

Maintaining an Existing Landscape

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The Issue

Is this maintaining
an existing
landscape?



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The Issue

Is this?



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Overview

1. Review best practices for maintaining a CA landscape.
2. Provide details to help inform our use of best practices.
3. Review defensive landscaping for fire safety.
4. Recap



Best Practices

- Irrigate appropriately
 - Understand plant water use
 - Know your soil type
 - Irrigate deeply
 - Irrigate early
 - Avoid runoff
 - Watch for signs of drought stress
- Prioritize landscape plants



Best Practices

- Mulch
- Avoid fertilizer during peak heat and reduced water periods
- Avoid poor pruning practices
- Remove unwanted plants
- Practice fire safe defensive landscaping



How do I irrigate appropriately?

Irrigation scheduling involves applying the right amount of water at the right time.

Factors to consider:

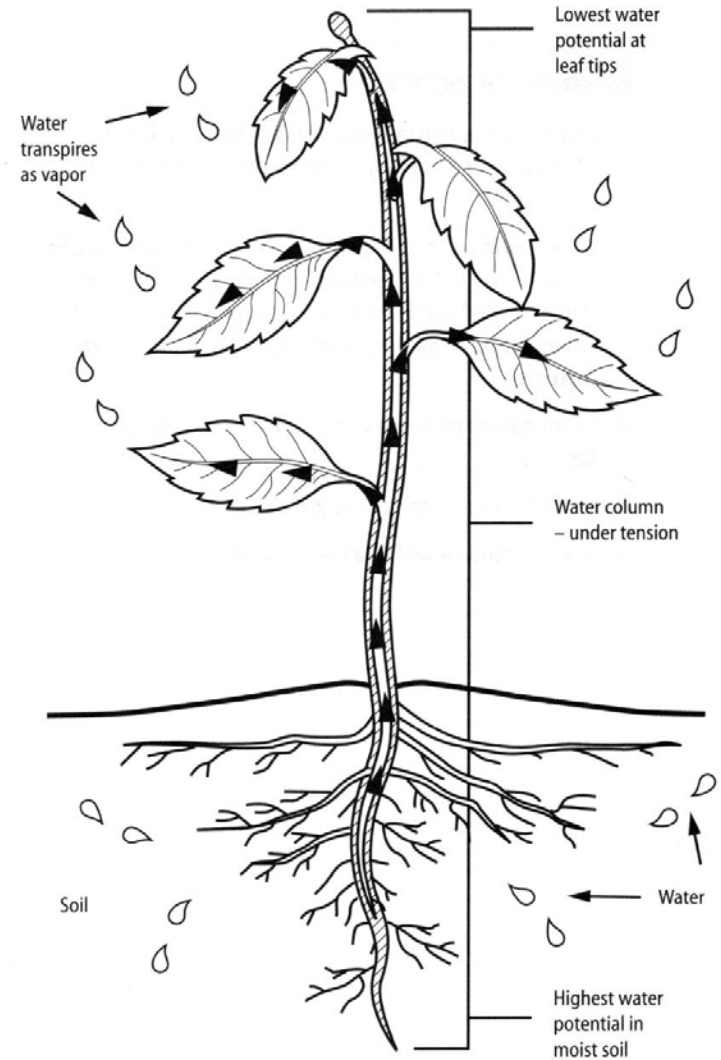
- Plant water use
- Soil type (water holding capacity, infiltration rate)
- Rooting depth
- Irrigation system output (distribution uniformity and precipitation rate)



How do I irrigate appropriately?

Understanding plant water use.

- Evapotranspiration (ET) describes water loss occurring from evaporation and transpiration.
- What effects evapotranspiration?



Graphic: California Master Gardener Handbook, 2002



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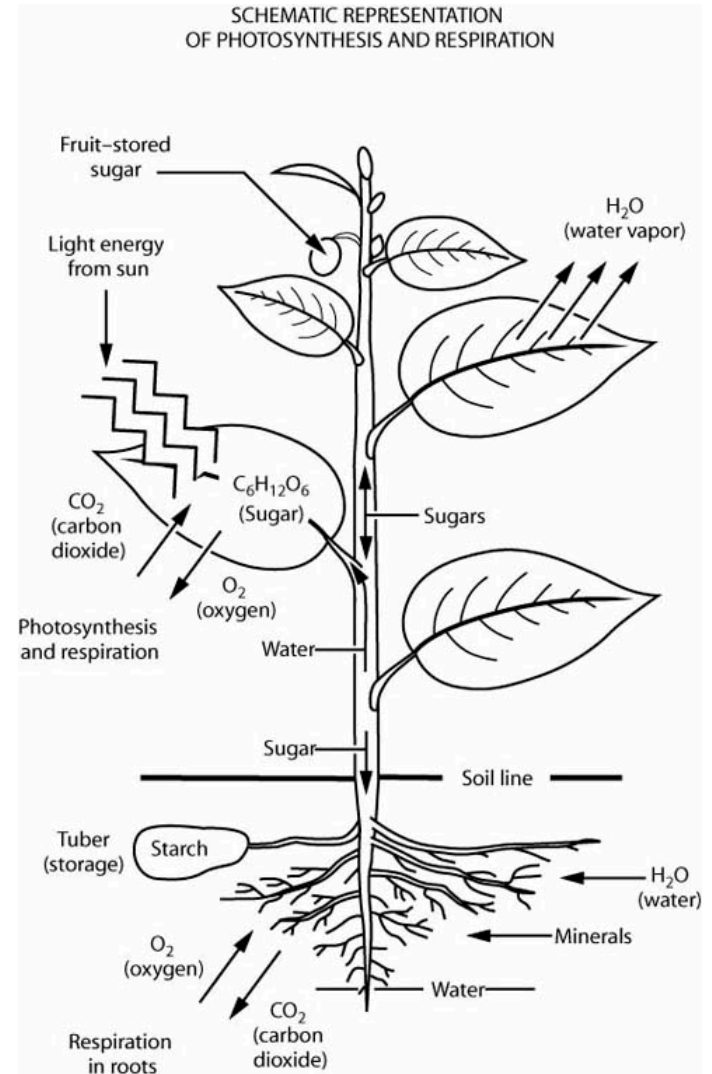
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How do I irrigate appropriately?

Understanding plant water use.

- Transpiration occurs when water is lost as CO₂ enters the leaves through stomata
- Without this process there would be no photosynthesis



Graphic: California Master Gardener Handbook, 2007



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How do I irrigate appropriately?

Understanding plant water use.

- **ET = ETo x Kc**
- ET = Evapotranspiration
- ETo = Reference Evapotranspiration
- Kc = Crop/Landscape Coefficient

www.cimis.water.ca.gov



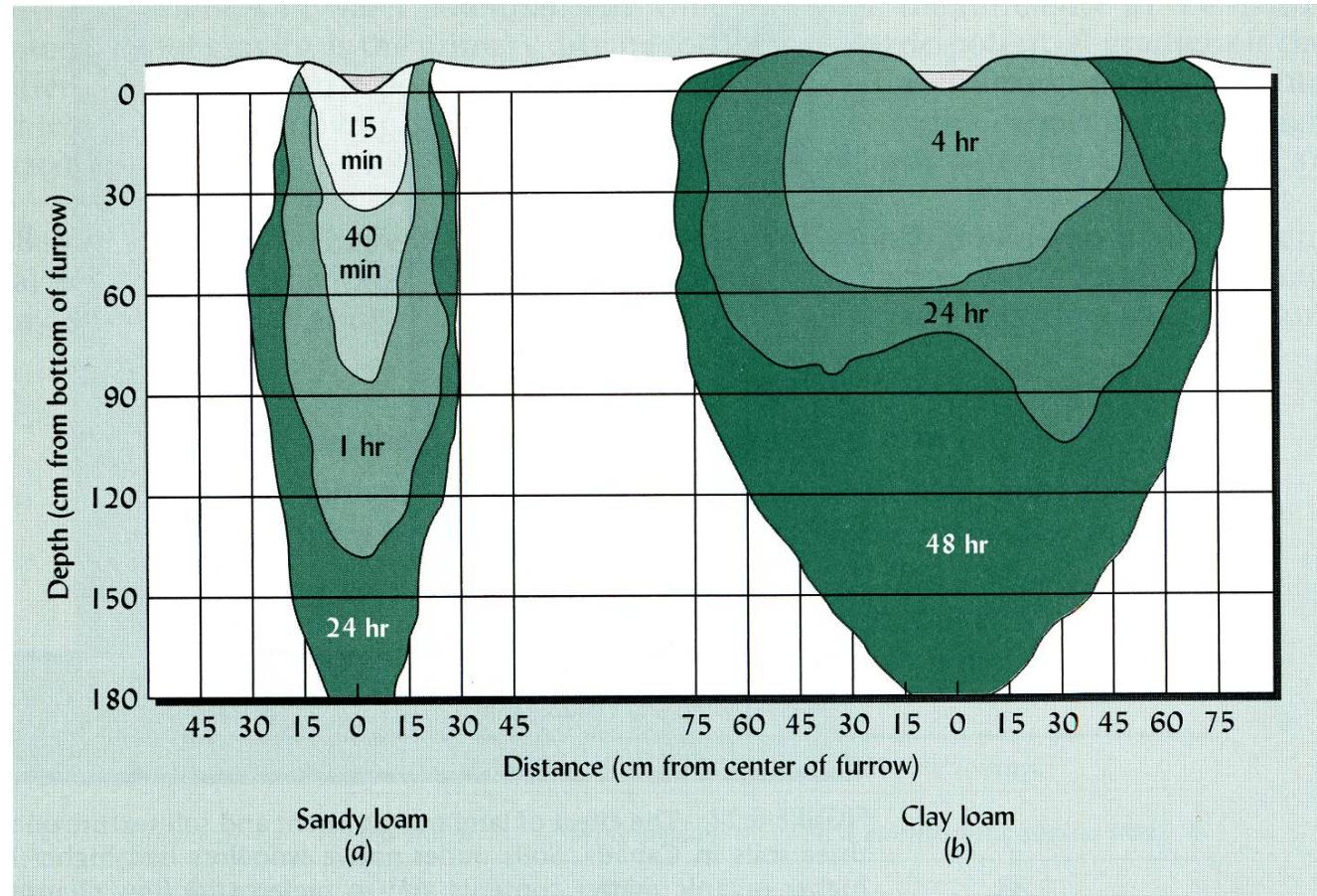
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How do I irrigate appropriately?

Know your soil type.



Graphic: Brady & Weil, The Nature and Properties of Soils, 2002



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How do I irrigate appropriately?

Know your soil type.

<u>Soil Texture</u>	Plant-Available Water Holding Capacity (inches of water per foot of soil)
Very coarse sands	0.4 - 0.75
Coarse sands, fine sands, loamy sands	0.75 - 1.25
Sandy loams, fine sandy loams	1.25 - 1.75
Very fine sandy loams, loams, silt loams	1.50 - 2.30
Clay loams, silty clay loams, sandy clay loams	1.75 - 2.50
Sandy clays, silty clays, clays	1.60 - 2.50

Table: UC Center for Landscape and Urban Horticulture, adapted from Schwankl, LJ and T Prichard. 2009. University of California Drought Management Website.



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How do I irrigate appropriately?

Rooting depth/Depth to irrigate

- Turf: 8-12 inches
- Shrubs: small – 12 inches
large – 24 inches
- Trees: small – 24 inches
large – 36 inches



How do I irrigate appropriately?

Irrigation Audit

- Tune up irrigation system by fixing leads, broken heads and clogged emitters/sprinklers
- According to the EPA, 1 broken sprinkler head could waste up to 25,000 gallons of water and \$90+ over a 6-month irrigation season.



How do I irrigate appropriately?

Irrigation Scheduling

- Distribution uniformity (how evenly is water applied?)
- Precipitation rate (how fast is water applied?)
- Soil type
- Landscape coefficients
- Reference evapotranspiration



Maintaining turf

Options:

- **Remove/Allow to Die**
 - Is your turf non-functional?
 - Are there tree/trees in your turf?
- **Reduce**
 - Do you only use/recreate on a portion of your turf?
- **Maintain**
 - Can I maintain my turf with less water?
 - Is my irrigation system efficient?



Maintaining turf

UC's Lawn Watering Guide:

- Based on warm season grass K_c of .6 and cool season grass K_c of .8
- Assumes distribution uniformity of your sprinkler/irrigation system is 80%



Maintaining turf

How to Use UC's Lawn Watering Guide:

- Determine if you have warm or cool season turf
- Conduct a can test to determine irrigation output and distribution uniformity
- Determine how long to irrigate (minutes per week) based on climatic chart provided
- Determine maximum amount of time to water per event until runoff begins; implement water cycling if needed



Maintaining turf

UC's Irrigation Scheduling Worksheet:

- Generates an annual irrigation calendar
- Accommodates irrigation that is restricted to certain days of the week
- Still requires you get to know your system including distribution uniformity, soil type, etc.



Maintaining turf

Water-saving Lawn Tips:

- Adjust irrigation schedule monthly
- Water at night or during the early morning hours, this reduces evaporation and wind will typically not be strong enough to interfere with sprinkler patterns
- Mow lawns higher, this reduces growth rate, promotes deeper root growth and shades soil



Maintaining trees

Not all trees are deeply rooted! Rooting depends on soil depth and irrigation history.

What do you do?

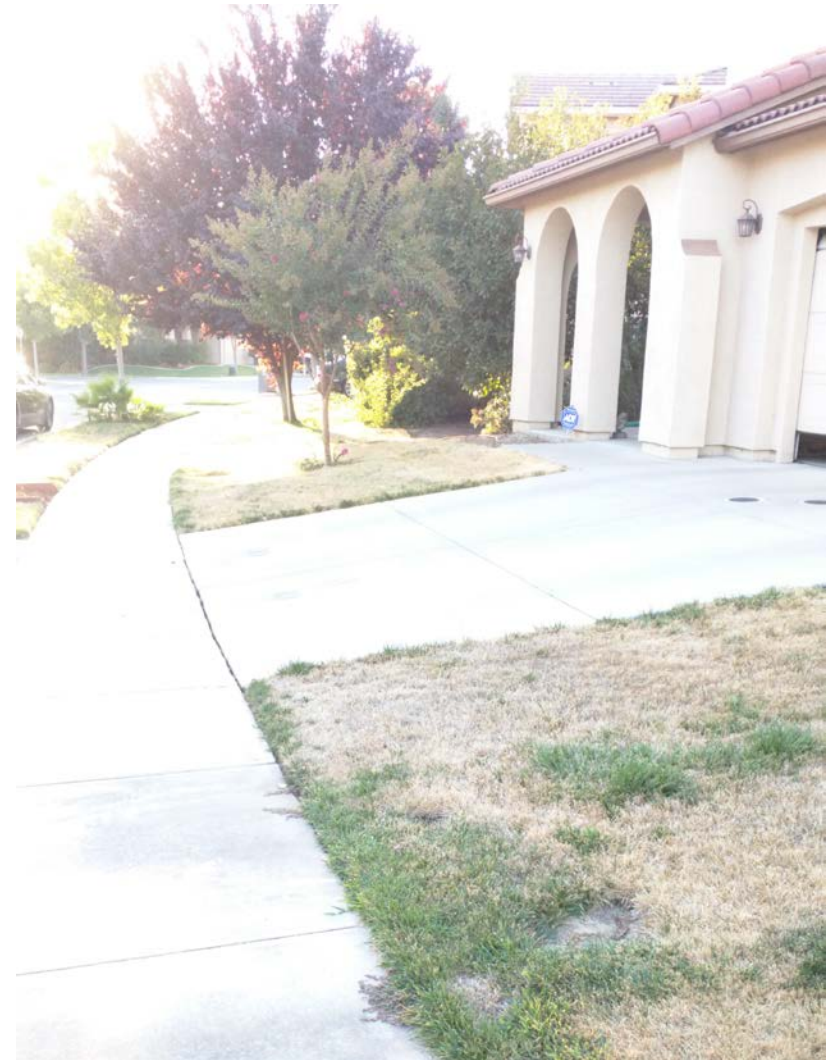
Assess your current irrigation practices and watch for signs of stress.



Maintaining trees

Irrigation

- Deep irrigations with a garden hose 2-4 weeks apart may keep trees alive
- Must water to a depth of 2-3 feet
- Water beneath the canopy and beyond the drip line (if possible)



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Maintaining trees

Irrigation

- Tree Ring Irrigation Contraption (TRIC)
- Input system information (canopy radius, soil type, drip length) to get run time to wet soil to 3' deep
- ~ \$100



Dave Fujino & Loren Oli



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Maintaining trees

Irrigation

- Rotary System Irrigation Contraption (RSIC)
- Runtime depends on soil type
- ~ \$20



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Maintaining trees

Water Stress

- Two seasons of severe water stress can lead to death
- More prone to damage from diseases and insects
- Drop leaves and twigs to reduce transpiration



Maintaining trees

Water Stress Signs/Symptoms

- Wilting or drooping leaves that do not return in turgidity by evening
- Curled or yellow leaves that may drop
- Foliage that becomes dull, gray / blueish in color
- New leaves that are smaller or stem sections that are closer together than normal



Maintaining trees

Bark beetles



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Maintaining trees



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Maintaining landscape plants

- Prioritize
- Mulch
- Avoid fertilizer during peak heat and reduced water periods
- Avoid poor pruning practices
- Remove unwanted plants



Maintaining landscape plants

- Prioritize

How many of you have a beloved plant(s)?



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Maintaining landscape plants

Find plant water use information for the items that you have/plan to keep.

- WUCOLS IV (Water Use Classification of Landscape Species)
<http://ucanr.edu/sites/WUCOLS>
- Sunset Garden Collection
<http://sunsetwesterngardencollection.com/>
- California Native Plant Society
<http://www.cnps.org/cnps/grownative/lists.php>
- Water districts



Maintaining landscape plants

- Mulch
 - 3-4” mulch, preferably something that creates a mat (e.g., shredded bark as opposed to nuggets)
 - Avoid the base of plants
 - Never create a mulch volcano



Janet Hartin



Maintaining landscape plants

- Avoid fertilizer during peak heat and reduced water periods
 - Studies *may* indicate that early spring fertilizer application support plant health during dry summer months
 - Nitrogen promotes leafy growth, increasing plant transpiration
 - Excess N leads to weak new growth



Maintaining landscape plants

- Avoid poor pruning practices
 - Pruning stimulates buds below the cut and typically results in vigorous growth
 - New growth can increase plant transpiration



Maintaining landscape plants

- Remove unwanted plants
 - Weed
 - Prioritize plants you intend to keep long term



Maintaining edible plants

What are our options for dealing with drought?

- Plant what you will use
- Plant fewer vegetables, focusing on high yield items
- Plant lower-water consumables
- Reduce foliage on fruit trees



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Maintaining edible plants

What will your family use and when will you use it?

- Fresh consumption
- Food preservation



Melissa Womack



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High yield/continuous yield vegetables

- Beans
- Leafy greens
- Summer squash
- Tomatoes
- Zucchini
- Others?



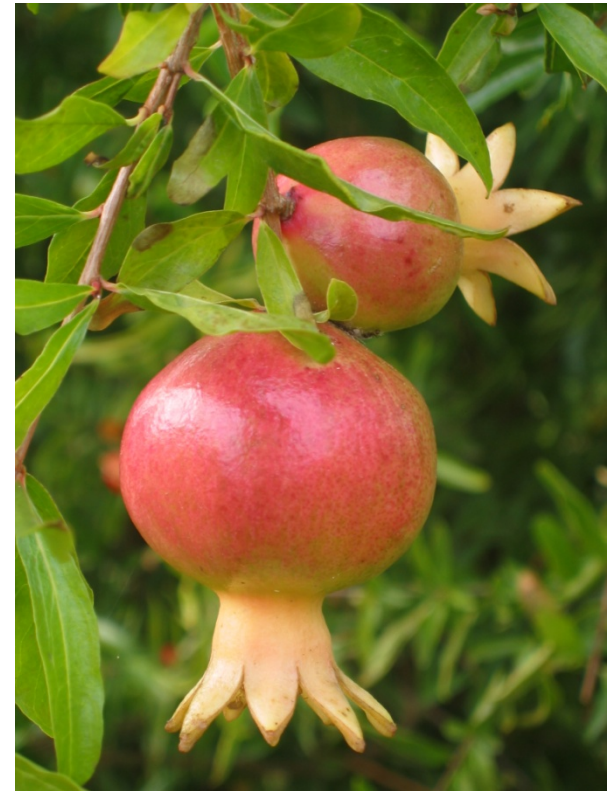
Kathy Keatley Garvey



Maintaining edible plants

Lower water fruit/vegetable options:

- Artichoke
- Asparagus
- Eggplant
- Herbs (woody-stemmed)
- Squash
- Others?



Ellen Zagory



Maintaining edible plants

Foliage reduction (*fruit trees*)

Reduce transpiration and water needs by cutting back new growth in summer.

Although this isn't ideal, it would help mitigate landscape water use.

Possibly the best solution for preserving existing plants should there be zero landscape water allocation.



Practice defensive landscaping

Know the basics of fire:

Fuel + Oxygen + Heat = Fire

Which of these three factors can you control?



Photo credit: MorgueFile.com – 46birds



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Practice defensive landscaping

- Fuel (in the landscape) is... anything that will burn
 - Dry or dead vegetation
 - Trees
 - Woody shrubs or perennials
 - Landscape mulch



California Law (2008)

State law extended the defensible space around your home from 30 to 100 feet. This doesn't sound like much, just 70', but compare the area:

area with 30' clearance = 2,826 ft²

vs.

area with 100' clearance = 31,400 ft²



11X MORE AREA!

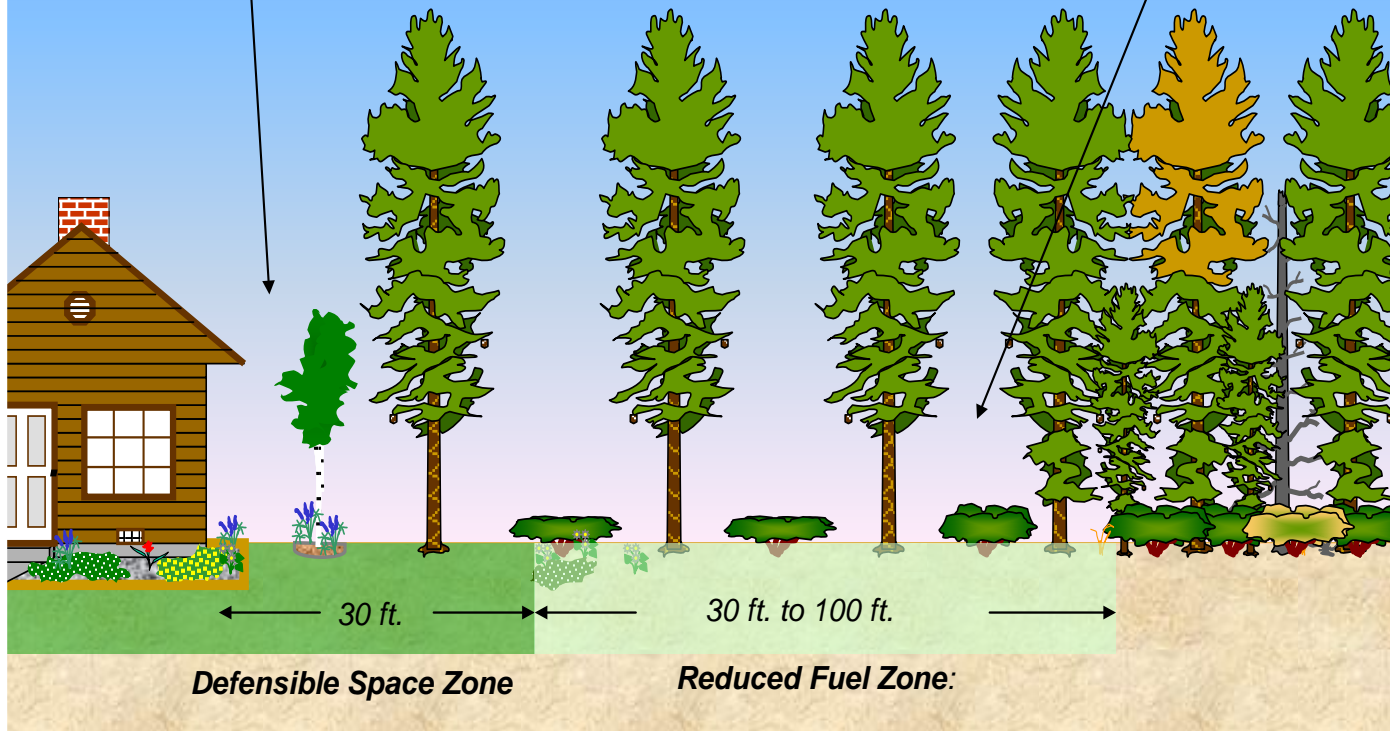


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Defensible Space *Reduced Fuel Zone*

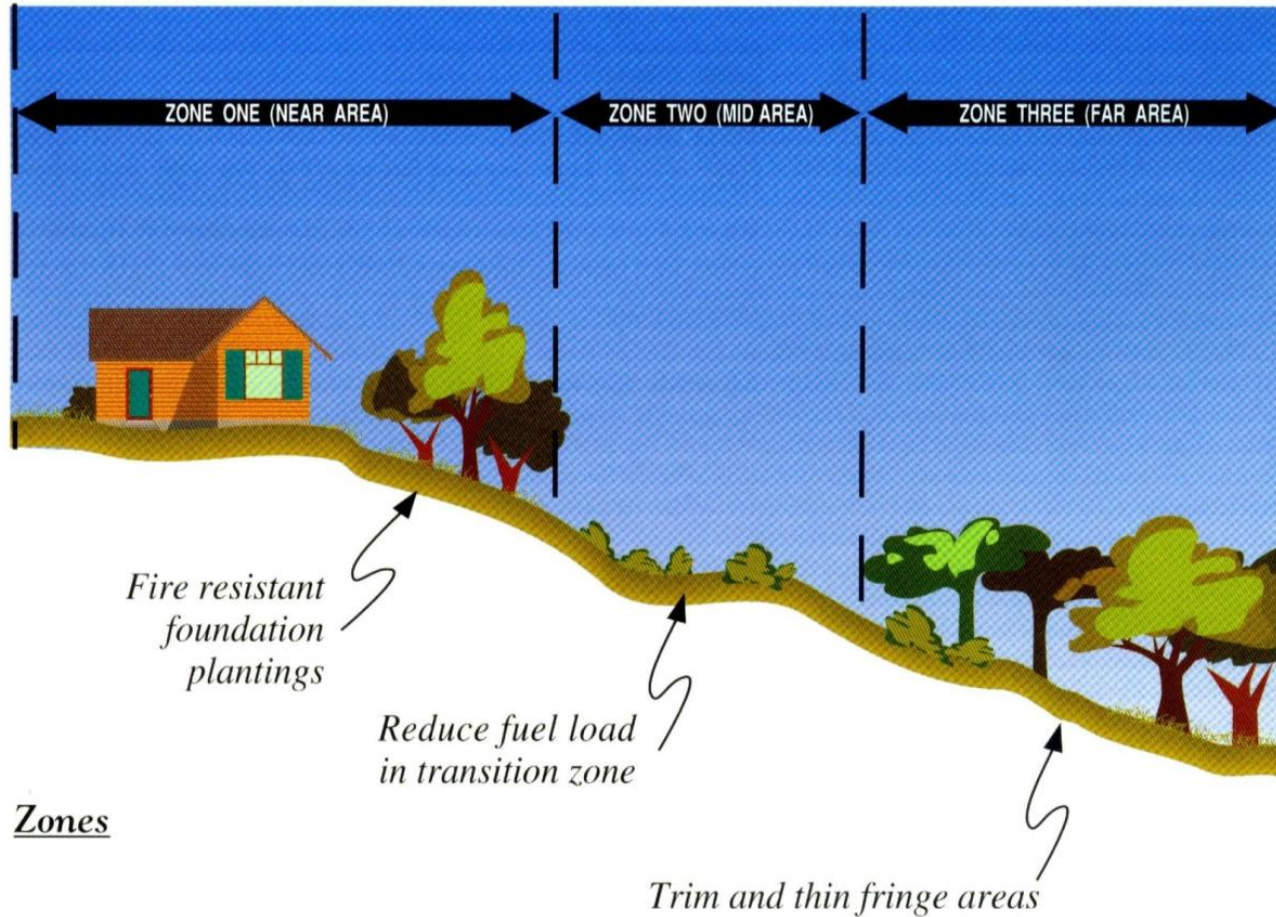


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Understand the zones ...



Zones



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What does the law say?

- Zone spacing depends on the slope, height of vegetation and fire risk:
 - Steeper slope = more spacing
 - Taller vegetation = more spacing
 - More fire prone = more spacing
- Identify your two zones:
 - 0 - 30 feet - Defensible Space Zone
 - 30 - 100 feet - Reduced Fuel Zone



Home defense zone

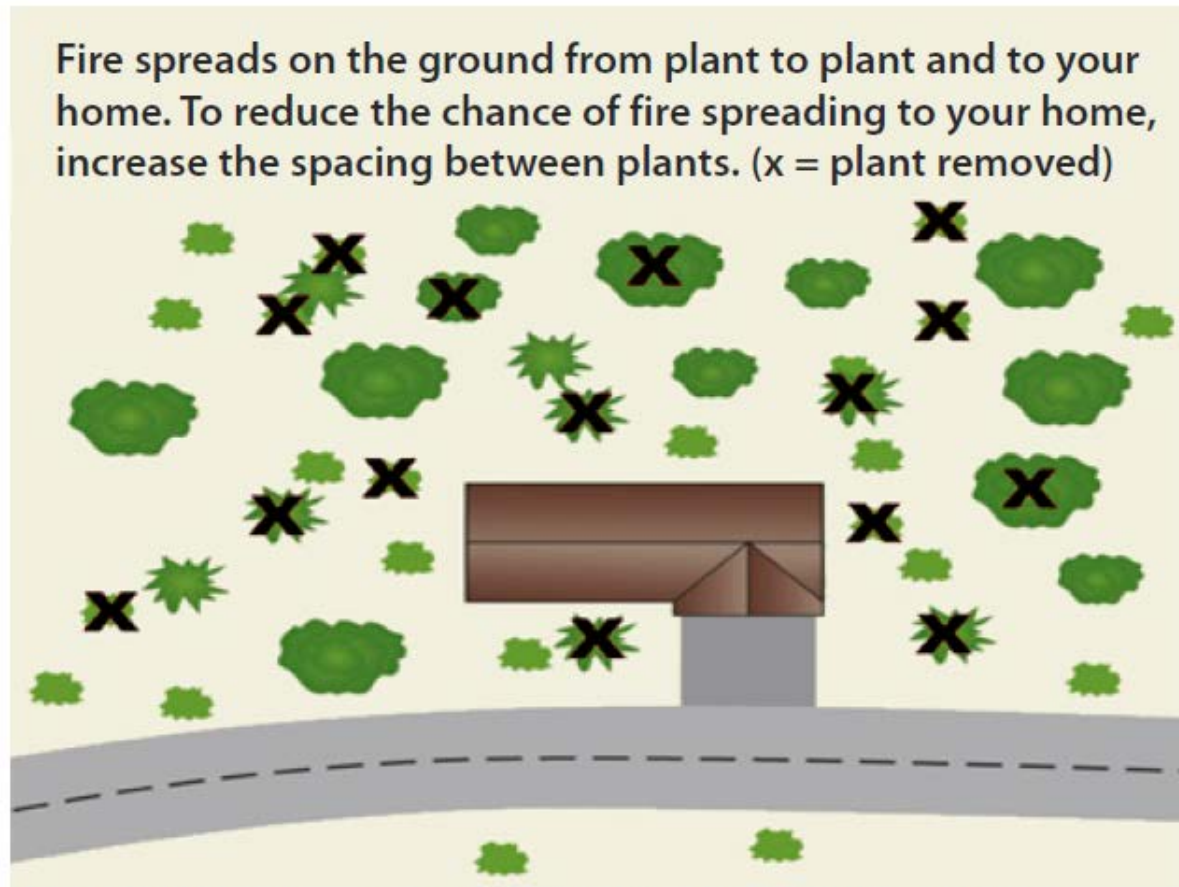


Figure 2. Horizontal arrangement of vegetation. *Source: Riverside County Fire.*



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- Thin and separate
- Create islands
- Cut grass
- Favor trees away from the house



Photo credit: UCCE Master Gardeners of El Dorado County



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Separate vegetation from the house



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0 - 5 feet
“noncombustible zone”
to reduce chance of flame
contact exposure

Photo credit: Insurance Institute for Business and Home Safety



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Effective defensible space must be present on all sides of the home



Photo credit: Insurance Institute for Business and Home Safety



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~~Fire resistant~~ plant lists?

- All plants can burn regardless of how they are marketed
- Fire safe landscaping requires maintenance (pruning, irrigation, clean-up)
- Select low growing, open structured, less resinous, higher moisture content plants
- Native and drought tolerant plants can be options, if maintained well





Rubber mulch



Bark mulch



Pine needle mulch

- Mulch helps plants retain moisture, but it will burn too
- Use hardscape, rock mulch or lawns < 5 feet from the home.

Photo credit: University of California Cooperative Extension



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Where to not plant

- Under vents and eaves
- Adjacent to siding
- Under or near decks
- Inside corners

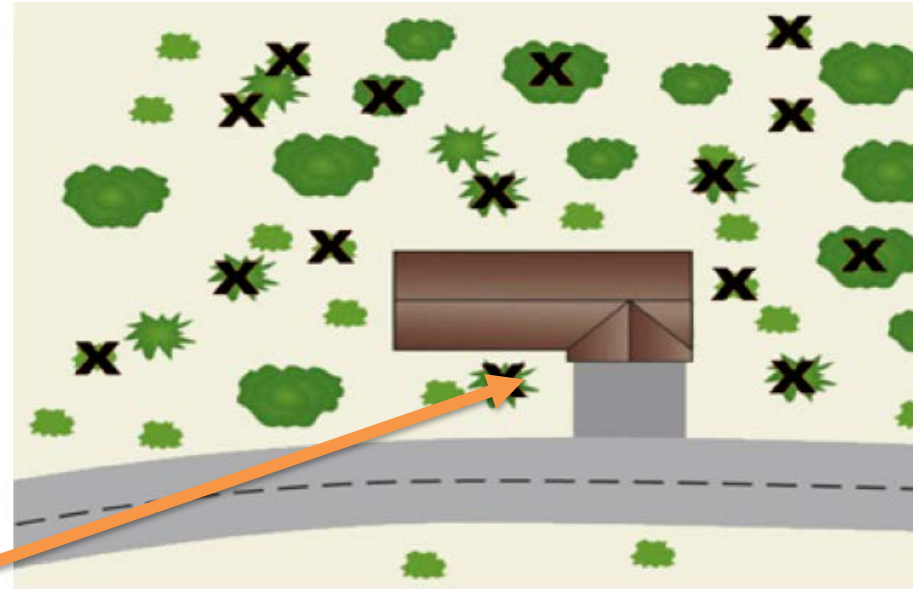


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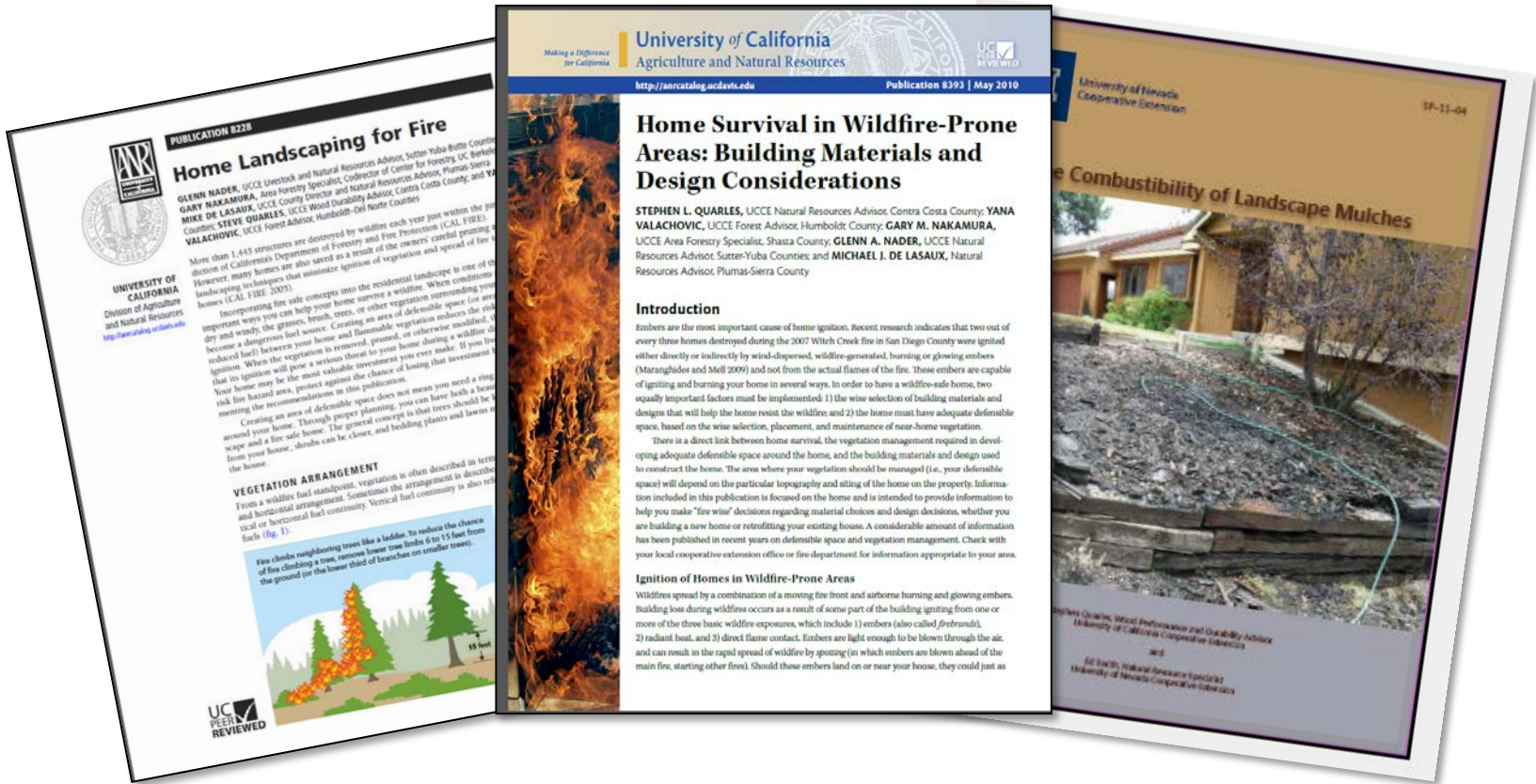
Practice Defensive Landscaping

Conclusions

- Fire safe landscapes can be beautiful, safe, maintain privacy and save water
- Placement of vegetation is key (away from vents, eaves and decks)
- Maintenance is essential
 - 0 – 5 feet (non-combustible materials only)
 - 5 – 30 feet (lean, green and clean)
 - 30 – 100 feet (reduced fuel zone)



For more information visit:



ucanr.edu/sites/forestry/Wildfire



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Recap

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Thank you!

Questions?

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