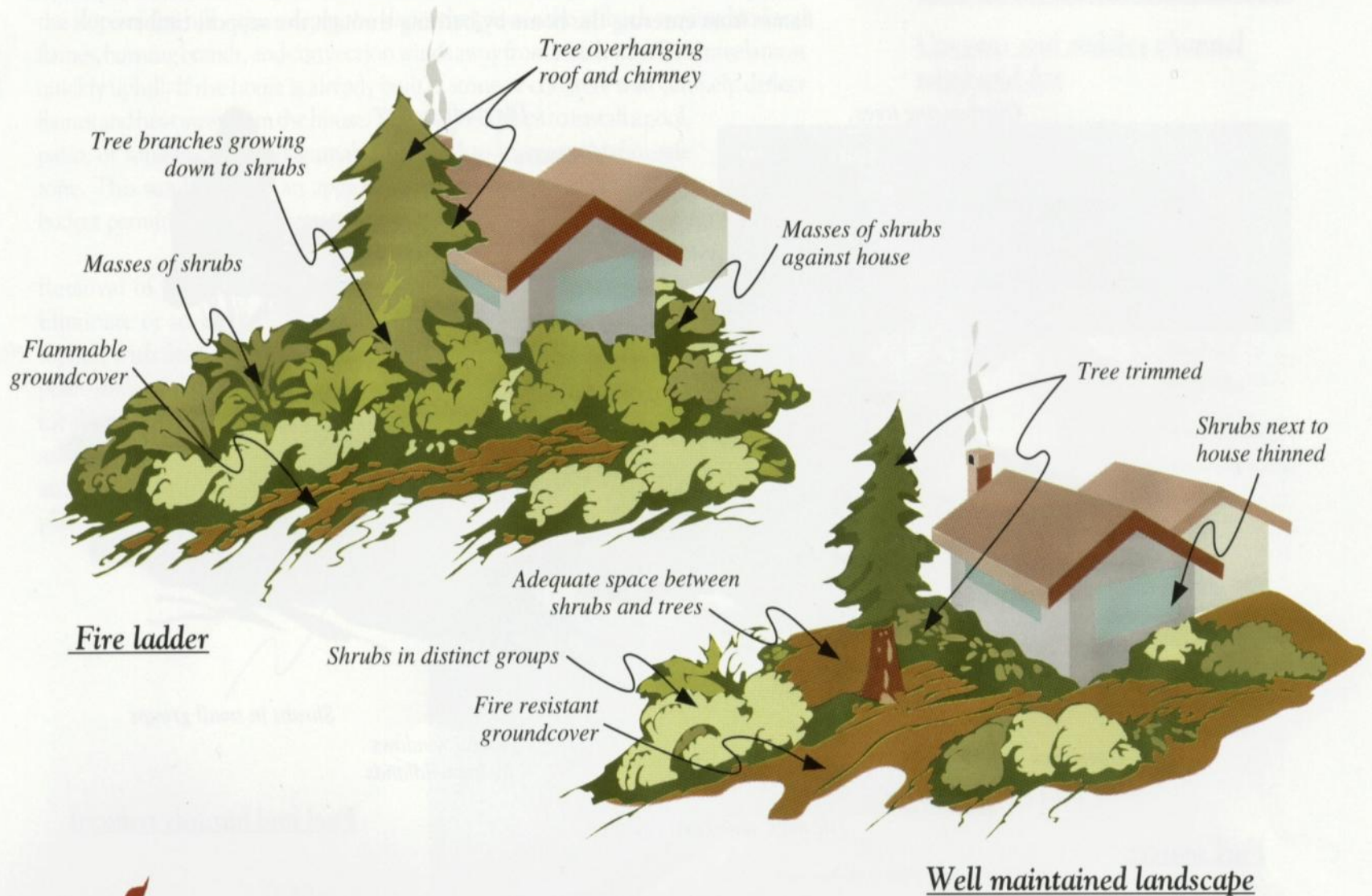
- What job is too big (or too dangerous)?
- How do you get what you pay for?
- Arborists vs. tree care specialists – What's the difference? See the MG website:
 - Arborist – certified to meet educational and/or experience requirements
 - Tree care specialist – accredited to follow approved practices.



What to Ask

- Check for insurance.
- Get multiple estimates.
- Know what's included.
- Check references.
- Verify who will actually be on site.
- Ask about experience.
- Inquire whether you need permits.

4. Eliminate LADDER FUELS



Ladder Fuels

- Remember that you need at least 6 feet of clearance under trees.
- If you have plants under trees, you'll need to increase the clearance height.

Clearing Can Be Horizontal or Vertical or Both

REMEMBER WHAT MARK HAD TO SAY...
and check your handout.



Removing the Rest of Your Refuse

**When burn days end for this season,
there may be another option:**

**Contact the El Dorado County
Fire Safe Council at 647-1700 to
arrange for chipping of your
cleared material, as long as funding
is available. Keeping track of your
time will help EDCFSC.**

Chipping and Green Waste

El Dorado Fire Safe Council

- Chipping program at your residence
- Green Waste dumpsters for your community
- Some assistance possible for low-income seniors

5. Make it LEAN, GREEN & CLEAN

Once your defensible space is created:

- You may find you have more options for landscape plants.
- It's all about plant selection and spacing.
- Less is better when it comes to plants.

The Good Guys

CHOOSE PLANTS THAT

- Qualify as fire safe
- Are drought tolerant
- Are low-maintenance
- Have lots of color
- Encourage wildlife



Know What Plants to Avoid

Avoid plants with

- Resinous leaves
- Lots of dried and dead undergrowth
- Gummy, resinous sap and/or strong odor
- Loose or papery bark

Fire Prone Plants



Juniper - AKA

The Little Green Gas Can



Our Reality Can Change!

We have lived in some major droughts; we are also living in a new era of fires.

Today, we realize that fire season can be all year long.



**Old School:
get rid of natives,
use lawns as firebreaks**



**Drought resistant + fire resistant +
native plants:
not mutually exclusive!**



Western redbud

Critical First 5 Feet: hardscape



Next 30 Feet:

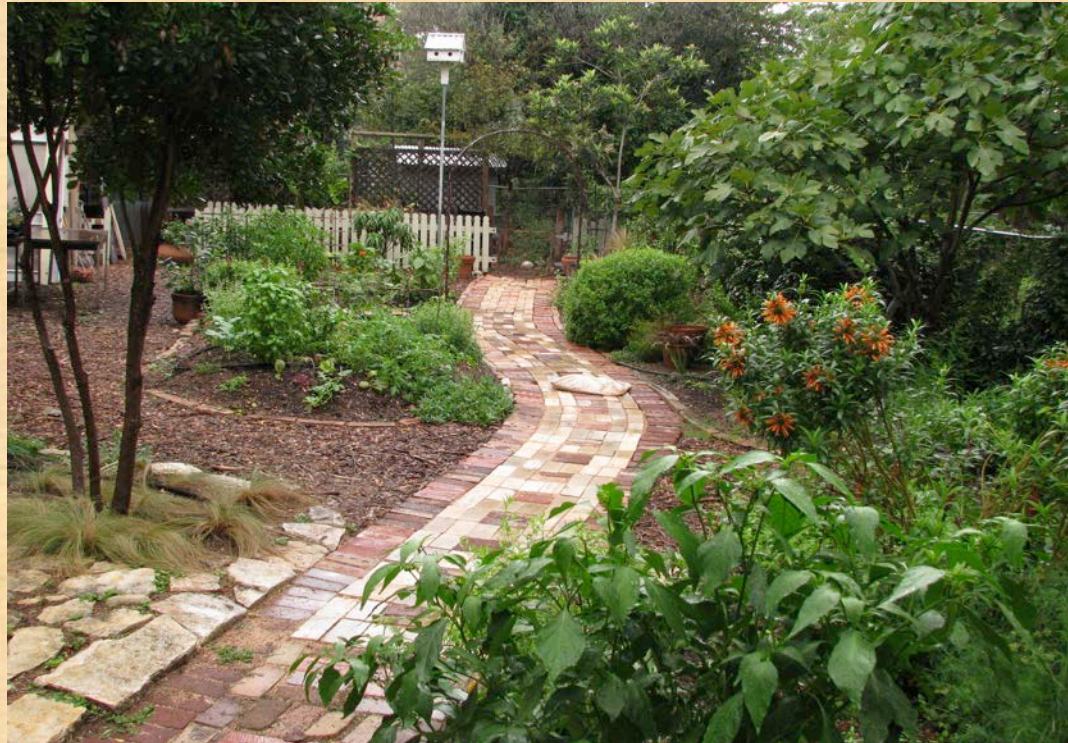
**hardscape * low-growing *
well-spaced * fire resistant**



**Next 30' Defensible Space:
good place for edibles too!**



**Next 30' Defensible Space:
don't forget tree edibles**



30-100' Reduced Fuel Zone

well-spaced * hardscape *
fire resistant

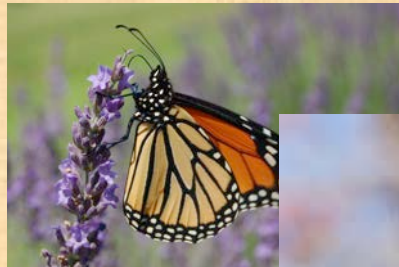


An Achievable Goal:

Fire safe landscape

+

sustainable landscape



That can mean:

Removal



That can mean:

Removal/Moving



That can mean:

Removal and/or Planting



**Some plants really are
more fire prone
than others**



**Some plants really are
more fire prone
than others**



**Some plants really are
more fire prone
than others**



Inside: 5 Italian Cypress





The Moral: Plants in the garden do matter

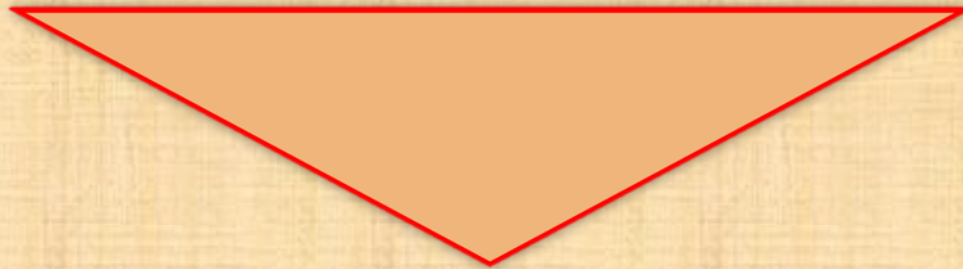




Triangle of Fire Resilience

Defensible Space-
what plants and where?

Defensible Space-
are they maintained?

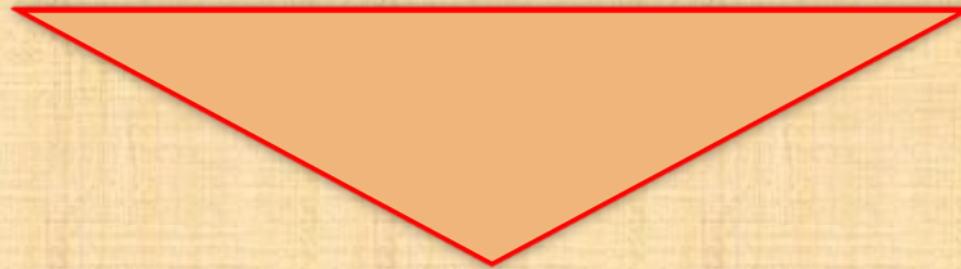




Triangle of Fire Resiliency

Defensible Space-
what plants are where?

Defensible Space-
are they maintained?



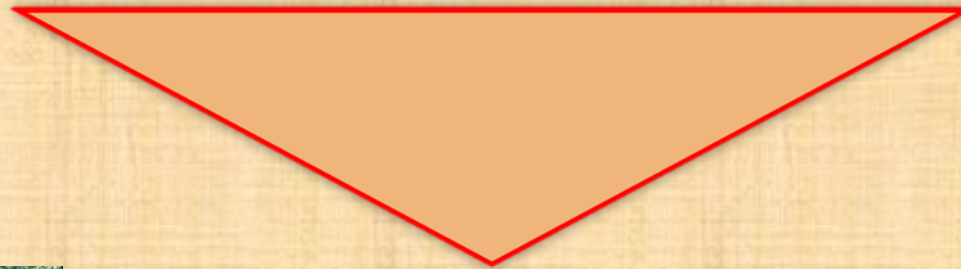
Has the **home** been
hardened for fire?



Triangle of Fire Resiliency

Defensible Space-
what plants are where?

Defensible Space-
are they maintained?



Has the **home** been
hardened for fire?

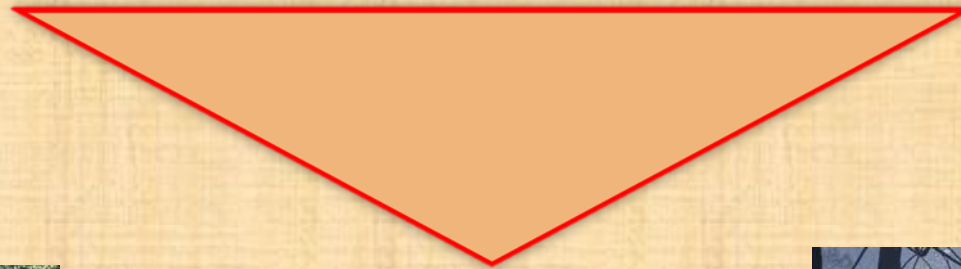




Triangle of Fire Resiliency

Defensible Space-
what plants are where?

Defensible Space-
are they maintained?



Has the **home** been
hardened for fire?



More plants to avoid



Pennisetum-

Fountain grass



More plants to avoid

Bamboo



Pampas
Grass

Toyon



**But remember: “How” more
important than “What”!**



Manzanita- fire
hazard, right?



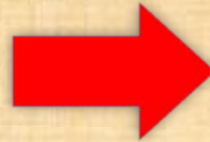
Not always...



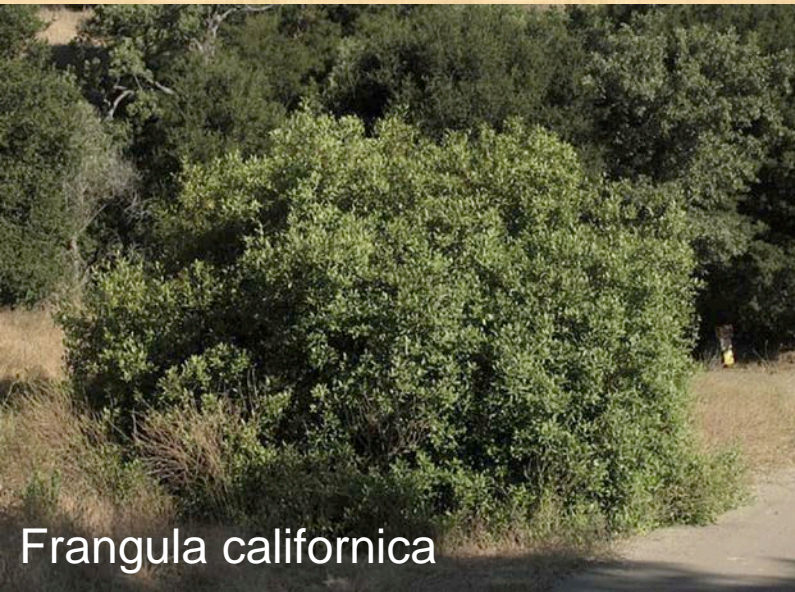
Invasives

Removing
Shrubs, trees

Careful!



Flammable
Weeds



Frangula californica



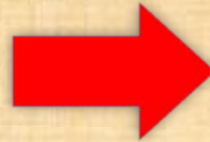
Star thistle



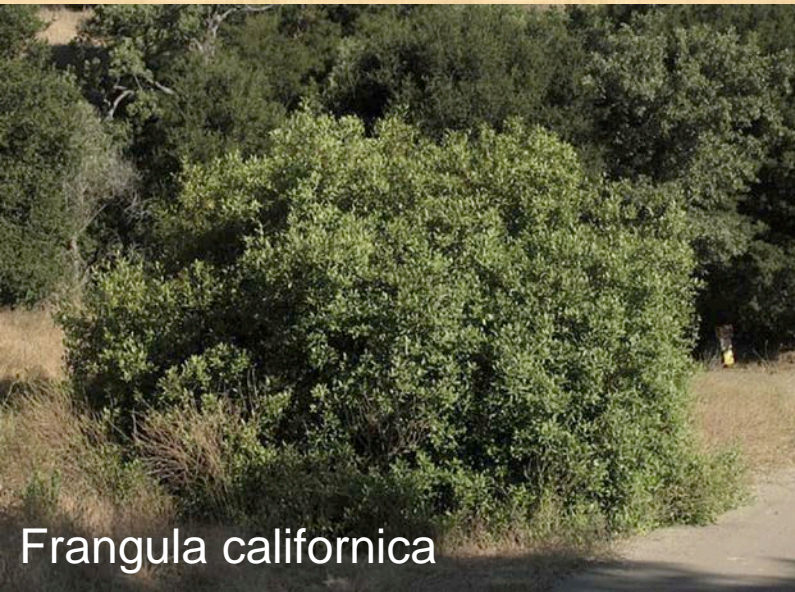
Invasives

Removing
Shrubs, trees

Careful!



Flammable
Weeds



Frangula californica



Stinkwort



Finding Fire-resistant Plants

- Many lists, with contradictions
- Remember: fire resistant, not fire proof!
- Irrigation and maintenance are key factors.
- Know your elevation, zone and microclimates.



Finding Fire-resistant Plants

- High moisture
- Small to medium leaves
- Low growing habits
- Low fuel volume
- Low resin/oil content

Great Resources

Ray Griffith Plant List- El Dorado County

Former horticultural professor, FLC



https://www.eldoradocnps.org/images/gardening/Ray_Griffith_EDC_Native_Plant_List.pdf

El Dorado County Native Plant List for Gardening

Created by Ray Griffiths, former Horticulture Professor, FLC

Native Plant Vegetation Key

Zone

vz = valley zone below 1500'

fz = foothill zone below 3000'

mz = mountain zone above 3000'

Note: If characteristics are unknown, may be arbitrarily assigned a "5".

Fire: 1 = fire resistant 10 = very flammable

Drought: 1 = drought tolerant 10 = needs moisture

Deer: 1 = deer resistant 10 = browsed hard

Shade: 1 = shade tolerant 10 = full sun

Wildlife: 1 = high value 10 = low value

NATIVE TREES

| Scientific Name | Common Name | Zone | Fire | Drought | Deer | Shade | Wildlife | Comments |
|-----------------------------|------------------|--------|-------|---------|------|-------|----------|--------------------------------------|
| <i>Abies concolor</i> | White Fir | mz | 10 | 3 | 3 | 2 | 3 | Shade tolerant, fire suppression. |
| <i>Acer macrophyllum</i> | Big-leaf Maple | mz, fz | 1 | 7 | 8 | 3 | 2 | Needs moisture, fire kills, roots re |
| <i>Aesculus californica</i> | Calif. Buckeye | fz | 4 | 3 | 4 | 7 | 4 | Toxic but deer eat, slopes, fire k |
| <i>Alnus rhombifolia</i> | White Alder | vz, fz | 1 | 10 | 7 | 9 | 4 | Imp to birds, fixing, deep |
| <i>Arbutus menziesii</i> | Pacific Madrone | mz, fz | 2 | 3 | 6 | 3 | 2 | Fruit for birds, leaves and b |
| <i>Calocedrus decurrens</i> | Incense Cedar | fz, mz | 1, 10 | 3 | 2 | 2 | 3 | Shade tolerant, insects & hol |
| <i>Cornus nuttallii</i> | Mountain Dogwood | mz | 2 | 8 | 4 | 2 | 3 | Shade tolerant, often riparia |
| <i>Pinus lambertiana</i> | Sierra Pine | mz | 2 | 3 | 3 | 4 | 4 | Huge, beautiful, fire |



Great Resources

Fire Safe Councils



Auburn Lake Trails
Georgetown
Volcanoville
Coloma/Lotus
Gold Hill
Mosquito
Cameron Park
Royal Equestrian
Estates
Lake Hills Estates, EDH
Rancho del Sol
Pollock Pines/Camino
Sierra Springs
Gold Ridge

Placerville
Texas Hill
Oak Hill Area
Pleasant Valley
Mt. Aukum
Grizzly Flat
Outingdale
Omo Ranch
Patterson Ranch, Diamond Springs
Diamond Springs
Logtown, El Dorado

www.EDCfiresafe.org

What to Keep

Which plants to keep in the 5-100 ft zone?



What to Keep

Which plants to keep in the 5-100 ft zone?



What to Keep

Which plants to keep in the 5-100 ft zone?







www.OakHillFireSafe.org



Evaluating plants in the 5-100 ft zone

- Remove.
Common, highly flammable
- Keep.
Low flammability, high wildlife value
- Keep but maintain well.
Uncommon, Low-moderate flammability, high wildlife value
- Move or remove.
High flammability, high wildlife value

Marin Fire Safe Council



<https://www.firesafemarin.org/plants/fire-prone>

<https://www.firesafemarin.org/plants/fire-resistant>

- Marin County based
- Mixed native and non-native

Marin Fire Safe Council



<https://www.firesafemarin.org/plants/fire-prone>

<https://www.firesafemarin.org/plants/fire-resistant>



ASH

Fraxinus spp.

Fraxinus (ash) species recommended for Marin:

Fraxinus dipetala, CALIFORNIA ASH

Show Details



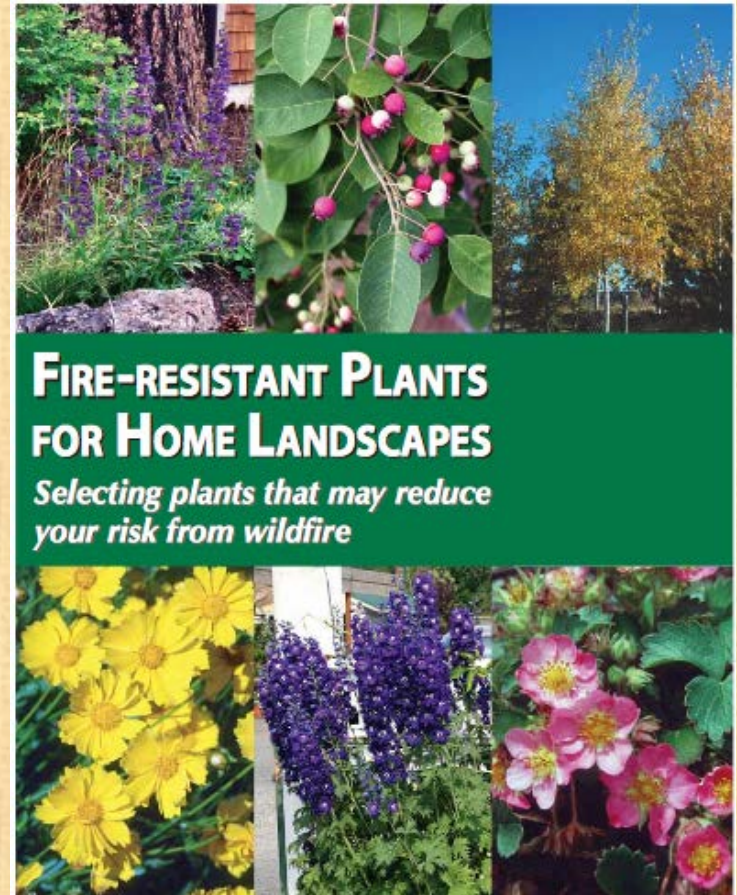
Recommendation: Prefer

Fire Resistance: Very Good

Native: Yes

2. http://www.firefree.org/images/uploads/FIR_FireResPlants_07.pdf


- IDs sun/shade, wildlife, water use
- Oregon based
- Mixed native and non-native



3. <http://www.diablofiresafe.org/tolerance.html>

“Plants with a Favorable fire resistance rating”

Diablo Fire safe council

| Scientific Name | Common Name | Plant Type | Plant Form | References at bottom |
|---|-------------------------|------------|-------------|--|
| <i>Achillea millefolium white</i> | White yarrow | perennial | shrub | 25, 40,41, 53 |
| <i>Achillea tomentosa var. Moonshine</i> | Woolly yarrow | perennial | groundcover | 7,11,12,13,23,25,26,28, 32,35,36,37,39 |
| <i>Aeonium decorum</i> | Aeonium | succulent | shrub | 7,10,38,53 |
| <i>Aeonium simsii</i> | Aeonium | succulent | shrub | 7,10,53 |
| <i>Aesculus californica</i> | California buckeye | deciduous | tree | 11,15,17 |
| <i>Agapanthus 'Peter Pan'</i> | Lily of the Nile, dwarf | evergreen | shrub | 9,10,25 |
| <i>Agave americana 'Alba Picata'</i> | Century plant | succulent | shrub | 9,25,37 |
| <i>Agave victoriae-reginae</i> | Agave | succulent | shrub | 7,10,53 |
| <i>Ajuga reptans</i> | Carpet bugle | perennial | groundcover | 7,9,10,11,17,23,28,35, 36,40,41,53 |
| <i>Alnus rhombifolia</i> | White alder | deciduous | tree | 9,11,17,25,53 |
| <i>Aloe arborescens</i> | Torch aloe | succulent | shrub | 9,25,53 |
| <i>Aloe aristata</i> | Aloe, Dwarf aloe | succulent | shrub | 7,10,40,41,53 |
| <i>Aloe brevifolia</i> | Aloe | succulent | shrub | 7,10,40,41,53 |
| <i>Arbutus menziesii</i> | Madrone | evergreen | tree | 11,15,17 |
| <i>Arbutus unedo</i> | Strawberry tree | evergreen | tree | 8,9,11,12,17,25,30,40,41,42,53 |
| <i>Arctotheca calendula</i>  | Silver spreader | evergreen | groundcover | 7,8,9,10,11,12,18,20,21,23,24,25,26, 28,30,31,34,35,36,37,38,40,41,42,53 |
| <i>Armeria maritima</i> | Thrift, Common thrift | evergreen | groundcover | 9,10,11,12,15,25,40,41 |
| <i>Artemisia caucasica</i> | Silver spreader | evergreen | shrub | 9,10,12,23,28,30,35,36,37,38,42,53 |
| <i>Artemisia pycnocephala</i> | Sandhill sage | evergreen | shrub | 6,11,16,25 |
| <i>Asarum caudatum</i> | Wild ginger | perennial | shrub | 11,15,40,41 |

3. <http://www.diablofiresafe.org/tolerance.html>

“Plants with a Favorable fire resistance rating”

Diablo Fire safe council

| Ref # | Author | Title | Year | Publisher | Reference Summary |
|-------|-----------------------------------|--|-----------|---|--|
| 1 | California Department of Forestry | Fire Safe: Inside and Out | Date Unk. | California Department of Forestry Publication | Defines fire retardant plants as those easily maintained and pruned, drought tolerant in some cases, can be grown without accumulating dead branches, needles or leaves, have a low sap or resin content, and grow close to the ground. |
| 2 | Gaidula, Peter | Wildland Fuel Management Guidelines for the CA State Park System | 1976 | California Department of Parks and Recreation | This reference does not offer a definition of fire retardance with respect to plants, however it offers suggestions of certain plant characteristics to keep in mind when clearing brush to reduce fire hazard: plant vigor, poisonous plants, effects of plants on soils, value for wildlife food and cover, aesthetic values, and relative flammability. |
| 3 | Tarbes, J.A. | Physical Characteristics of Chamise in Relation to Flammability and Combustibility | 1980 | San Francisco State University, CA | Defines fire performance characteristics of chamise species only. |
| 4 | Sunset | Big Job #1: Landscape to Fight the Fire | 1992 | Lane Magazine and Book Company, June | Defines highly flammable plants as those that are accumulators of fuel, not maintained or pruned periodically, and contain high oil, high resin or low moisture in leaves and branches. |
| 5 | Sunset | Brush Clearing for Fire Safety | 1968 | Lane Magazine and Book Company, October | Describes fire retardant plants as those that are low-growing shrubs, non-native brush, and well maintained and watered brush. |

List of References for Plant Fire Performance Ratings:



Good Used Together

Marin, Diablo, Oak Hill area plant lists

•



Good Used Together

Marin, Diablo, Oak Hill area plant lists

+

http://ucanr.edu/sites/WUCOLS/Plant_Search/

“Water Use Classification of Landscape Species”

Plant list by water use, native, grows in our area-Placerville

=

Waterwise, Fire wise landscaping

<http://www.redbud-cnps.org/pdf/fire-resistant.pdf>

Redbud chapter, CNPS
Western Nevada and
Placer Counties

Excellent resource applicable
to our area as well.



Know your Zone



Are you 7 or 9 in Sunset?



USDA is based on winter cold;
look for 7a, 7b, 8a, 8b, 9a, 9b

Color, Low Water and Fire Resistance = Some Keepers



Penstemon
heterophyllus



Common thrift



Coreopsis

**More keepers= Natives- fire resistant,
drought tolerant, and also wildlife
friendly**



Calif. fuschia



Sticky
monkeyflower

Native Perennials



Sonoma



Cleveland

Sages- salvia

Perennials



Woolly sunflower



Gaillardia

Native Riparian Plants- 30' defensible zone



Western Columbine

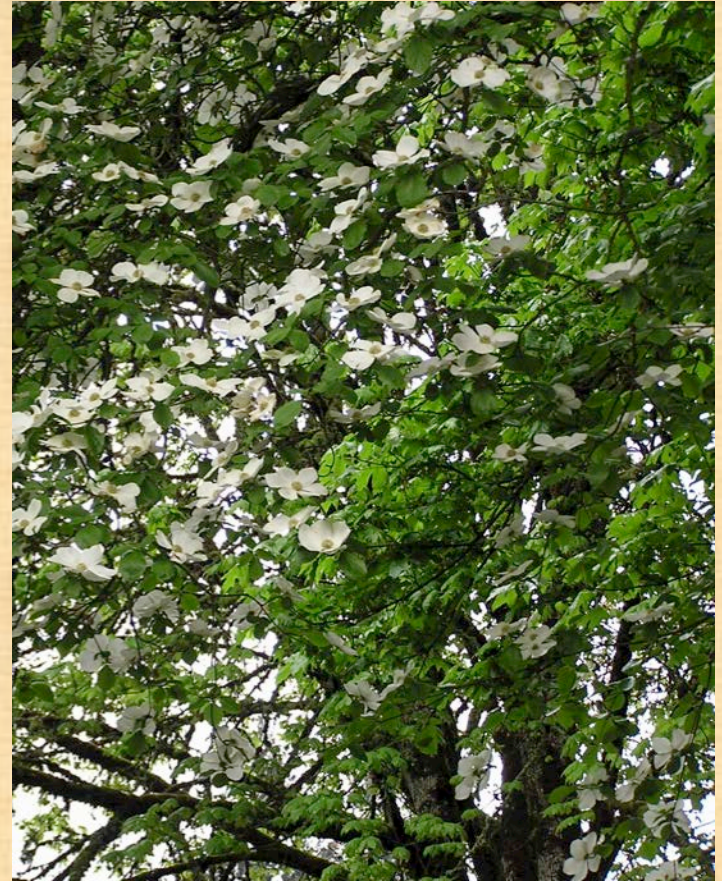


Wild Grape

Native Riparian/Coastal Plants- 30' defensible zone



Salal



Western
dogwood

Native shade tolerant Plants- 30' defensible zone



Carex praegracilis



Wild ginger

Flowers



Yarrow



Candytuft

Nonnative Moderate Water Users



Alyssum



Creeping Thyme

Native Flowers



Iris hartwegii



Scarlet
monkeyflower

Flowers



Western Blue flax-
linum lewisii



Lupine

Groundcovers



Periwinkle-
vinca minor



Creeping Rosemary*

Groundcover



Perennial Verbena

Groundcovers



Goldmoss Sedum

Groundcovers



Native Sedum-
Broadleaf stonecrop

Native Groundcovers



Woodland
strawberry



Creeping
mahonia

Shrubs



Rock Rose

Shrubs



Snowberry -
Symphocarpos albus



Ribes species-
wild currant

Shrubs



Oregon Grape-
mahonia aquifolium



Serviceberry



Dwarf Burning Bush

Shrubs



Spicebush

Shrubs and Vines



Ceanothus
“blue jeans”



Dutchman's pipevine

Shrubs and Vines



Star Jasmine



Escallonia

Coyote Bush- Baccharis



Native form



Dwarf form



Dwarf form-
maintained

**Remember: NO plant is
fireproof**





6. MAINTENANCE is Crucial!

- **Simple, well maintained landscapes are better than elaborate landscapes that are neglected or incredibly water-thirsty.**
- **Prune deadwood from beneath ground covers and shrubs.**
- **Remove fuel ladders.**
- **Improve appearance and vigor of plants and maintain safety at the same time.**

Maintenance Tasks

- Pruning
- Litter reduction
- Weed control
- Re-vegetation
- Mowing
- Removal of...**FUEL**







Our Mantra

All will be in vain...

if you don't maintain!

Realities of Firefighting

- How can YOU improve the odds of YOUR home surviving a fire?
- A word from the California Department of Forestry and Fire Protection...



Through My Eyes

Let me invite you into the cab of my engine... and imagine responding to the King or the Camp fire when all the residents are trying to flee.



**As You Get Closer –
This Is What You See**





Realities of Fire Fighting

The decision tree for a fire captain...

Can I get my engine and crew in and out safely?

- Road clearance
- Overhanging trees
- Bridges
- Other hazards



Propane Tank

Overhanging Trees

Narrow Driveway

15.3.2002



Narrow road
Overhanging trees
Is there a way out?



Good Safe Access Is Important for YOU & the Fire Department



Remember...

**How YOU build and maintain
your home and property CAN
make a difference!**



1661

Cement Shingles

Sofited Eves

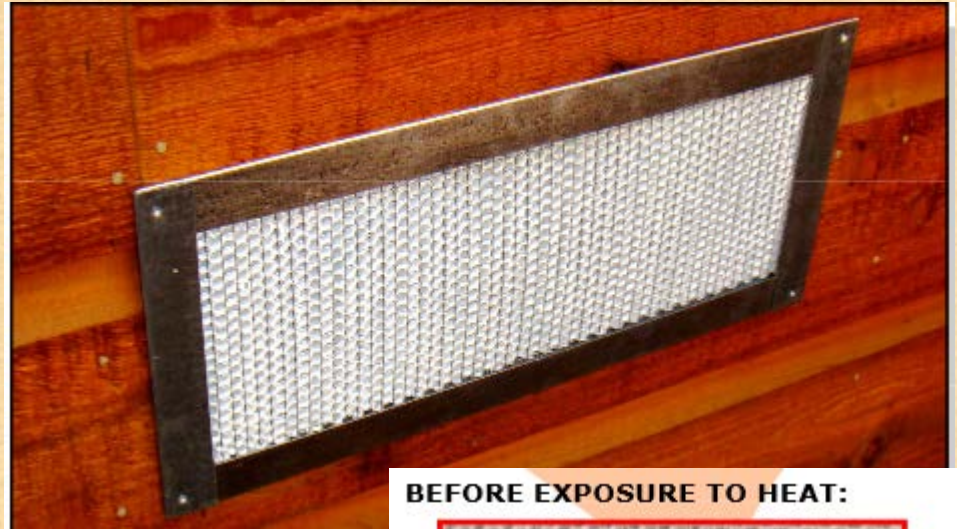


Double pane windows

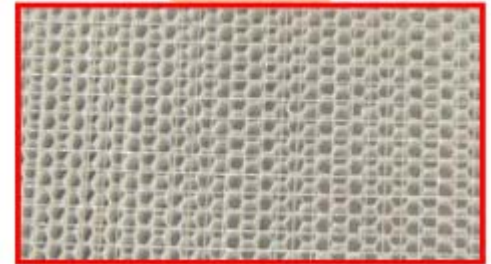
Stucco Siding



Vents --Eve, Foundation, Soffet



BEFORE EXPOSURE TO HEAT:



AFTER EXPOSURE TO HEAT:



Gutters Covers



Hardie Board Type Siding Products









There Are All Kinds of Excuses!

- “I don’t have the time or money.”
- “It’s wrong to cut trees.”
- “It won’t look good anymore.”
- “I will lose my privacy.”
- “It’s not my responsibility.”
- “I don’t have an easy way to dispose of the unwanted vegetation.”
- “It won’t happen to me.”
- “I have insurance.”
- “I don’t know where to start.”

Taking Action in Your Yard and Beyond



Moving Beyond Your Borders...

Can you work collaboratively with your neighbors?

- Knowledge is power!
- Cooperate for fire clearance.
- Are you your neighbor's keeper?

Homeowners' Associations

- What resources are available?
 - Speakers
 - CAL FIRE
 - Master Gardeners
 - EDC Fire Safe Council

Why We Won an Award



Fire Safe Councils

We've taken this presentation to a variety of venues, including homeowner associations...



Fair Presentations



Hands-on Activities for Kids

Homeowners' Associations

- **Grants**
 - **Fire-Safe Council**
 - **CAL FIRE (CDF)**
 - **U. S. Forest Service**
 - **Resource and Conservation District**
 - **Sierra Nevada Conservancy**



Improving Rural Roads

- Create fire-breaks.
- Make roads accessible for fire engines.
- Work parties share the effort.
- There is a cost, but consider the alternative.

Entire Communities

- **Cameron Park**
 - restrictions
 - Demonstrations
- **El Dorado Hills**
- **Incline Village**
- **Bend, Oregon**



Do the Math...

+ DEFENSIBLE SPACE
- DEAD or DYING FUELS
- CONTINUOUS VEGETATION
- LADDER FUELS
+ LEAN, GREEN and CLEAN
+ MAINTENANCE

= A FIRE WISE LANDSCAPE

The Payoff for Your Work

**RESULTS = A SAFER AND
MORE ATTRACTIVE
LANDSCAPE**





Resources

- UCCE Master Gardeners
<http://ceeldorado.ucdavis.edu>
- California Department of Forestry and Fire Protection www.fire.ca.gov
- Firewise www.firewise.org
- U.C. Forest Products Lab www.ucfpl.ucop.edu
- El Dorado Co. Fire Safe Council edcfiresafe.org
- Will Your Home Survive? by R. D. Harrell & William C. Teie
- California Wildfire Landscaping by Maureen Gilmer



Want More Handouts?

- Print neatly on the resource list and check what you want.
- We have an Preparedness Checklist, but there are lots of those available.
- I will email things to you.

| Fire-wise Landscaping 2020 - Handouts Requested | | | | |
|---|------------------------|--------------------------|------------|------------|
| Name | E-mail (print legibly) | I would like to receive: | | |
| | | Class Notes | Check List | Evacuation |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

The Real Test – Short Term

- What would you like to change?
- What are you willing to do?
- Identify 3 things you can do to make your landscape and home safer!
- Who will have the most checks on the checklist?

The Real Test – Long Term

- **Maintenance is crucial.**
- **Nature is not static.**
- **Action today is just a start.**
- **Make a commitment and share your commitment with others.**



Did We Meet Our Goals Today?

- **DO YOU BETTER UNDERSTAND???**
 - Your property's over-all risk level
 - The fire equation and how fire moves
 - The basic principles of fire wise landscaping
 - Ways landscapes can be attractive, water conserving and firewise
- **CAN YOU IDENTIFY???**
 - The difference between fire prone and fire resistant plants
 - Resources to help you
 - 3 key actions you can take starting today

Tell Us What You Learned

- Did we teach you something new?
- How many checks do you have on your check list?
- What's the #1 priority on your To Do list?

It Will Happen Again!



Will You Be Prepared????

King Fire



Thank You for Coming

If you feel that we have been preaching to the choir – we hope you will share our “sermon” with your friends and neighbors.



Creating and Maintaining a Fire Wise Landscape

Presented by

Alice Cantelow

UCCE Master Gardener

Robin Stanley

UCCE Master Gardener

Mark Stanley

California Dept. of Forestry
and Fire Protection, Retired

Sponsored by

University of California
Cooperative Extension Master Gardeners
of El Dorado County

