## Maintaining an Existing Landscape

#### Missy Gable Director UC Master Gardener Program



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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



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

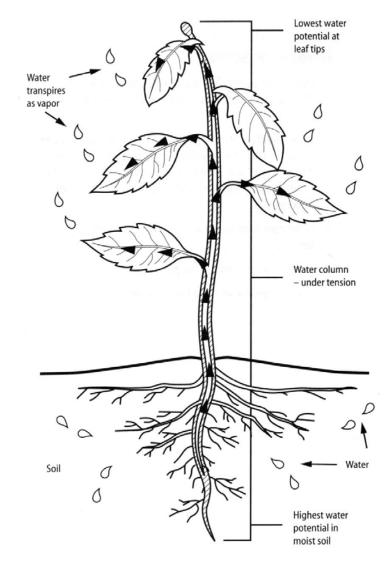
Factors to consider:

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



Understanding plant water use.

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



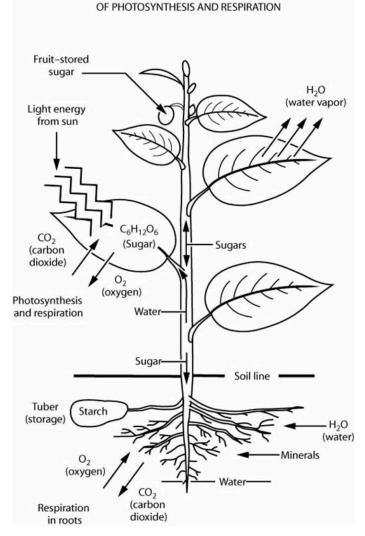
Graphic: California Master Gardener Handbook, 2002



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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



SCHEMATIC REPRESENTATION



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Graphic: California Master Gardener Handbook, 2007

Understanding plant water use.

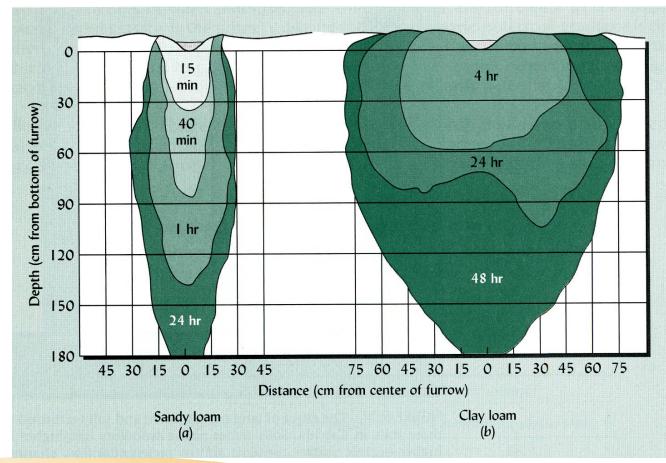
#### • $\mathbf{ET} = \mathbf{ETo} \mathbf{x} \mathbf{Kc}$

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

#### www.cimis.water.ca.gov



Know your soil type.





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#### Know your soil type.

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

and T Prichard. 2009. University of California Drought Management Website.



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Rooting depth/Depth to irrigate

• Turf:

• Trees:

• Shrubs:

- 8-12 inches small – 12 inches large – 24 inches small – 24 inches
- large 36 inches



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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.



**Irrigation Scheduling** 

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



**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?



UC's Lawn Watering Guide:

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



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



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.



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



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.



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#### 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)





#### 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







Irrigation

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





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Water Stress

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



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



#### **Bark beetles**







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



• Prioritize

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







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

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



- 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



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- 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



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



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



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## 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



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

- Fresh consumption
- Food preservation





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High yield/continuous yield vegetables

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



Kathy Keatley Garvey



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Lower water fruit/vegetable options:

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



Ellen Zagory



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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**

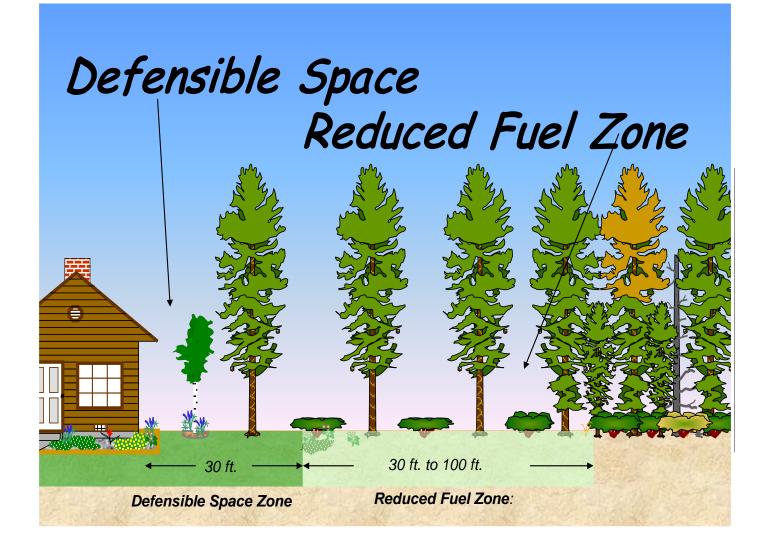
- Fuel (in the landscape) is... anything that will burn
  - Dry or dead vegetation
  - Trees
  - Woody shrubs or perennials
  - Landscape mulch



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:

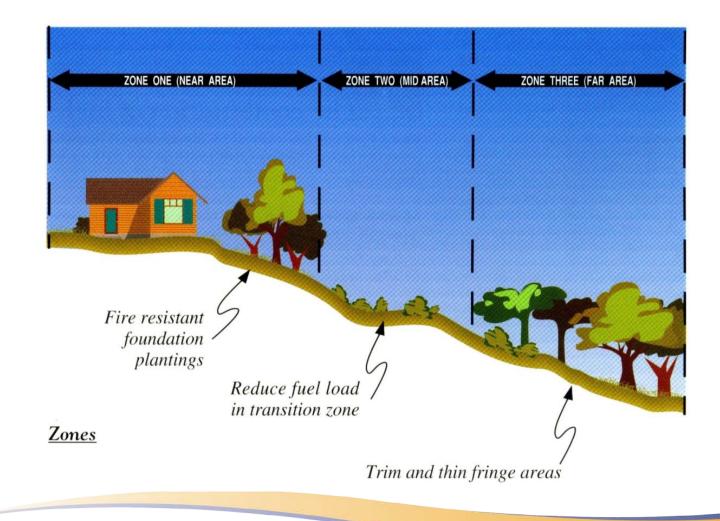






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#### Understand the zones ...





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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

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)

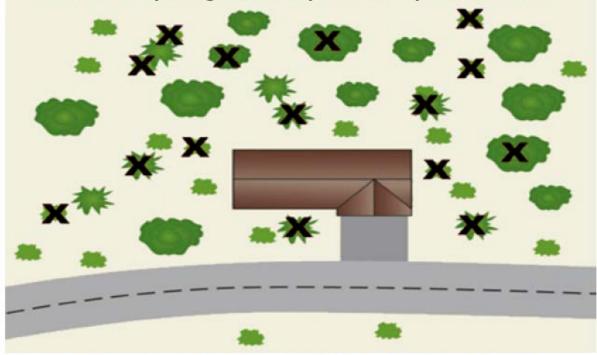


Figure 2. Horizontal arrangement of vegetation. Source: Riverside County Fire.



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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 flamecontact 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







Photo credit: University of California Cooperative Extension



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



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### Where to not plant

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

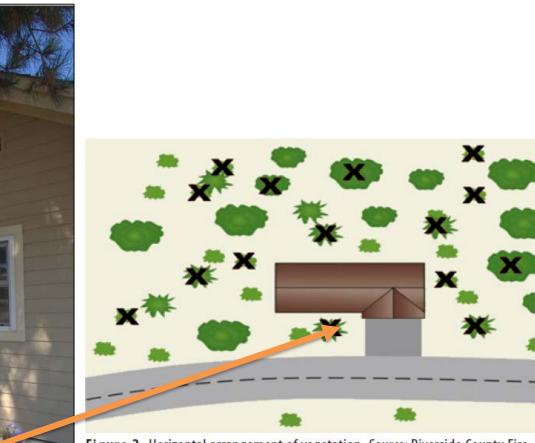


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### **Practice Defensive Landscaping**

Conclusions

- Fire safe landscapes can be beautiful, safe, maintain privacy and save water
- Placement of vegetation is key (away from vents, eves 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:

Making a Differen for Californ Home Landscaping for Fire

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#### Home Survival in Wildfire-Prone **Areas: Building Materials and Design Considerations**

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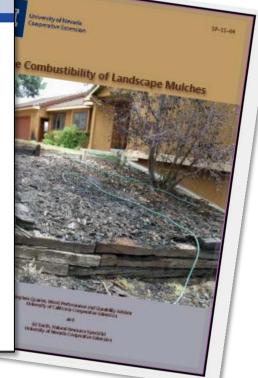
#### Introduction

Embers are the most important cause of home ignition. Recent research indicates that two every three homes destroyed during the 2007 Witch Creek fire in San Diego County were ignited ither directly or indirectly by wind-dispersed, wildfire-generated, burning or glowing embers (Maranghides and Mell 2009) and not from the actual flames of the fire. These embers are capabl of igniting and burning your home in several ways. In order to have a wildfire-safe home, two qually important factors must be implemented: 1) the wise selection of building materials and lesigns that will help the home resist the wildfire; and 2) the home must have adequate defensible space, based on the wise selection, placement, and maintenance of near-home vegetation. There is a direct link between home survival, the vegetation management required in devel

oping adequate defensible space around the home, and the building materials and design used o construct the home. The area where your vegetation should be managed (i.e., your defensible space) will depend on the particular topography and siting of the home on the property. Information included in this publication is focused on the home and is intended to provide information to help you make "fire wise" decisions regarding material choices and design decisions, whether you are building a new home or retrofitting your existing house. A considerable amount of information has been published in recent years on defensible space and vegetation management. Check with your local cooperative extension office or fire department for information appropriate to your are

#### Ignition of Homes in Wildfire-Prone Areas

Wildfires spread by a combination of a moving fire front and airborne burning and glowing embers. Building loss during wildfires occurs as a result of some part of the building igniting from one or more of the three basic wildfire exposures, which include 1) embers (also called frebrands). 2) radiant heat, and 3) direct flame contact. Embers are light enough to be blown through the air and can result in the rapid spread of wildfire by spotting (in which embers are blown ahead of the ain fire, starting other fires). Should these embers land on or near your house, they could just as



#### ucanr.edu/sites/forestry/Wildfire



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## Recap

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# Thank you!

# Questions?

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