### **Download Tonight's Presentation**

#### **Folsom Water Conservation Webpage**

- Rebates
- Water Wise House Calls
- Videos and Presentations
- Workshops
- Drought Info

Scroll to "Upcoming Workshops" for presentations









## Acts of Kindness -- Give Your Garden Some Love



Cheryl Buckwalter landscapeliaisons @gmail.com





CLIA, QWEL,
ReScape
Landscape Consultant,
Designer, Educator



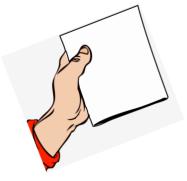
All Rights Reserved



## Acts of Kindness



- Nurture your soil
- Embrace rainwater as a resource
- Respect trees & plants
- Treat water as the precious resource it is
- Care for garden life
- Resources



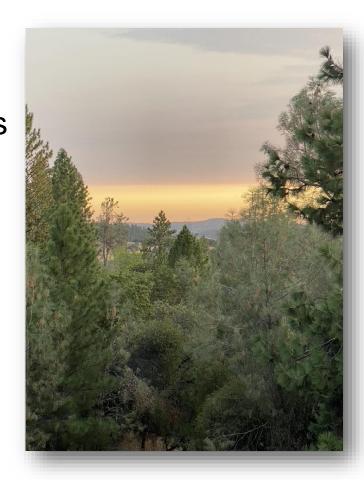




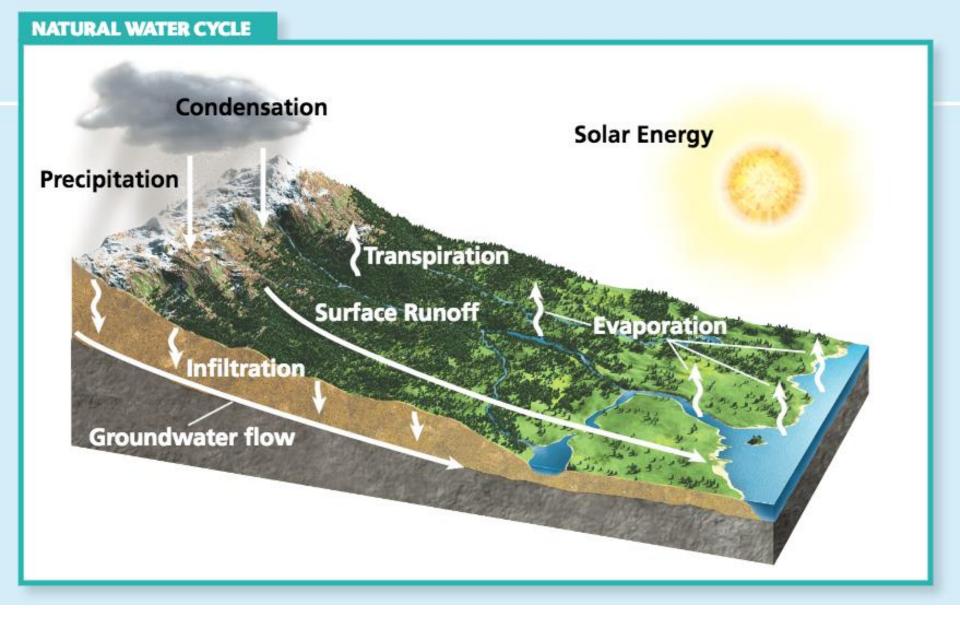
## Balancing Act

### These are tough times...

- For our gardens & all its creatures
- It's not a matter of IF but WHEN
  - Drought conditions
  - Water shortages
  - Extreme temperatures
  - Fires

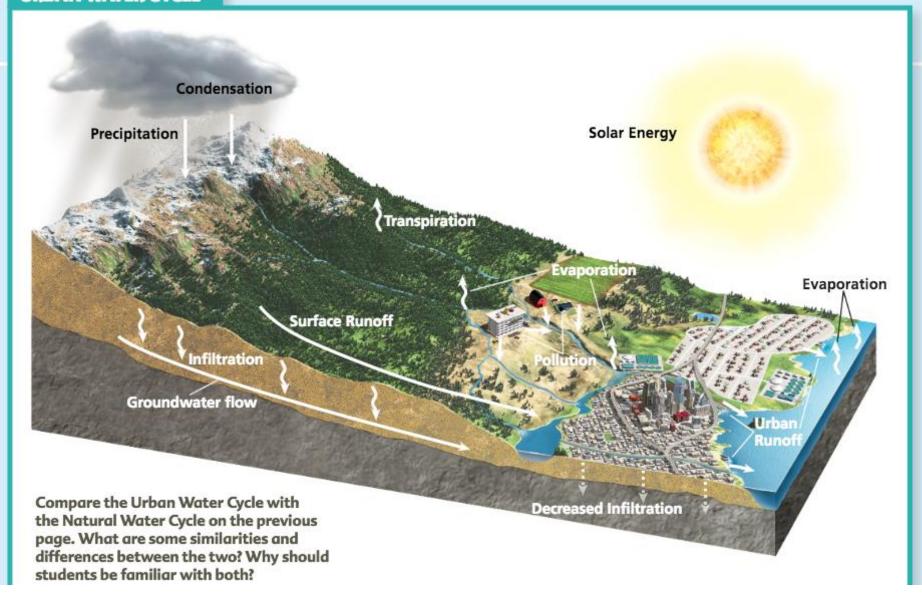






Credit: "Environmental Literacy Teacher Guide Series, Earth's Freshwater" National Geographic

#### **URBAN WATER CYCLE**





## Waste vs. Abundance

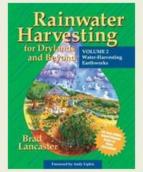


### **Dehydrated Site**

- Rain & irrigation runoff drain off property & into storm drains
- Contaminated water into waterways
- Erosion depletes soil fertility









### Waste vs. Abundance



### **Hydrated Site**

- Rain & irrigation runoff soak into soil
- Soil cleanses pollutants
- Your home & landscape are a "mini" watershed



### Let's Start with Soil





Healthy, fully functioning soil is balanced to provide an environment that sustains & nourishes plants, soil microbes, & beneficial insects

-- U.S. Department of Agriculture

"There can be no life without soil and no soil without life; they have evolved together."





# How to Create Resilient Soil? Compost!



- Slowly releases nutrients to feed & support soil organisms
- Spread 1" of compost around base of plants
- Moisten & cover with mulch
- Over time, soil becomes like a nutrient-rich sponge



# What NOT To Do to Soil

#### DO NOT

- Remove organic matter, leave grass clippings & leaves
- Apply salt-based, synthetic fertilizers
- Apply pesticides
- Cultivate or till

#### **WHY**

- Kills or damages beneficial soil organisms & biological network
- Compacts soil, reduces space for movement of air (oxygen) & water



# Know Your Soil Type

- A mix of sand, silt, & clay
- How to determine?
  - Soil probe
  - Jar test
  - Soil analysis by a lab

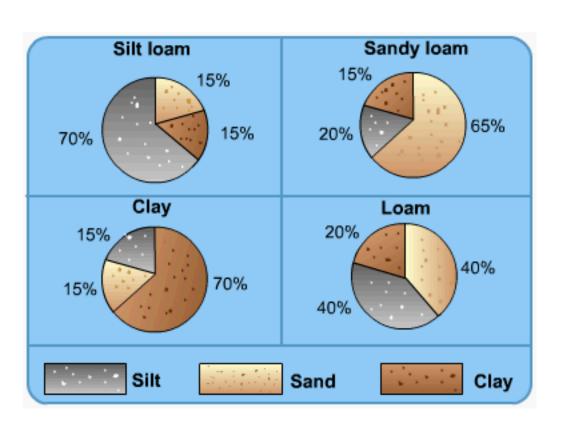








### Soil Texture Combinations



If your jar test is 20% clay, 40% Silt, 40% sand = Loam, you have the perfect combination.



# Shaping the Soil Creek Beds

### Slow, Spread, & Sink

- Rainwater IS a resource
- Keep it in your landscape
- Create areas with shallow depressions & swales
- Use plants that tolerate both wet & dry conditions
- Include include drip irrigation
- Remove leaf build up



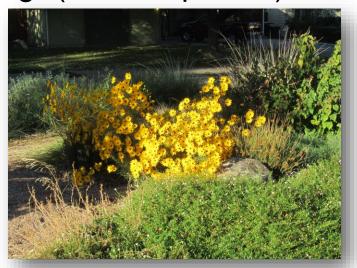


## Shape the Soil Rain Gardens

- Properly designed & constructed, rain gardens drain rapidly
- Water is present for only 1 to 3 days
- Water is not "standing" (no mosquitoes)



Soleil Tranquilli Tranquill Gardens



1" of rain from a 1,000 sq. ft. roof yields 623 gallons of fresh water Source: U.S. Geological Survey



# Soleil Tranquilli's Rain Garden



January



March



# Capture & Use Rainwater as a Resource

Swales, Contours, & Berms Garden on Eden Makeover



Before:
With lawn, used
over 110,000
gallons of water
per year

3,683 Sq. Ft.



## Swales, Contours, & Berms







## Swales, Contours, & Berms



After:
Uses *less than*25,000 gallons of water per year



### Sink Water with Materials

Decomposed Granite (D.G.) path







Flagstone with gravel joints



Concrete pavers & gravel

Steps of natural stone, gravel path



## Store It Rain Barrels









# Store It Cisterns







## WOW!



Photo courtesy San Francisco Water, Power, Sewer



City of Sacramento Department of Utilities



# Our Shade Tree Canopy!





## Plants Select Plants Based on...

- Climate & conditions
  - Sacramento region & Central Valley
  - Sunset Zones 7, 8, 9, 14
  - Sun/shade, Wind, Microclimates
- Tolerance of weather extremes







# Low-Water Use & Drought-Tolerant – *Not Equal*

### Drought Tolerant - Once established

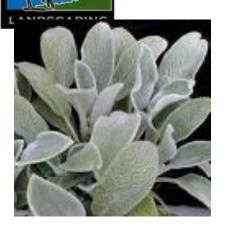
- Survive on seasonal rainfall
- Infrequent watering, or
- Repeated periods of dry conditions & recover from repeated wilting



### Low Water-Use Plants:

- A constant classification
- Plants require less supplemental water than others

## Characteristics of Drought-Tolerant & Many Low-Water Use Plants



Stachys byzantina Lamb's Ear



Rosmarinus officinalis
Rosemary



Salvia apiana
California White
Sage

Leaves - Retain moisture, color reduces sun exposure, "hairs", waxy surface, leathery, tiny, thick, leaf orientation

Roots – Deep taproot, fibrous



### Select Plants Based on...

Californica Poppy
Eschscholzia californica



- Plant's water & sun requirements
- Soil type/texture (mixture of sand, silt, & clay)
- Life cycle



Chaste Tree *Vitex agnus-castus* 



# Select the Right Plants

- Use diverse plant palette
  - California natives, &
  - Plants adapted to <u>local</u> climate & conditions
- Provide year-round food source, shelter, water to pollinators
- Disease resistant
  - Eliminate use of pesticides
- Resilient to extreme conditions





## Select California Natives



Lewis Mock Orange Philadelphus lewisii

### Why?

- Preserve & support habitat
- In harmony with natural plant communities
- Restore wildlife corridors
- Increase diversity unique to location
- Lower maintenance
  - If correctly designed & installed
- Can require 60% to 90% <u>less</u> water
- Year-round interest
  - Use 60-70% evergreen plants



## Select California Natives



Bringing Back the Natives
Garden Tour

### **Misconceptions**

- Native plants look "dead" much of the year
- Fire prone
- Difficult to grow & maintain
- Native gardens have one style = messy, unkept
- All natives are "low water-use plants" – NOT so

Embrace a New Aesthetic

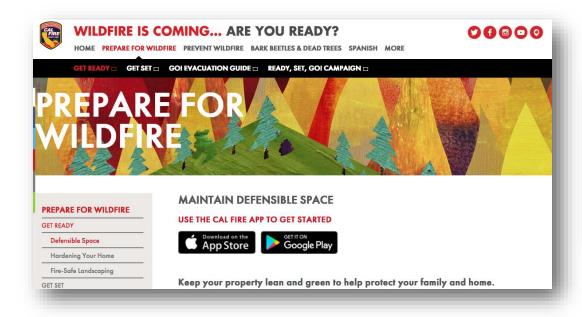


## Fire-Resilience Plant Selection

- Avoid plants that contain oils, resins, and waxes
  - Examples: Junipers, Eucalyptus
- Select plants with high moisture content, low growing, stems & leaves are not oily or waxy
- Avoid "plant lists", they're an aide
- "Lean, clean, & green"
  - No plant is "fire proof"
  - Keep hydrated
  - No dead wood or dry plant material
  - Spaced properly
- Hydration is key



## Plan for Fire





### For specific guidelines & regulations

- Refer to ReadyforWildfire.org, California Department of Forestry & Fire Protection
- Your county, local agencies, & organizations



### **Invasive Plants**



YES, PLANT
Purple Three-awn
Aristida purpurea
Photo:
Calscape.org



DO NOT PLANT Mexican Feather Grass Stipa tenuissima

☐ YES, PLANT Blonde Ambition Blue Grama Grass Bouteloua gracilis 'Blonde Ambition'





### Invasive Plants



DO NOT PLANT Scotch Broom Cytisus scoparius

⚠ YES, PLANT
Forsythia
Forsythia x intermedia
'Spring Glory'



☐ YES, PLANT
Golden Current
Ribes aureum
Photo: PlantMaster



Photo: Monrovia



# Plants MANY Choices

- Bark & Leaf Texture
  - Course, fine, rough, smooth, thick, thin
- Height, width, canopy
- Deciduous, evergreen
- Flower & fruit color
- Scent
  - Sweet, odiferous

Cercis occidentalis
Western Redbud







## MANY Choices











#### Year-Round Interest



Manzanita *Arctostaphylos* 



Grevillea





Redbud *Cercis* 



Rosemary Rosmarinus

Muhly *Muhlenbergia* 



#### Water-use Classifications





High
Moderate
Low
Very Low
None









## Defining "Established"

#### **General Rules of Thumb**

- Two to three times original size
- In ground for 1 to 1-1/2 years
- Trees Can take 3 to 5 years or more
- ALL plants need consistent soil moisture when installed
  - Even plants that can survive only on seasonal moisture once established

Prunus caroliniana 'Bright 'n Tight' Bright 'N Tight Carolina Laurel







# Plant Water-Use Classifications

- High Consistent soil moisture throughout the year, even once established
  - Examples: Lawns (Turf) (Green Sponges), water-loving plants (Hydrangeas), container plants
- Moderate Supplemental irrigation needed depending on season, location, rainfall, & adaptability of plant





# Plant Water-Use Classifications

- Low Adapted to Mediterranean-type climates & areaspecific CA natives
  - Rest during warm, dry summer months
  - Grow during the cool, moist winter months
  - Periodic additional summer water
  - May or may not be drought tolerant
- Very low Some California natives
  - Rely on seasonal rainfall
  - NO additional summer water (except winter drought)

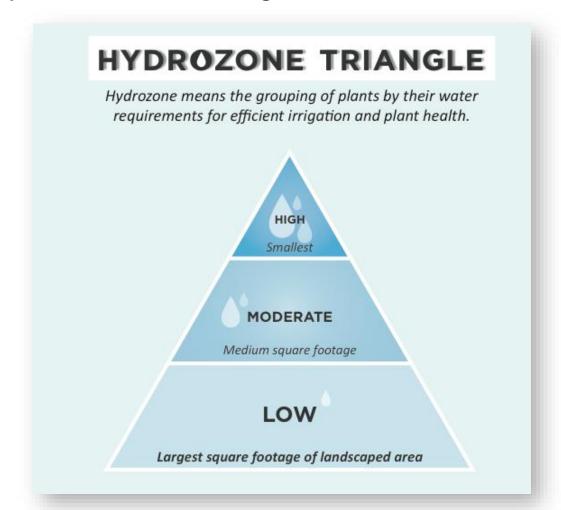


Heteromeles arbutifolia, Toyon



# Hydrozones for Plant Health & Efficient Use of Water

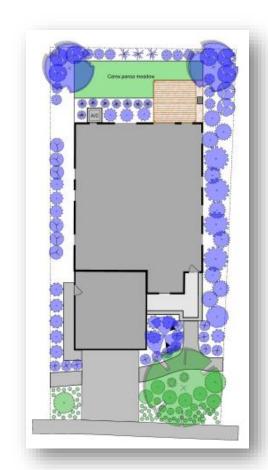
Hydrozone Challenge – All Low Water-use Plants





# Hydrozones & Efficient Use of Water

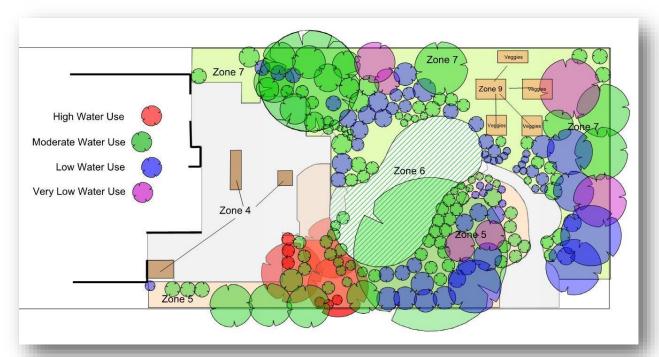
- Separate valves (when possible) for
  - Trees
  - Lawn
  - Edibles, fruit trees, etc.
  - Potted plants
  - When keeping mature plants
  - Plants that rely on seasonal rainfall & little, if any, supplemental water (once established)
- What happens in existing landscapes?





#### Mixed Water-use Zones

- Do NOT mix plants with different water-use categories in same zone / same valve
- Wastes water, requires increased care, & results in plant death



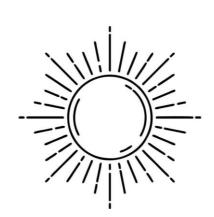
#### Incorrect Hydrozoning

Hydrozone plan Courtesy of Lori Palmquist, puddlestompers.com



#### Sun

- Determine direction site faces Orientation
  - North-facing, South, East, West
- Time of day
  - Morning sun, afternoon, all day
- Length of time exposed to sun
- Obstructions
  - Houses, trees, etc., block sun
- Intense heat
  - Next to street, reflective heat from walls
- Seasonal angle changes





# Example Plants Low Water – Full Sun



Arbutus 'Marina' Marina Madrone Up to 30' Tall / 30' Wide Tree



- Direct sun all day
- 10 hours or more
- Tough conditions



# Low Water – Full Sun to Part Shade

- Tolerate full sun & some afternoon shade
- 5 10 hours of direct sun



Hesperaloe parviflora
Coral Yucca
3-4' T / 3-4' Wide Shrub



Rosmarinus officinalis 'Mozart' Ed Carmen's Rosemary 3' Tall / 6' Wide Shrub



# Low Water – Full Sun to Part Shade



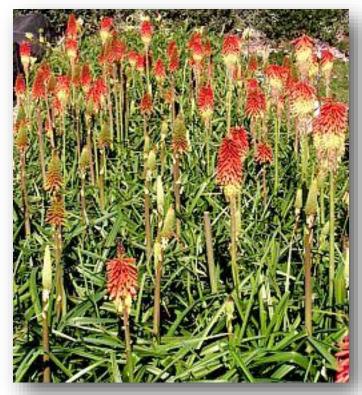


Salvia spathacea
Hummingbird Sage
1-2' Tall / 4'-5' Wide Perennial

Teucrium fruticans
Bush Germander
6-8' Tall / 12' Wide Shrub



# Low Water – Full Sun to Part Shade



Kniphofia 'Christmas Cheer' Christmas Cheer Poker Plant 3'-5' Tall / 3-5' Wide Perennial



Bouteloua gracilis
Blue Grama Grass
1-3' Tall / 1-3' Wide Perennial



#### Low Water – Part Shade

- Less than 5 hours of direct sun (mornings)
- Shade for half of day (afternoons)

Carpenteria californica 'Elizabeth' Bush Anemone 4'-6' Tall / 4-6' Wide Shrub





# Low Water - Part to Full Shade



Daphne odora 'Aureo-marginata' Variegated Winter Daphne 4-6' Tall / 4-6' Wide Shrub



Ribies malvaceum
Chaparral Currant
2-3' Tall / 3-4' Wide Shrub
Groundcover



#### Low Water - Shade



Helleborus argutifolius
Corsican Hellebore
2-3' Tall / 2-3' Wide Perennial



Heuchera 'Lillian's Pink' Lillian's Pink Coral Bells 1-1/2' Tall / 1' Wide Perennial



#### Let's Talk About Lawns



- Do you need grass? Then have it!
- Function, fits use
- Water it effectively & efficiently
- Use rotary- & precision-type nozzles
- NO runoff







#### Reduce Unused Lawn



Kathleen Olson – After

- Create "buffer zone" between lawn & impermeable materials
- Watering CA native plants
- Consider sprinkler with rotatory nozzles to mimic rain, a <u>brief</u> shower
- Keep in mind mulch absorbs water
- AND we're in a drought!
- Do you have rainwater stored?



## Lower Water Lawn Options

Delta Bluegrass 90/10 Tall fescue Festuca arundinacea, Poa pratensis, Blend



Photo: Delta Bluegrass



# Lower-water Lawn Options UC Verde Buffalograss

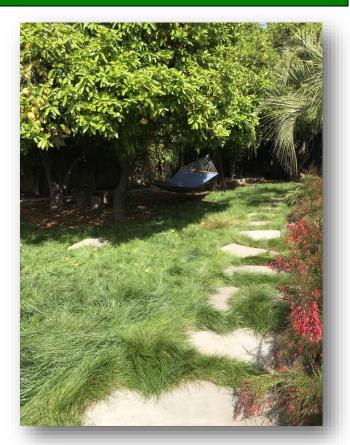


Photo: Florasource



## Lower Water Lawn Option

- Uses about 50% less water than traditional turf
- Full sun, partial shade tolerance
- Clumpy, not for sports activities
- CA native & non-native
- Fine leaf blade for softer texture
- Can be maintained as turf lawn or left unmoved for meadow-like appearance
- Useful for erosion control on slopes

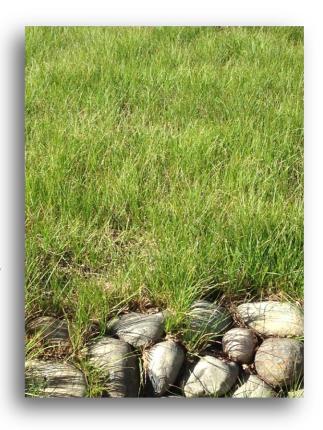


"No Mow" / "Mow Free"
Festuca idahoensis, Festuca
rubra, Festuca occidentalis, blend



## Lower Water Lawn Option

- Full sun, part shade
- Low-tolerance for foot traffic
- CA native, evergreen
- Spreads by underground stems
- Mow every 4-6 weeks encourages shoot growth



Just say NO to synthetic turf

CA Field Sedge Carex praegracilis



## Lower Water Groundcover Option

- Full sun evergreen
- Blooms light lavender-pink spring, summer, fall
- Dense, flat in full sun, taller & not as compact in part shade
- Spreads by runners
  - Need to contain
- Excellent erosion control & on slopes
- Attracts bees



Phyla (Lippia) nodiflora, Kurapia Photo: Delta Bluegrass



## Lower Water Groundcover Option



Phyla nodiflora, Kurapia, used as front yard lawn substitute Roxy Designs



# Lower Water Groundcover Option

- Full sun, part shade
- Evergreen
- Yellow blooms in summer
- Spreads by underground stems
- Other than weeding, maintenance free
- Tolerates light foot traffic



Dymondia margaretae



#### Lawn Alternatives & Substitutes



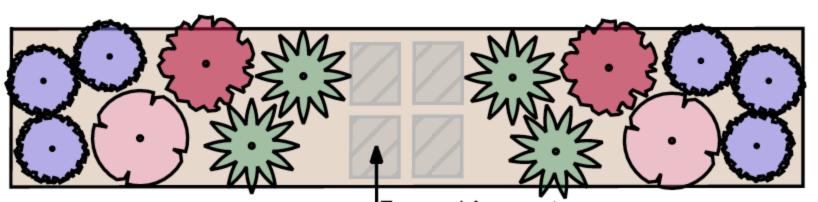
https://bewatersmart.info/lawn-options/



## Ditch the Strip

- Diversity of plants
- Year-round interest
- Drip instead of sprinklers
- Prevent that runoff!

California Native Plants
Low Water & Full Sun to Part Shade



Exposed Aggregate
Pre-cast Stepping Stones



#### **Pollinators**



#### Attract & Support

- Birds, Bees, Bats, Butterflies...
- They need us & we need them
- Landscapes are interconnected ecosystems of living creatures
- Provide habitat More than just "plants"
- Use local CA native & plants adapted to soil & climate
- Plants of varying heights for nesting & security



#### **Pollinators**





- Food Succession of bloom throughout the year
- Various flowers, sizes ,and colors
- Clumps of plants (not just onesies)
- Sunny locations
- WATER

#### Learn more at:

- CNPS Calscape
- Xerces Society
- Pollinator Gardens



## Spacing & Placing Plants

- Use plants that fit the space
- Easy care, less pruning
- Consider mature height & width
- Allow time for plants to get established & spread





Loropetalum, Fringe Flower



# Planting Distances From Distribution Lines 50 ft. 30 ft. 20 ft. Tall Zone Tree heights taller than 40 feet Tree heights 25 feet or less Tree heights 25 feet or less Underground Utilities Root Damage Zone

Pacific Gas & Electric pge.com

## Placing Trees

- When placing, look up, look down, & look out
- Deciduous trees on west & southwest side of house
- Consider solar panels, height
   & shade from tree
- Consider distance from structures, underground, & overhead utilities
- DO NOT top trees



## Going Against Nature

This Results in This







## Natural Shape Beautiful!





## Young to Mature

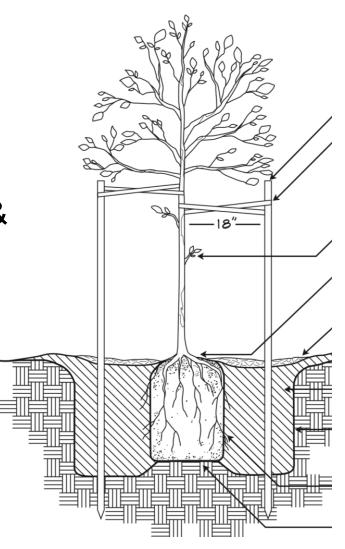






## Planting Trees Give them a Chance to Thrive

- Fall = Perfect time!~~ NOT Now ~~
- Before you dig, call U.S.A. 811
- Hole no deeper than root ball & twice as wide
- Fill hole with water
- Score sides of hole
- Check plant roots & loosen
- Root ball on <u>undisturbed</u> soil





## Planting Trees

#### Sacramento Tree Foundation

- Break up soil removed from hole
- Add worm castings for slow release of nutrients
- Fill hole with original soil, water as you fill
- Gently press soil around roots
- Top of root ball slightly above grade & no soil on it
- WATER ~ WATER ~ WATER
   BEFORE, DURING, & AFTER



# Stake Trees ONLY IF Needed

- Always remove nursery stake
- Stakes
  - Just tall enough to support
  - Don't interfere with canopy
  - In ground deep to be rigid
  - Outside root ball
- Flexible ties
  - Lowest point yet still supporting
  - Figure eight
  - Tack or tie to prevent sliding
- Stakes NOT permanent
  - Test, release, re-tie (?), REMOVE

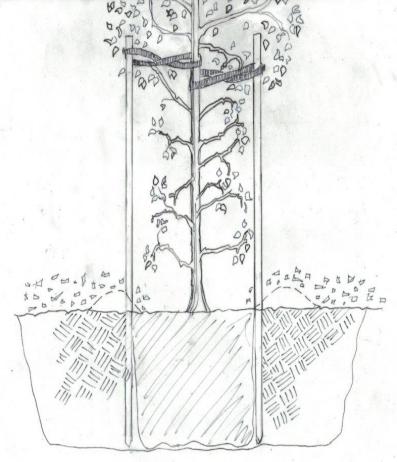


Diagram: Marcia Scott Marcia J. Scott Landscape Designs



### What is MULCH & Why Use It?

- Really... Any material spread over the soil surface
- But... organic materials best for soil & to <u>enhance</u> growth of plants & appearance of the landscape
- Who can list some benefits?







Use THIS THIS ♥

NOT



### **Mulch Mistakes**



#### **NO THANKS!**

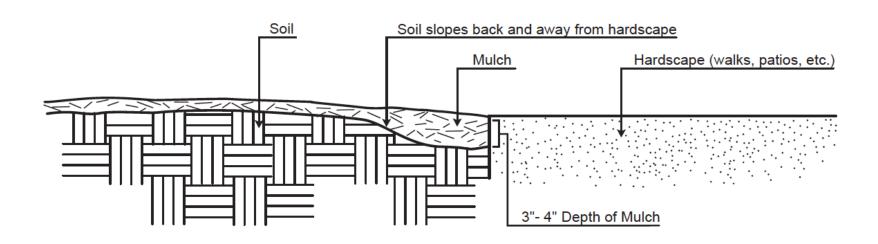
Please say NO to

- Landscape fabric
- Plastic
- Rocks, gravel
- Rubber



# Mulch Preparation & Application

#### MULCH DIAGRAM



Use soil excavated from hardscape edges to form mounds & contours

Diagram: Landscape Liaisons & EcoLandscape California



### Green (Living) Mulch = Plants



- Groundcover layer = Cover crops (e.g., clovers)
- Living mulch
   prevents water runoff
   & soil erosion,
   improves soil fertility
   & quality, suppresses
   weeds, promote
   plant diversity
- Reduce energy use



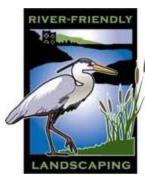
### Highly-efficient Irrigation

- Use weather-based irrigation controller with rain sensor
- Effective irrigation strategies deliver water in a widespread, uniform manner
  - Grid pattern using dripline tubing with built-in emitters

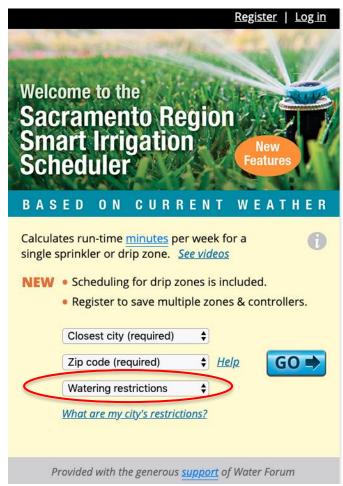


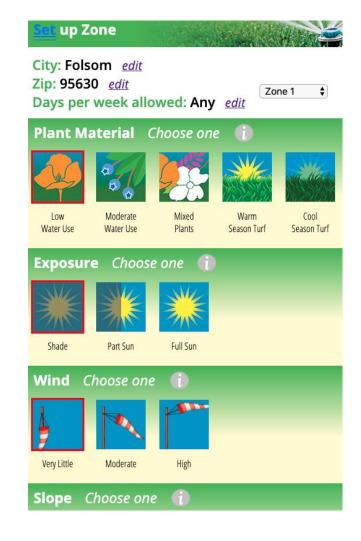


Design-Build Contractor Martin Carrion van Rinjn Landscape Symphonies



### BeyondTheDrought.com

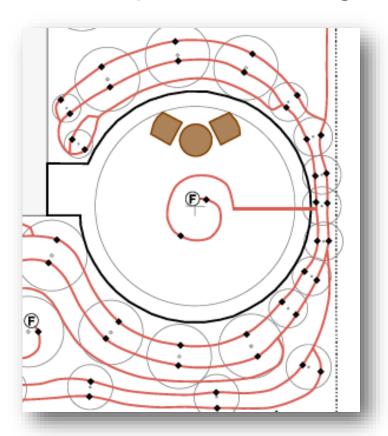


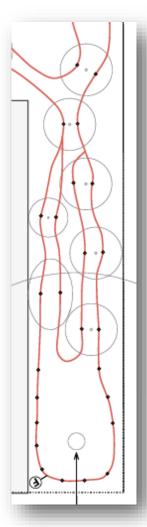




# Efficient Irrigation Strategies

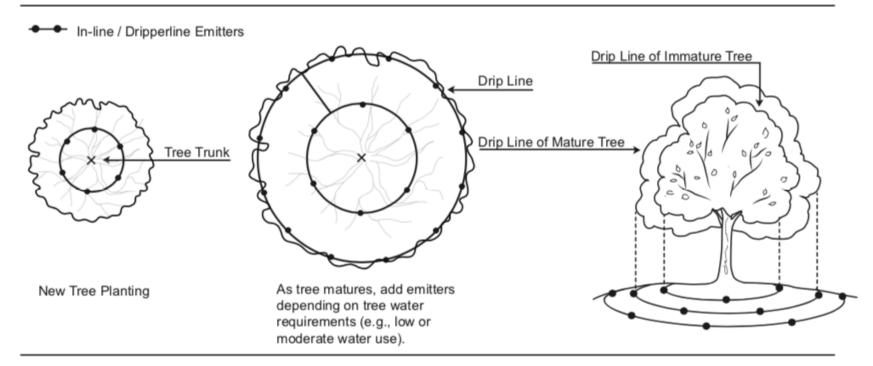
- Flowing, organic patterns
- Site-specific challenges







#### TREE EMITTERS - EXAMPLE PLACEMENT



NOTE: - The spacing and number of emitters are examples.

- Specific spacing and number of emitters will depend on plant size at installation, plant water requirements, soil type, and emitter flow rate.
- Emitters not in contact with trunk/base of plant
- As plant matures, adjust placement
- Depending on species, add or remove emitters
- Replacing single plant, hand water
- Entire root zone receives water



### Establish Plants for Resilience

- Newly installed plants
  - Must have water on root ball & existing soil
  - Bridges interface between both soil types
  - Encourages roots to extend into existing soil
- As tree/plant matures & based on water needs of species, extend intervals between watering to allow soil

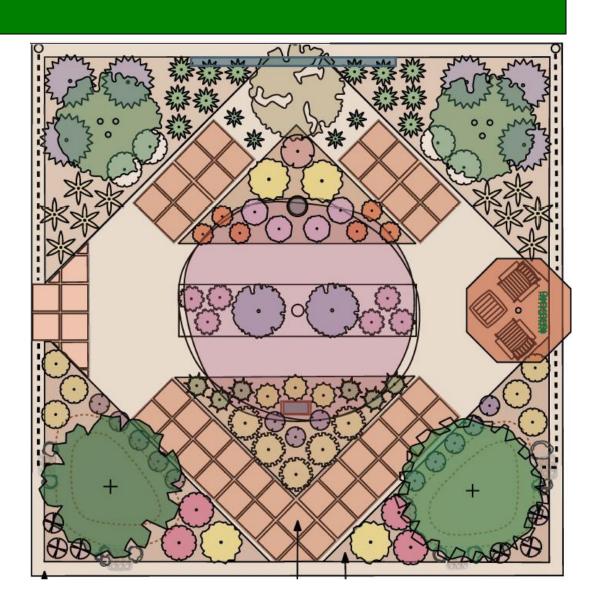
to dry down





### Bringing it All Together

- Water efficient
- Hydrozones
- Shade & fruit trees
- CA natives
- Green islands
- Rain garden
- Fire wise
- Pollinator friendly





## Caring for Your Garden in Summer

- Call for a Water-Wise House Call
- Turn on irrigation system weekly
- Look & listen for leaks
- Make repairs ASAP
- Adjust misdirected sprinklers
- Adjust emitter placement if needed
- Check soil moisture before watering





## Caring for Your Garden in Summer

- Monitor & manage pests & diseases
  - UC Integrated Pest Management (IPM)
- Look for signs of plant stress
- Investigate
- Hand pull weeds
- Sprinkle worm castings around base of plants
- Replenish mulch, maintain 3 to 4-inch layer
  - NOT in contact with base of plants
- Lawns Use mulching mower
- Let grass grow taller Who knows why?





## Caring for Your Garden in Summer

- NOT the time to plant ornamentals
- NOT time to prune, unless
  - Dead, damaged, diseased, crossing branches
  - Removing spent blooms to encourage repeat bloom
  - Some exceptions with natives
- ALWAYS clean pruning tools
- Slowly & deeply water trees
  - Sacramento Tree Foundation
  - Trees Are Good by <u>ISA</u>
- Provide water for pollinators...







Search Plants

## Resources Water-use Classifications

## WUCOLS V Water Use Classification of Landscape Species

#### Plant Search Database If you know exactly which plant you are interested in, you may search for it by name (partial See WUCOLS List for All Regions names are OK, too). Otherwise, consider searching by plant type and/or water use. City Search for a city: Folsom Find a city on the map **Plant Name** Plant Type ☐ Gc (Ground Cover) Common Name or Botanical Name P (Perennial) S (Shrub) Water Use T (Tree) Very Low Low □ Ba (Bamboo) ☐ Moderate/Medium □ Bu (Bulb) ☐ High ☐ G (Ornamental Grass) Looking for Turf Grass? ☐ Unknown Pm (Palm and Cycad) Not Appropriate for this Region ☐ Su (Succulent) □ N (California Native) ☐ A (Arboretum All-star)

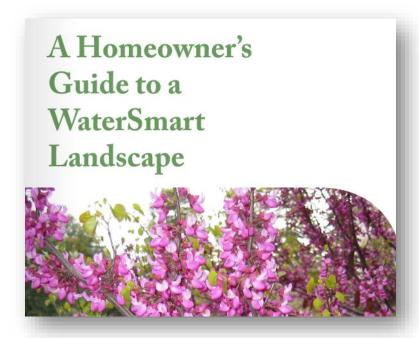
https://ucanr.edu/sites/WUCOLS/Plant\_Search/



# Resources BeWaterSmart.info









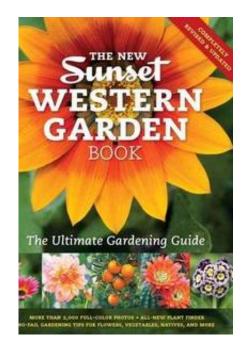
HOME GARDENS PLANTS MY LIST RESOURCES WATERING GUIDE

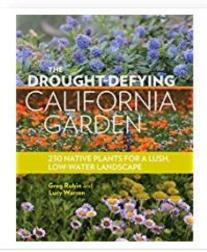


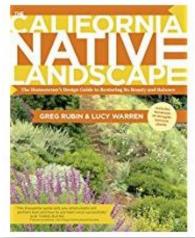
#### BeWaterSmart.info



### Resources







CalScape.org



# Resources roseville.ca.us/plantlist

#### WaterSmart Plant List for the Sacramento Region

- Uses & Benefits
- Water-use classifications
- More California native plants
- Common names linked to online photos & more

#### WaterSmart Plant List for the Sacramento Region Very Low, Low, and Moderate Water-Use Perennials

Genus	Species	Variety / Cultivar / Hybrid	Common Name	Water Use	Plant Type	Exposure	Climate Zone	Mature Size Tall (T) / Wide (W)	Plant Coverage Value (Sq. Ft.)	Bloom Color / Season	Ø	•	*	*		ā	K
Perennials											Uses / Benefits						
					Evergreen to Semi-												
Achillea	filipendulina		Fernleaf Yarrow	L	evergreen	FS	A1-A3, 1-24	4-5' T / 1-3' W	3	Yellow / Spring-Fall	Y		Y			Y	Y
A - L :!! -		b. b. d.d.	V		0	F0/D0	44-04	4 017 /4 0114		White, Lavender, Salmon / Spring,	v		v			V	V
Achillea		hybrids	Yarrow	L	Semi-evergreen	FS/PS	1 to 24	1-2' T / 1-3' W	3	Summer, Fall	Y		Y		<u> </u>	Y	Y
Achillea	millefolium	'Island Pink'	Island Pink Yarrow	L	Semi-evergreen	FS/PS	1 to 24	1-2' T / 1-3' W	3	Pink / Spring, Summer, Fall	Υ	Υ	Υ	Y		Υ	Υ
Achillea	millefolium	'Moonshine'	Moonshine Yarrow		Semi-evergreen	FS/PS	1 to 24	2' T / 1-3' W	3	Yellow / Spring, Summer, Fall	v		_			v	v

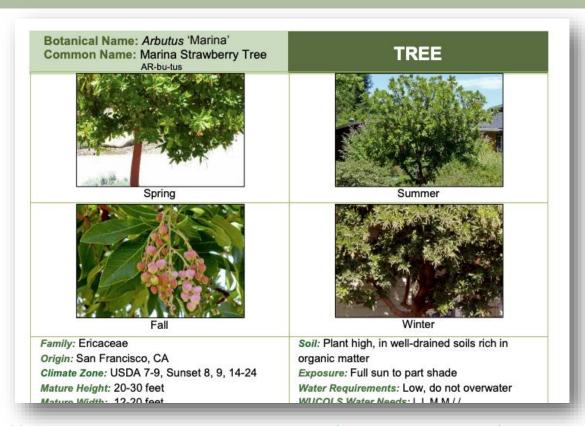




#### Four Complete Landscape & **Irrigation Plans**

- 75 Plant Profiles
- Irrigation Equipment
- Guided Verbal Tours of Plans
- Interactive Designs: See plants, features, & learn about water-saving irrigation equipment and practices

Download Learn



https://puddle-stompers.com/waterwonk/new-ca/

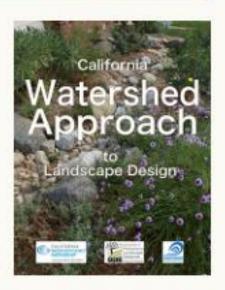


#### Resources



#### Our Newest Handbook

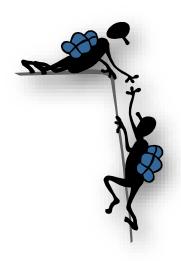
Download California
Watershed Approach
to Landscape Design,
which was made
possible through a
collaboration with
Green Gardens Group
(G3), California Water
Efficiency Partnership
(CalWEP), and
Surfrider Foundation.



Association of Professional Landscape Designers California Chapter ~~ apldca.org



### Who Can Assist you?



- Landscape Designers <a href="https://apldca.org/">https://apldca.org/</a>
- California Landscape Contractors Association <a href="https://clca.org">https://clca.org</a>
- ReScape <a href="https://www.rescapeca.org">https://www.rescapeca.org</a>
- UC Master Gardeners <a href="https://mg.ucanr.edu">https://mg.ucanr.edu</a>
- Your water provider!



## Acts of Kindness -- Give Your Garden Some Love









Soleil Tranquilli's Garden

Cheryl Buckwalter
Landscape Liaisons
landscapeliaisons@gmail.com

All Rights Reserved