



RightScape Workshop Series

The Right Plants

Juan Garcia
Water Efficiency Landscape Specialist
Irvine Ranch Water District



Agenda

Watershed Protection

Considerations When Selecting Plants

- Plant Characteristics

- Exposures

- Soil Requirements

- Climate Appropriate Plants

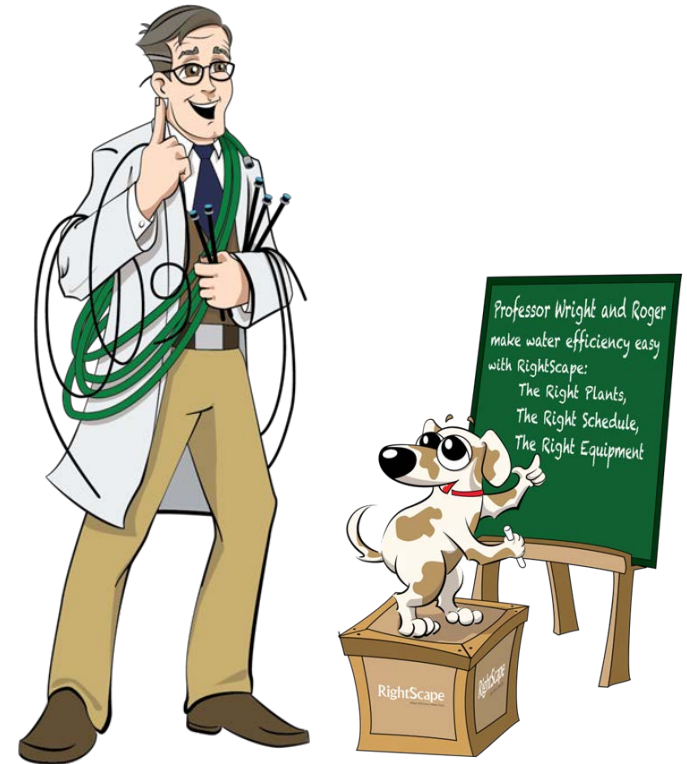
- Plant Water Requirements

Transform Your Landscape

Turf Removal Before & After's

Beginning to End

Closing



RightScape™

Water Efficiency Made Easy

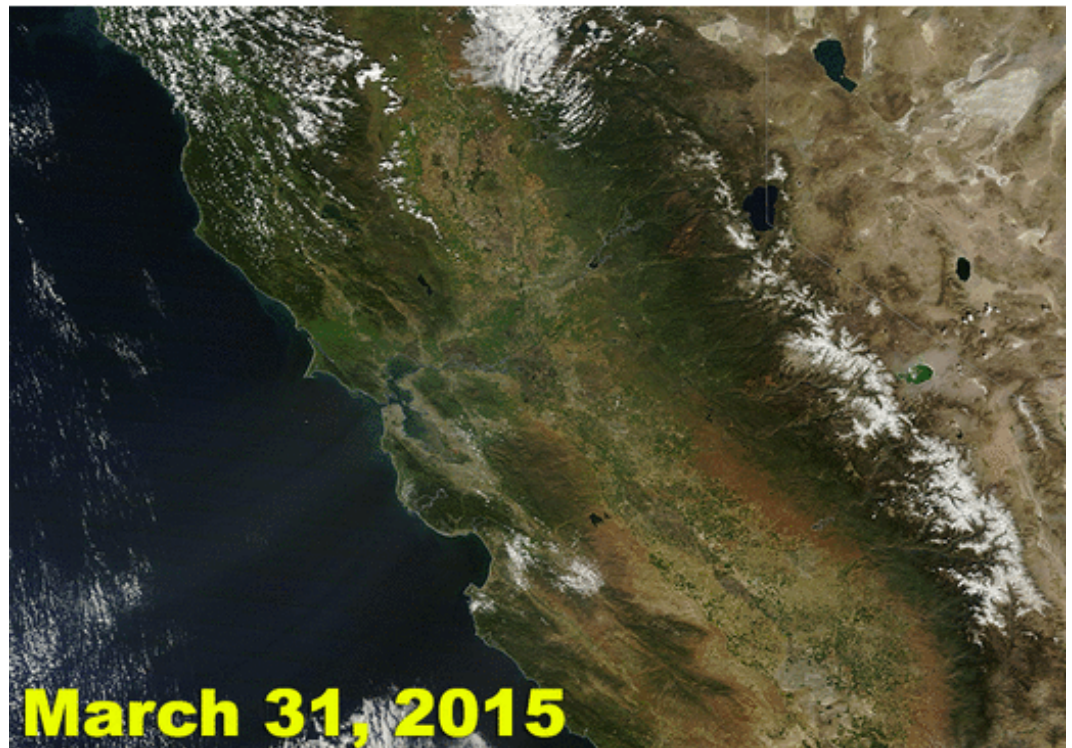
California Drought: A Statewide Issue

Governor declares a drought in California

Asking everyone to conserve 25 percent - immediately

The drought is affecting all parts of the state

Snowpack 5% of historical average (April 2015)



California Drought: A Statewide Issue

- Worst Drought in State History
- 2013- Driest Year on Record
- Three Straight Dry Winters
- 2015- Fourth Year of Drought



Folsom Lake - July 20, 2011



Folsom Lake - January 16, 2014

California Drought: A Statewide Issue

- Record Breaking Heat in 2014
- Water Storage Levels Dropping
- Saving Water is Urgent



Newport Bay Watershed

Area/Basin Where Water Collects

Rain Water

Irrigation Water!!!

Drains into bay

Protect our watershed



Considerations When Selecting Plants

Plant Characteristics

- Evergreen vs. Deciduous
- Trees, Shrubs, Ground Covers
- Perennials, Annuals, Bi-Annuals
- Form & Structure

Exposures

- Full Sun, Part Shade, Shade

Soil Requirements

- Clay Tolerant, Loam, Sandy
- Well Drained

Climate Appropriate Plants

Plant Water Requirements

- High, Moderate, Low





Plant Characteristics



Evergreen vs. Deciduous



Trees, Shrubs, Groundcovers



Perennials, Annuals, Biennials



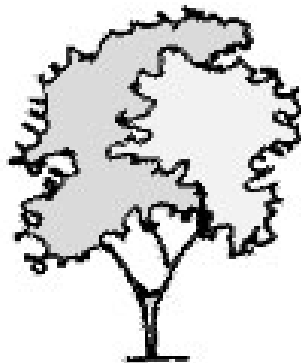
Plant Forms



Pyramidal



Round



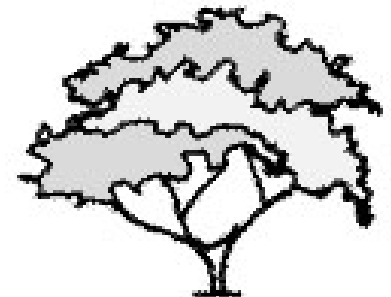
Columnar



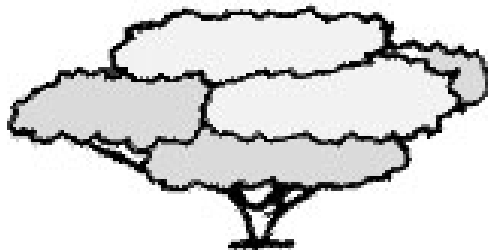
Weeping



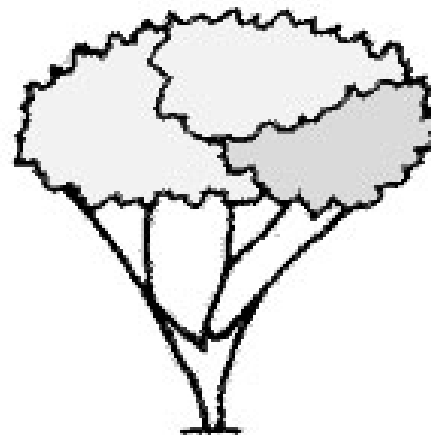
Broad



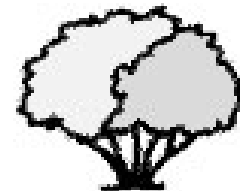
Oval



Layered



Vase



Shrubby

Plant Forms



Growth Habits

Roots!



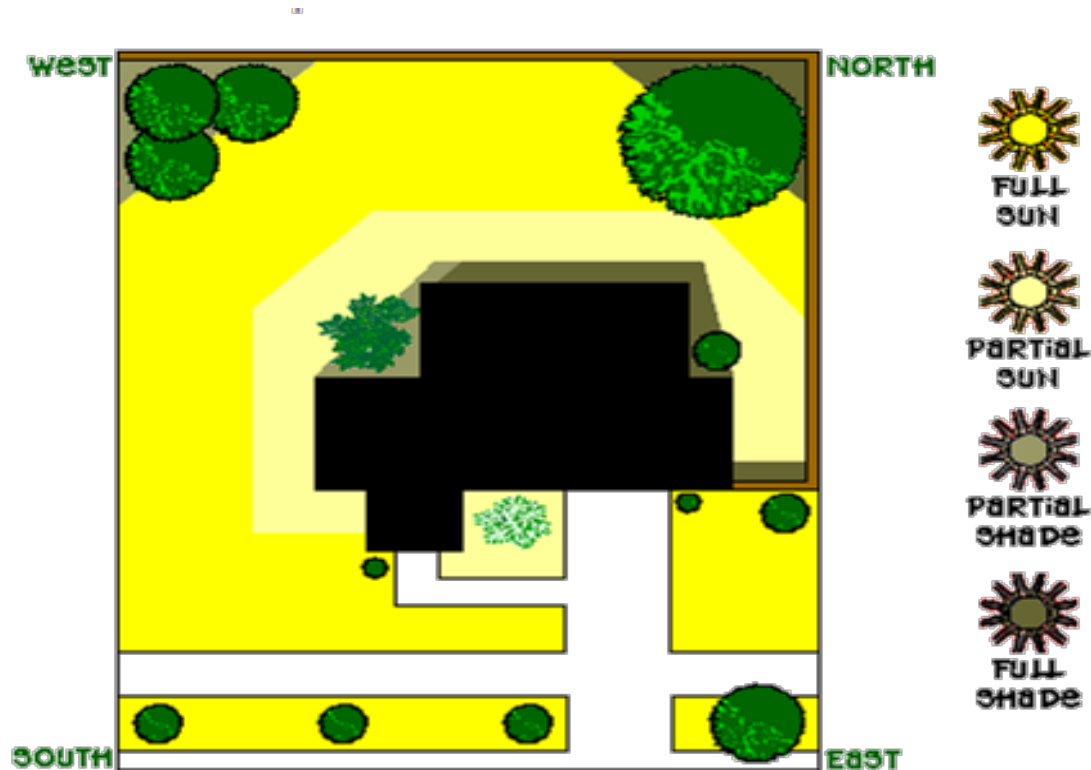


Exposure



Exposure

The amount of sun a plant is exposed to greatly affects its development and survival.



Exposure

Full Sun: At least 6 full hours of direct sunlight. Many sun lovers enjoy more than 6 hours per day, but need regular water to endure the heat.



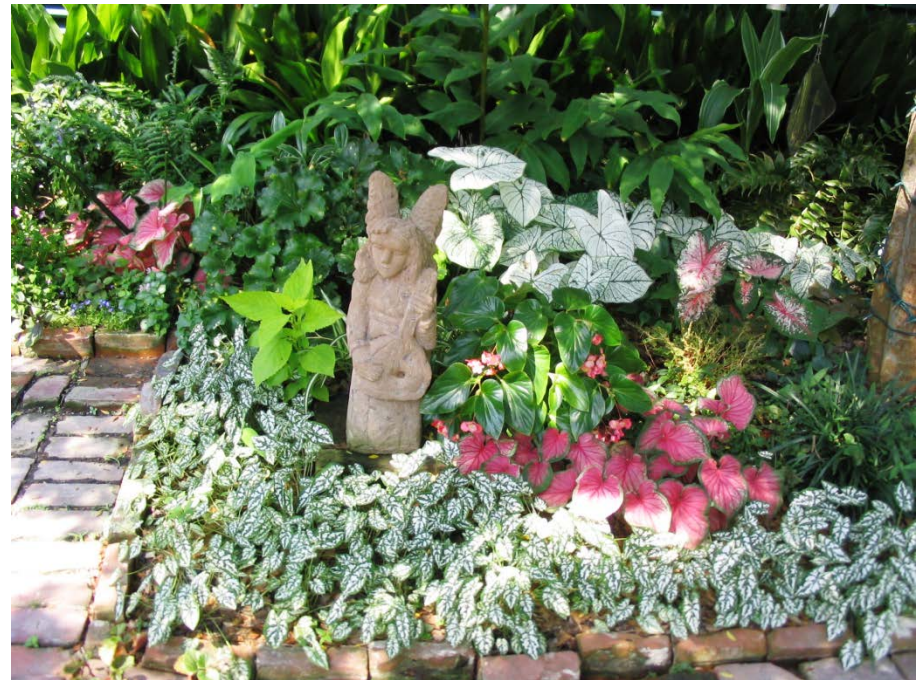
Exposure

Partial Sun: 3 - 6 hours of sun each day, preferably in the morning and early afternoon; area that gets closer to 6 hours of sun.



Exposure

Partial Shade: 3 - 6 hours of sun each day, preferably in the morning and early afternoon with some relief from the intense afternoon sun, either from shade provided by a nearby tree or planting it on the east side of a building.



Exposure

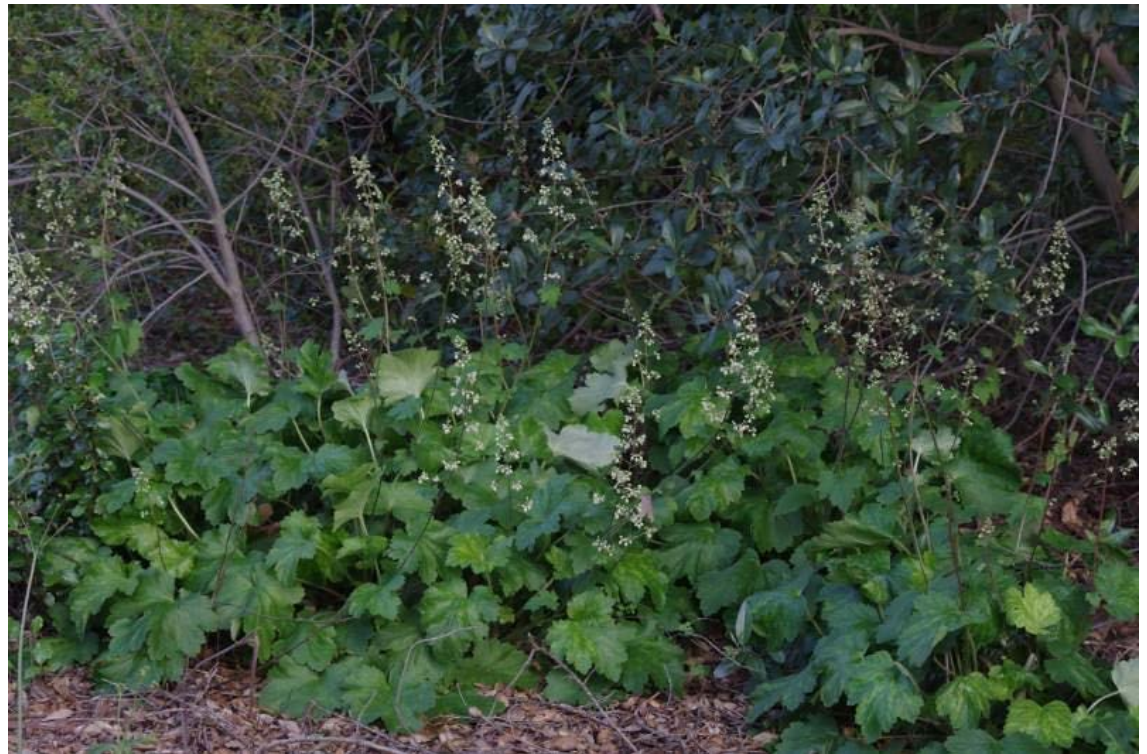
Dappled Sun/Filtered Light: Similar to partial shade. Sun that makes it way through canopies, bush branches, fences slats, pergola, etc. Great for underlying plants.



Exposure

Shade: Less than 3 hours of direct sunlight each day, morning preferred. Filtered sunlight during the rest of the day.

Full shade: No direct sun exposure, but may receive bright, indirect light.





Soil Requirements



Plant & Soils

Manage what we have & build them up

Most plants thrive in well drained soil...

What's our soils like in our area?

What do CA native plants require?



Maintain a Healthy Soil

Healthy soils have beneficial organisms from earthworms, insects, bacteria, fungi , microorganisms, etc.

They help break down nutrients and make them readily available

They help aerate soils

By building a healthy soil, overtime you will have little need for fertilizers



Ca Native Plants and Soil

Your soil is good enough

Don't amend your soil

Know what you are planting

Plant by plant community:

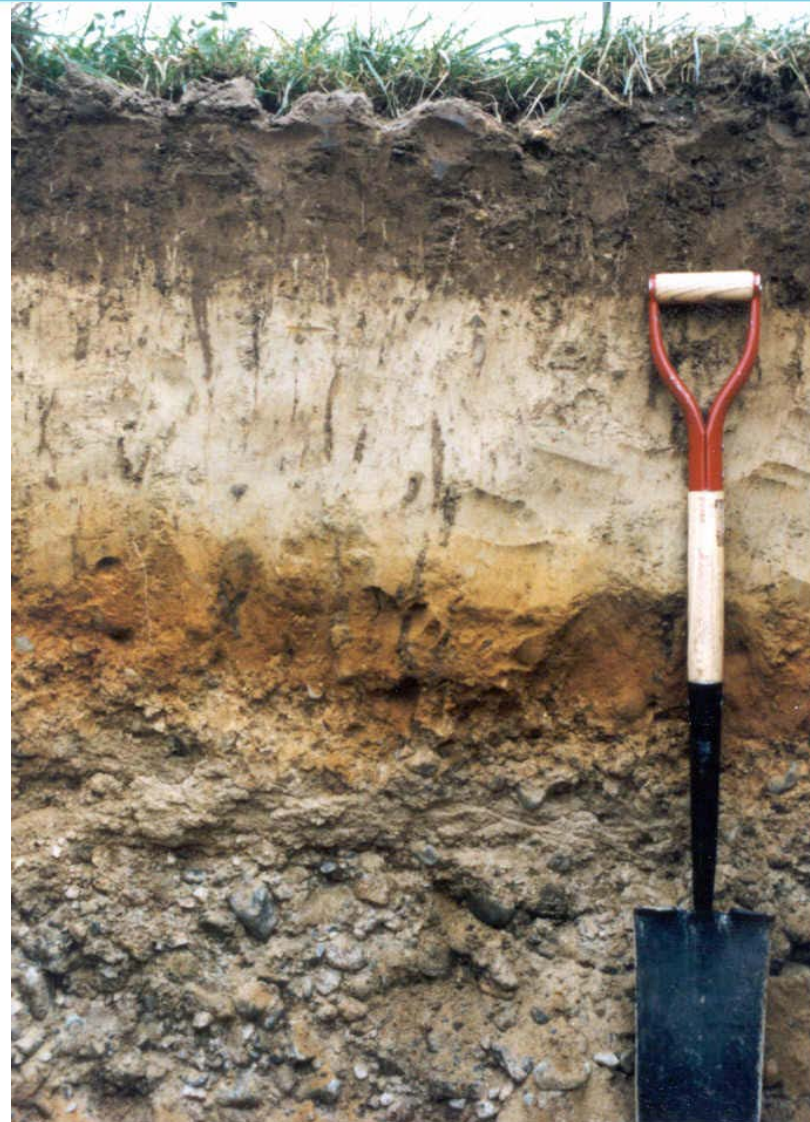
- Coastal Sage Scrub

Our areas have very diverse soils

- Acidic sand on hard pan

- Alkaline clays

- Blends



Plants and Soil

MULCH, MULCH, MULCH!!!

All plants and soil will benefit

- Retain soil moisture

- Erosion control

- Helps control weeds

- Beneficial insects and earthworms will thrive

- It will break down and become part of your soil





Climate Appropriate Plants



The Right Plants for Our Climate

There is a diversity of climate appropriate plants available. California native plants require different amounts of water, soil conditions, and landscape care throughout the year compared to non-native drought tolerant plants.



So. CA Mediterranean Climate

Plant climate zone 22-24

Coastal Edge and Valleys

Dominated by ocean influences

Warm summer temperatures

Growing seasons can last up to 12 months

Modest winter precipitation

Mild winters

Occasional frosts occur

Varying microclimates



The Right Plants

Coastal Sage Scrub: Irvine's & the surrounding cities CA native plant community

Plants adapted to our conditions

Similarities & requirements

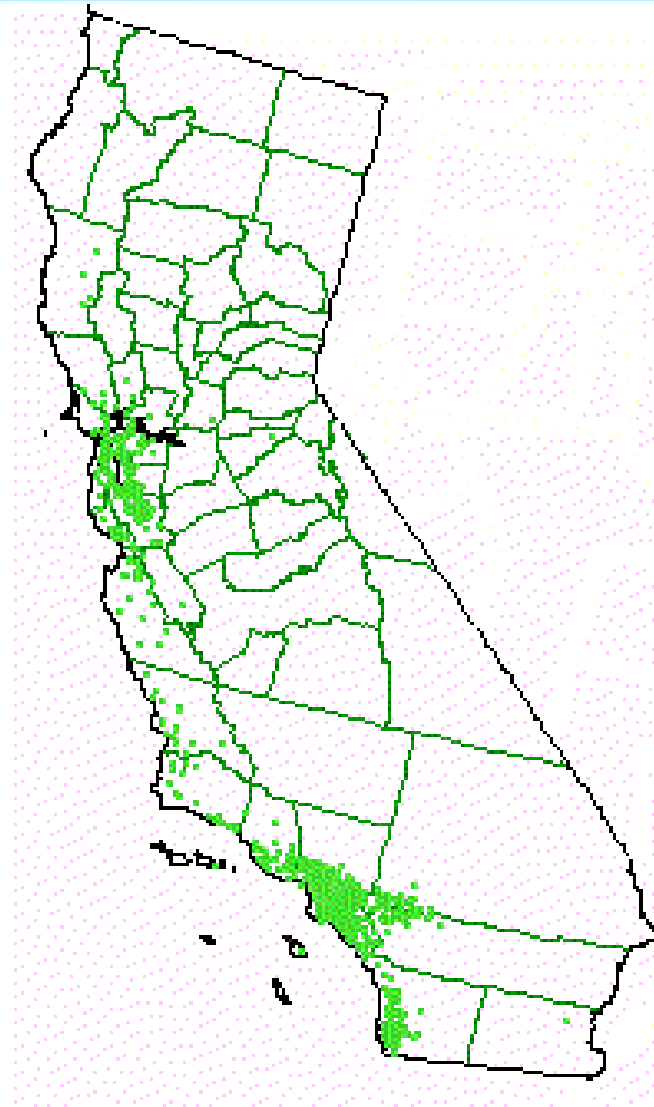
- Growth characteristics

- Temperature

- Water

- Sun

- Soil



Local CA Native Plants

CA native plants have adapted to our local climate
We can create habitats for birds, insects, etc.

Plant characteristics

Silver/grey in color

Small leaves

Leather leaves/waxy



The Right Plants

California native plants

They require little or no water once established

Plant in late fall through winter

No fertilizers needed

No pesticides needed

Summer Dormant



The Right Plants

California native plants



Sunset Manzanita



Island Pink Yarrow

The Right Plants – Succulents

California native succulents



Dudleyas, Live for Evers



Sedum, Stonecrop

The Right Plants

Non-native drought tolerant plants

They are moderate water users

They need summer water

Easy to adapt



The Right Plants

Non-native drought tolerant plants



Coprosma X kirkii



Royal Beard Tongue

The Right Plants – Succulents

Non-native succulents



Aloe Vera



Euphorbia, Fire Sticks

Plant & Cultural Practices Info

Reference Materials & Sites

IRWD plant data base - www.rightscaperesources.com

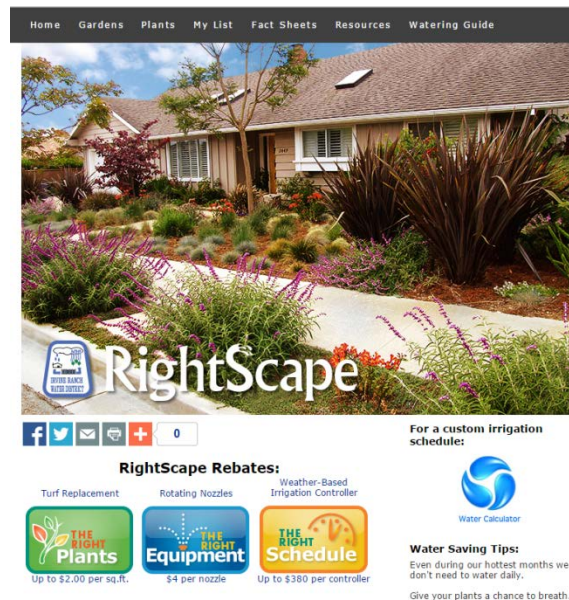
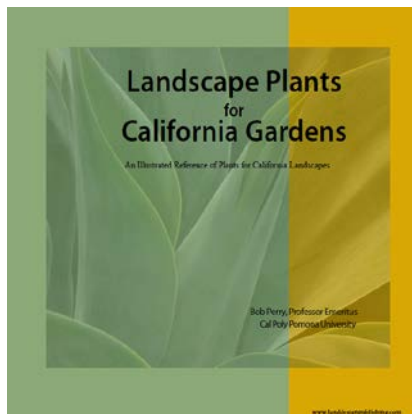
Landscape Plants for California Gardens

Sunset Western Garden Book

Nursery Websites

Plant labels

WUCOLS



Cultural Practices

Essential for long-term health of plants

- Select a good planting site
- Practice proper planting methods
- Proper fertilization (Non CA Natives)
- Proper watering practices

Water-stress & over-fertilization

Plants are more susceptible to insects and disease

Leads back to appropriate plant selection



Pruning

Pruning should not substitute the good selection of plants

Pruning begins at planting time

Prune to promote plant health

Follow the 3 D's – Remove; dead, damaged, & disease

Remove branches that rub together

Remove branch stubs

Prune to maintain plants

Encouraging flower & fruit development

Desired plant or garden form

Avoid sheering

For safety



Pest & Disease Management

Prevention is a must

- Cultural practices
- Remove sick plants
- Weed control
- Clean garden tools

Properly identify pest or disease

Is it Biotic (living) or Abiotic (non-living) elements causing the issues?

Chewing, sucking, or piercing insects

Bacteria, fungal, viral

Pets, vermin

Mechanical

Watering

Climate



Invasive Plants

They are aggressive, fast growing, and over take areas

Invasive Plants-, CA Native Plant Society, UC IPM

Cal-IPC - California Invasive Plant Council

Invasive



Periwinkle

Alternative



Wood Strawberry



Plant Water Requirements



Plant Water Loss

ETo Evapotranspiration – Measurement of the amount of water that is lost

Through the soil and plants

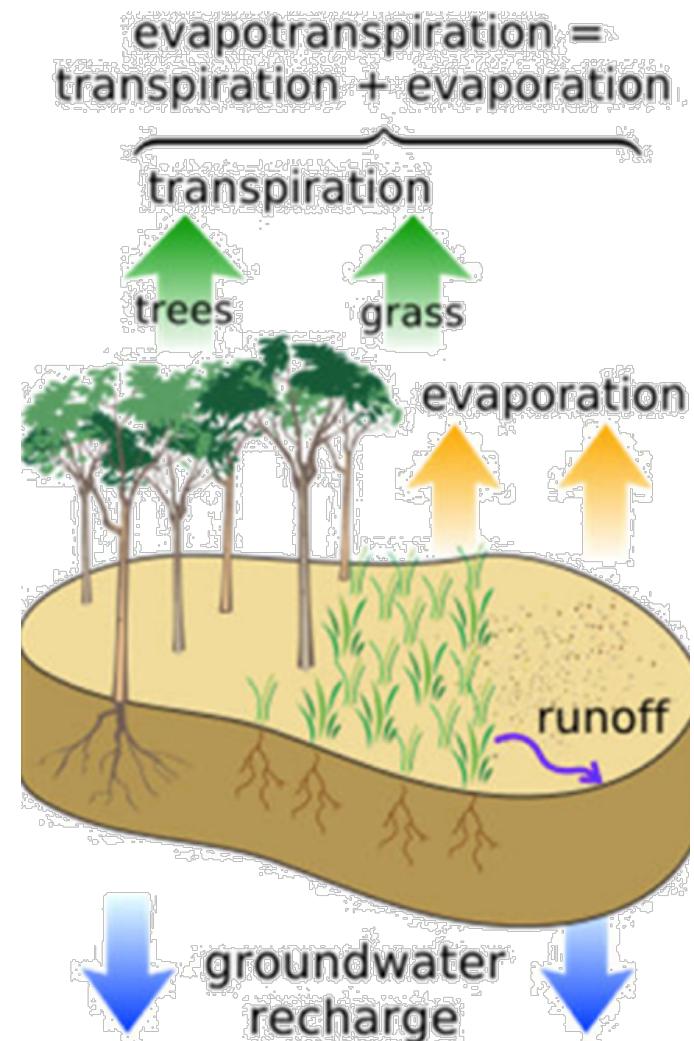
On top of the soil and plants

ET or water loss is measured in inches

Compare to water added

Rain is measured in inches

Irrigation is measured in inches



Plant Water Need

Plants water requirements differ

A plant's water need can be measured using its Kc value (plant factor)

WUCOLS plant factors

Category	Abbreviation	Percentage Of ETo	Plant Factor
High	H	70-90	$K_c = 0.7 - 0.9$
Moderate	M	40-60	$K_c = 0.4 - 0.6$
Low	L	10-30	$K_c = 0.1 - 0.3$
Very Low	VL	< 10	$K_c = < 0.1$

High ET



Mod ET



Low ET



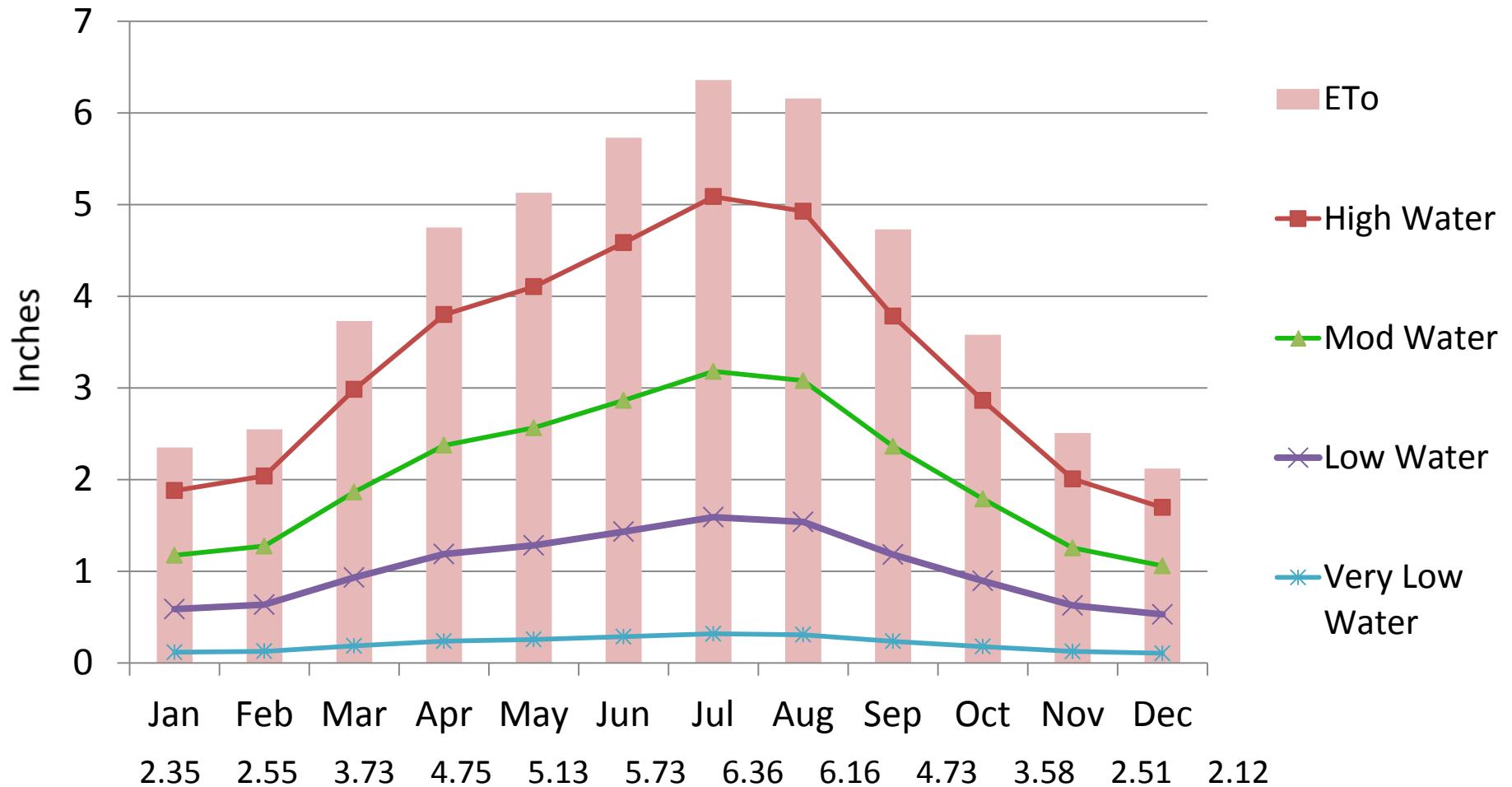
Very Low ET



WUCOLS IV

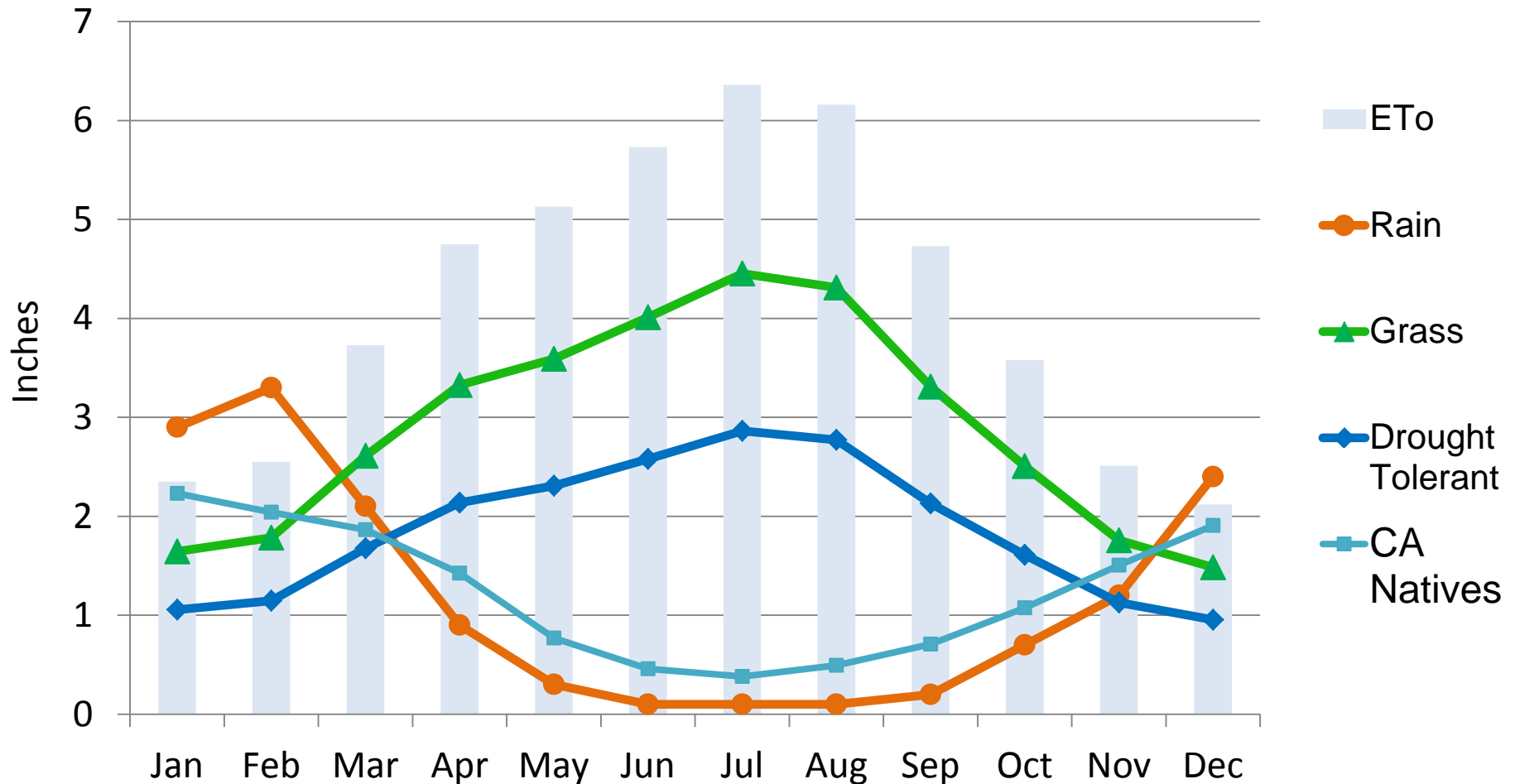
Water Use Classification of Landscape Species

Plants Seasonal Water Requirements



Plants Seasonal Water Requirements

CA Native Plants vs. Non-native Drought Tolerant Plants



Hydrozoning

Hydrozoning Principles

Inherent limitation of which plants can be grouped together

Plant types

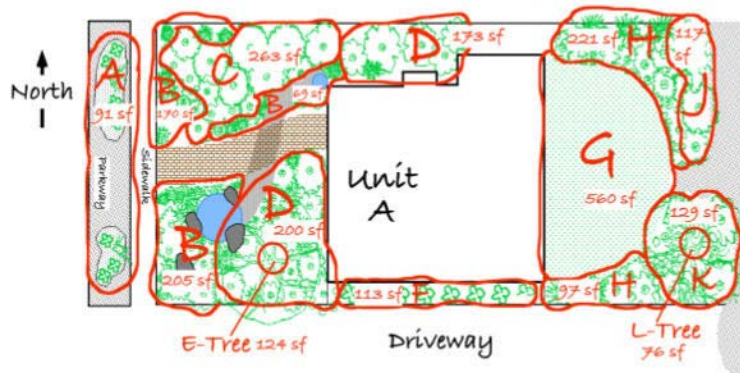
Water requirement

Sun exposure

Soil requirements

Growth Rate

SAMPLE HYDROZONE PLAN





Transform Your Landscape



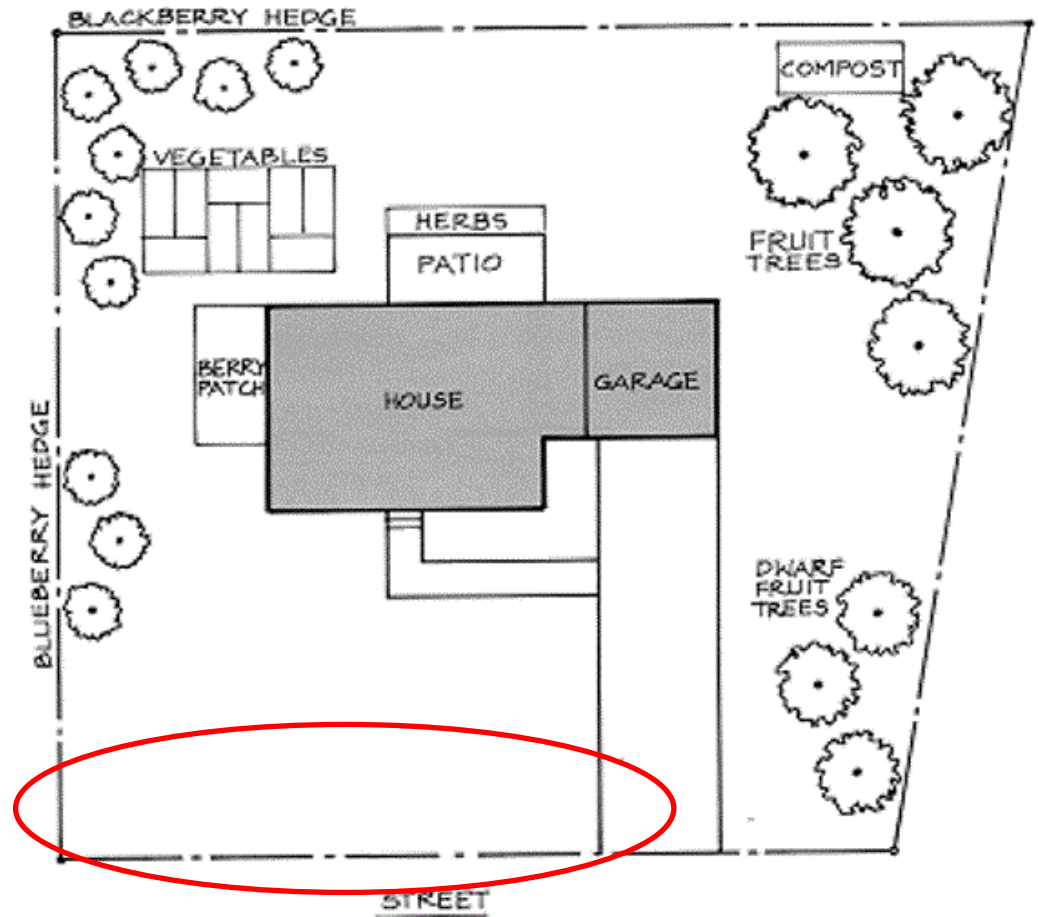
The Water Efficient Landscape

Where to start

Start with a small area

Hardscape vs. plants

Patience



Reduce Your Landscapes Water Needs

Consider reducing or eliminating unused areas of lawn

Convert to climate appropriate plants

CA native & non-native drought tolerant plants

More decorative permeable hardscapes

Water capture (bioswales)



The Thirsty Landscape

Grass – The highest water use plant
Every 1000 ft² of grass



The Water Conscious Landscape

Convert to Medium Water Use Plants
Every 1000 ft² of plants



The RightScape

Convert to Low Water Use Plants
Every 1000 ft² of plants



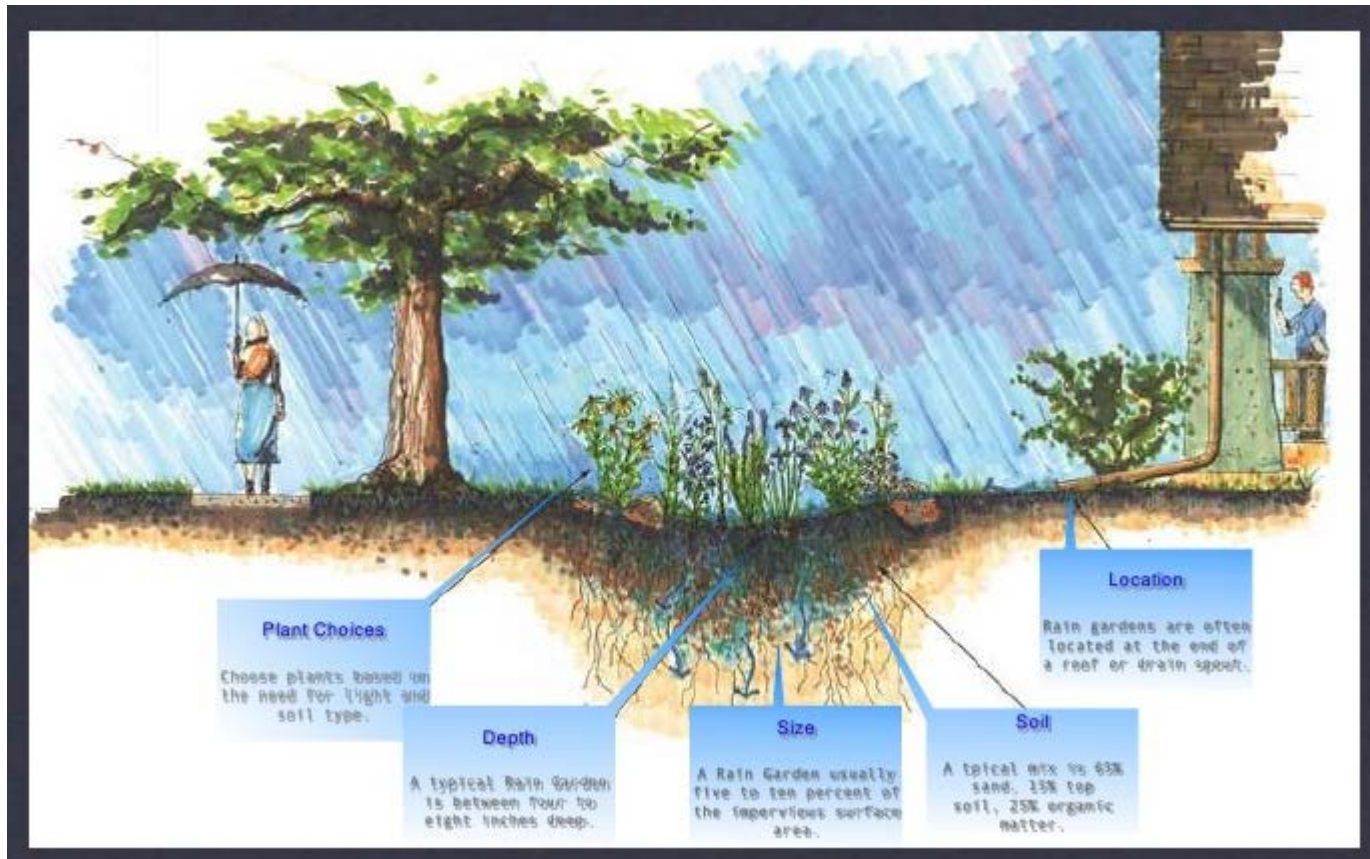


Landscape Design Features

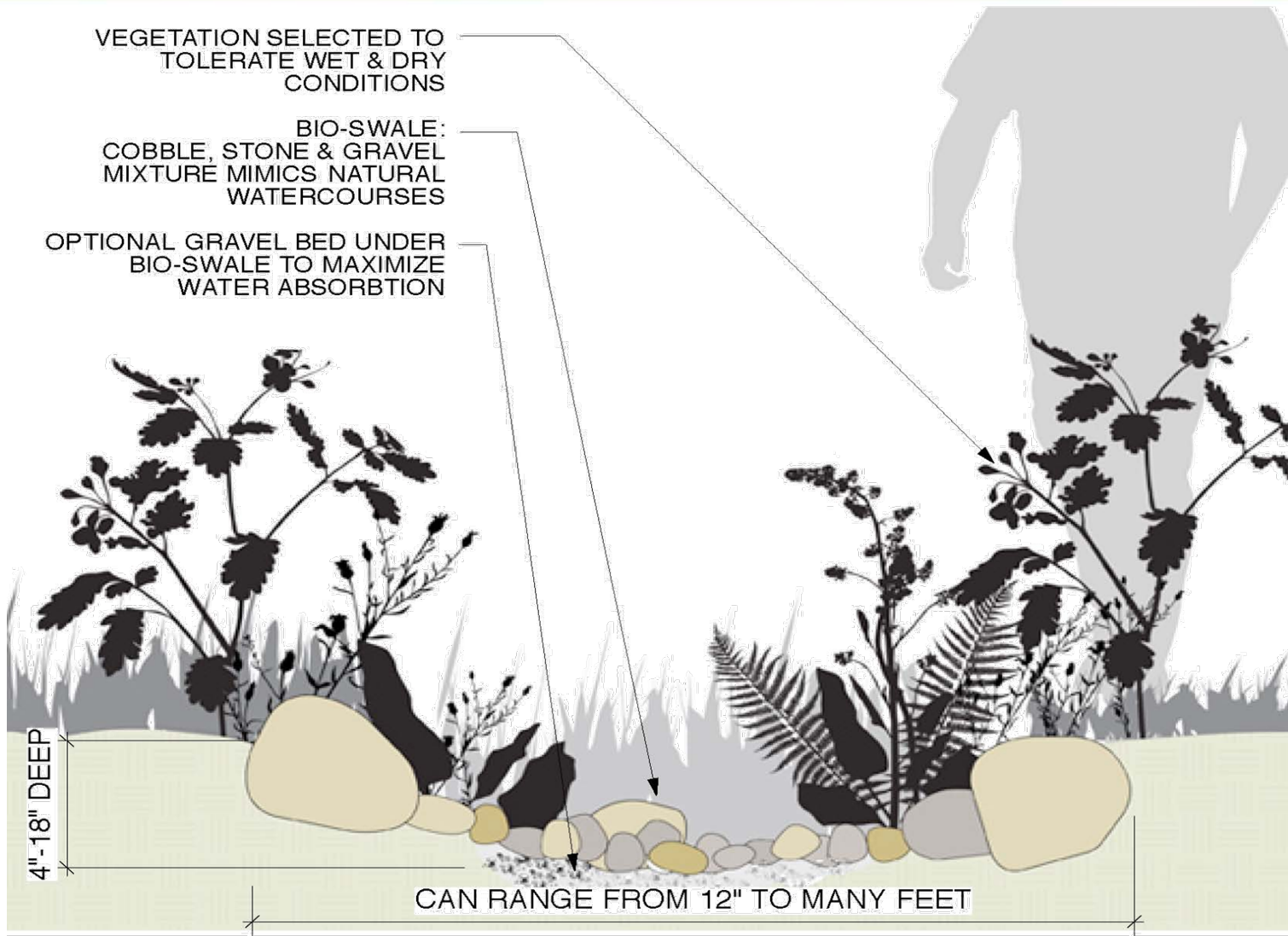


Bioswales & Rain Gardens

Rain gardens and bioswales are simple landscaping features used to slow, collect, infiltrate, and filter stormwater.



Bioswales Design



Bio-Swales – Dry Creeks



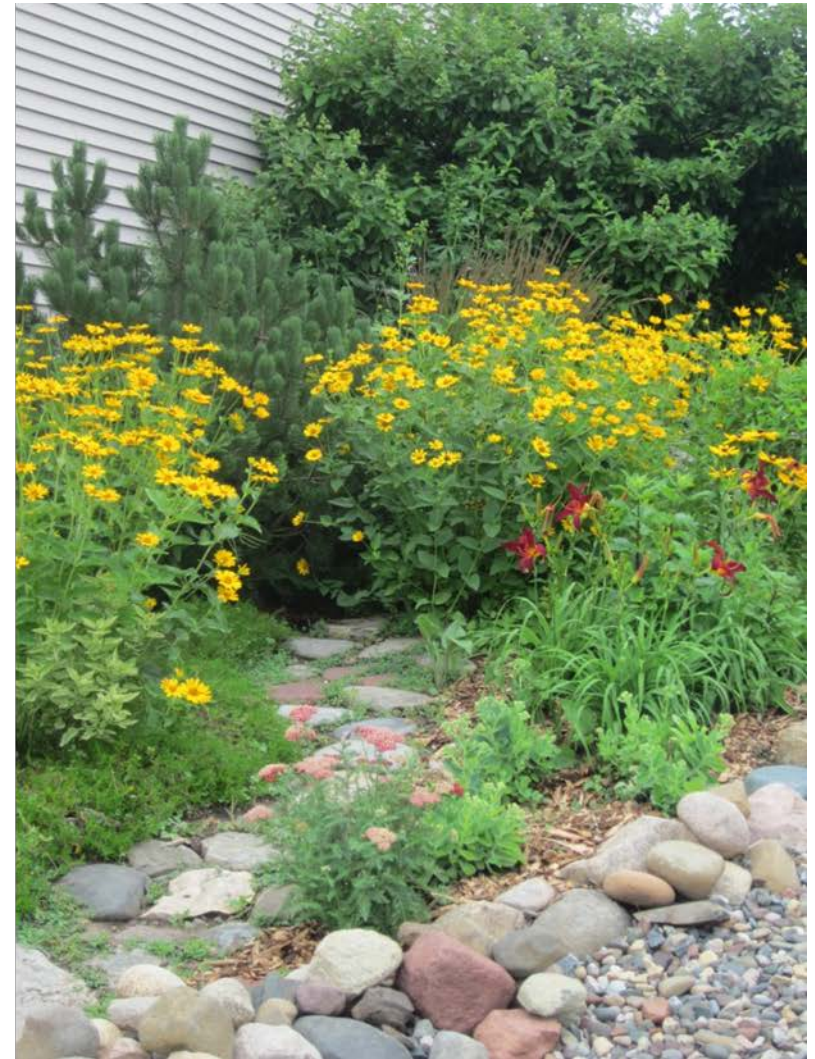
Bio-Swales - Dry Creeks & Ponds



Bio-Swales – After The Rains



Rain Gardens



Plants for Rain Gardens

Plants for Southern California Rain Gardens

S = can be used in shade

Water Need: High

Creeping Wildrye
(*Leymus triticoides*)
Yerba Mansa (*Anemopsis californica*) **S**
NZ bush sedge **S**
(*Carex solandri*)
Basket Rush
(*Juncus textilis*)

***Some of these plants might be challenging to locate: You may need to special order some species or visit a native plant nursery.**

Water Need: Medium

Clustered Field Sedge **S**
(*Carex praegracilis*)
Salt Grass
(*Distichlis spicata*)
Common/Spreading Rush
(*Juncus patens*)
Blue Sedge **S**
(*Carex glauca*)
Mexican Rush
(*Juncus mexicanus*)
Southwestern Spiny Rush
(*Juncus acutus*)

Water Need: Low

Hummingbird sage (*Salvia spathecea*)
California Polypody Fern
(*Polypodium californicum*) **S**
Common Yarrow (*Achillea millefolium*)
California Fuschia
(*Zauschneria californica*)

Plants for Rain Gardens

Trees and shrubs

Calycanthus occidentalis, Western spicebush

Corylus cornuta var. *californica*, California hazelnut

Myrica californica, Wax myrtle

Salix lucida ssp. *lasiandra*, Yellow willow

Ribes sanguineum, Red-flowering currant

Rubus spectabilis, Salmonberry

Vaccinium ovatum, California huckleberry

Plants for Rain Gardens

Wildflowers, ferns, grasses, and sedges

Achillea millefolium, Common Yarrow

Aquilegia formosa, Western columbine

Aristolochia californica, California pipevine

Carex barbarea, Santa Barbara Sedge

Carex nudata, California black-flowering sedge

Darmera peltata, Umbrella plant

Dicentra formosa, Pacific bleeding heart

Epipactis gigantea, Stream orchid

Epilobium canum latifolium, California fuchsia

Plants for Rain Gardens

Wildflowers, ferns, grasses, and sedges, cont.

Juncus patens, California Gray Rush

Lilium pardalinum, Leopard lily

Mimulus cardinalis, Scarlet Monkeyflower

Mimulus primuloides, Primrose monkeyflower

Muhlenbergia rigens, Deer Grass

Penstemon heterophyllus, Beard Tongue

Polypodium californicum, California polypody

Rudbeckia californica, California coneflower

Salvia Leucophylla, Purple Sage

Permeable Hardscapes

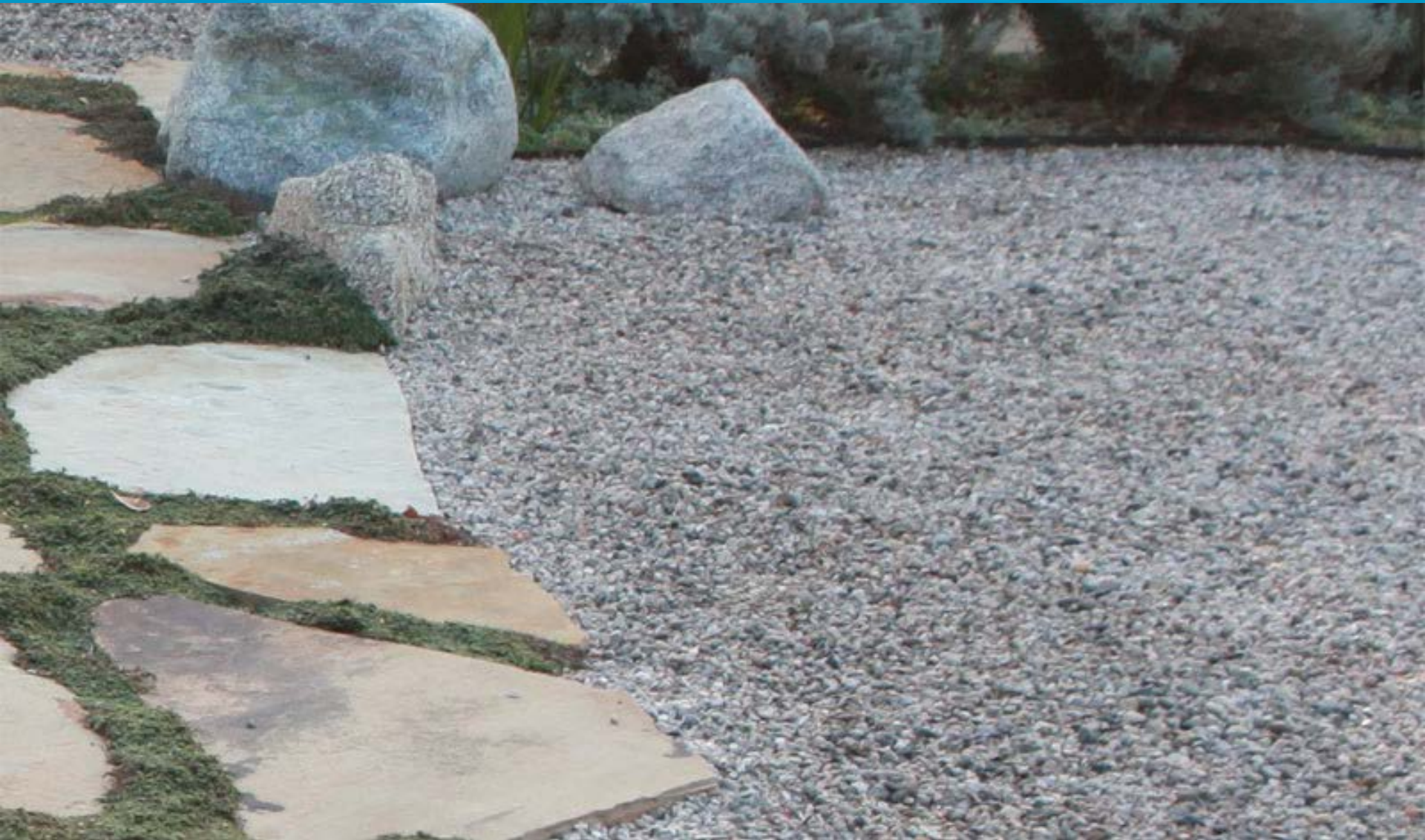
Permeable hardscapes allow rainwater to filter slowly into the ground, where pollutants are largely removed by filtration, chemical interactions and soil organisms. The ground also stores water, which is then taken up by plants or goes to recharge local aquifers.



Flagstone



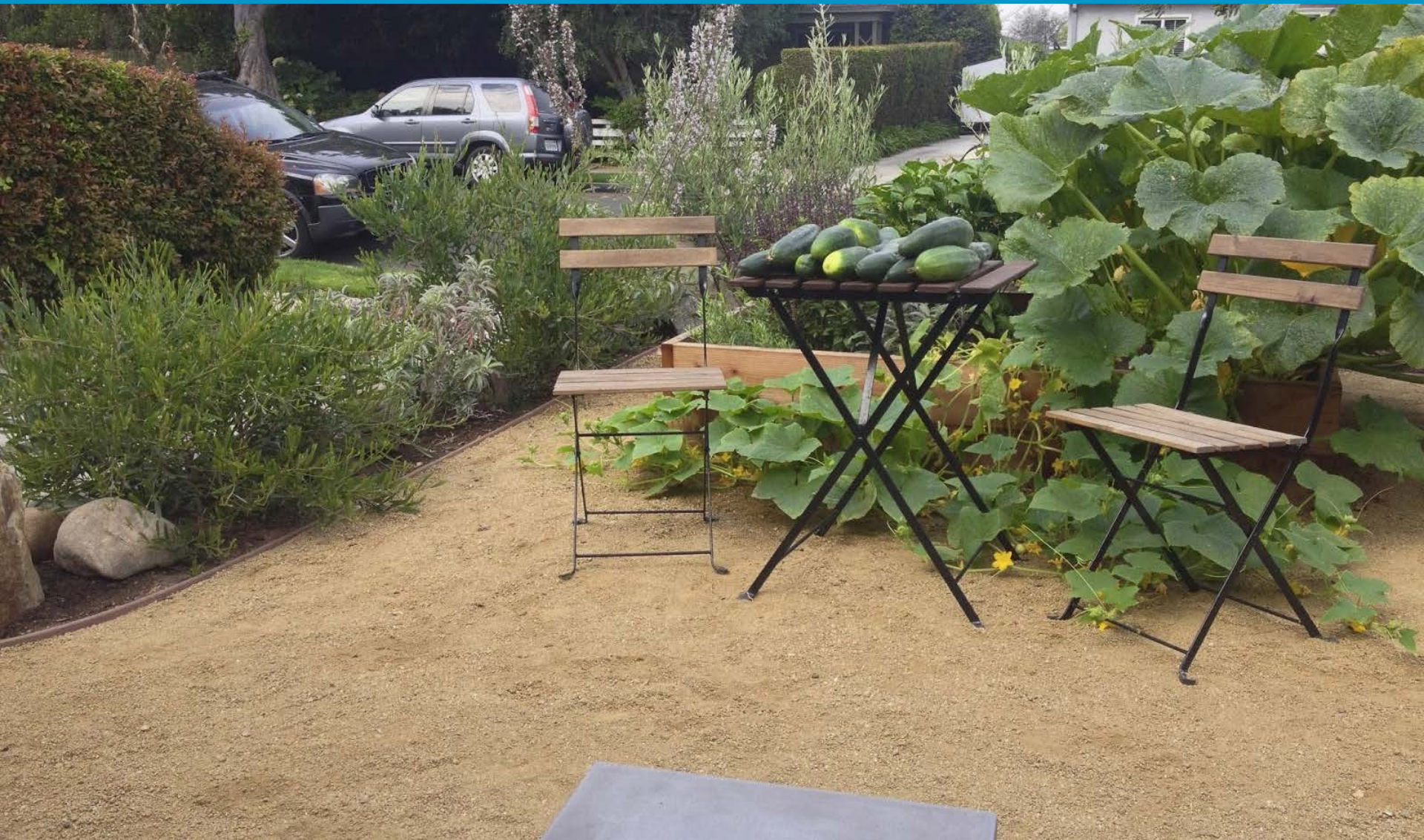
Pebbles & Rocks



Porous Pavers



Crushed Granite





Turf Removal Before & After's



Turf Removal Project- Irvine



Turf Removal Project- Irvine



Turf Removal Project- Irvine



Turf Removal Project- Irvine



Turf Removal Project- Irvine



Turf Removal Project- Costa Mesa

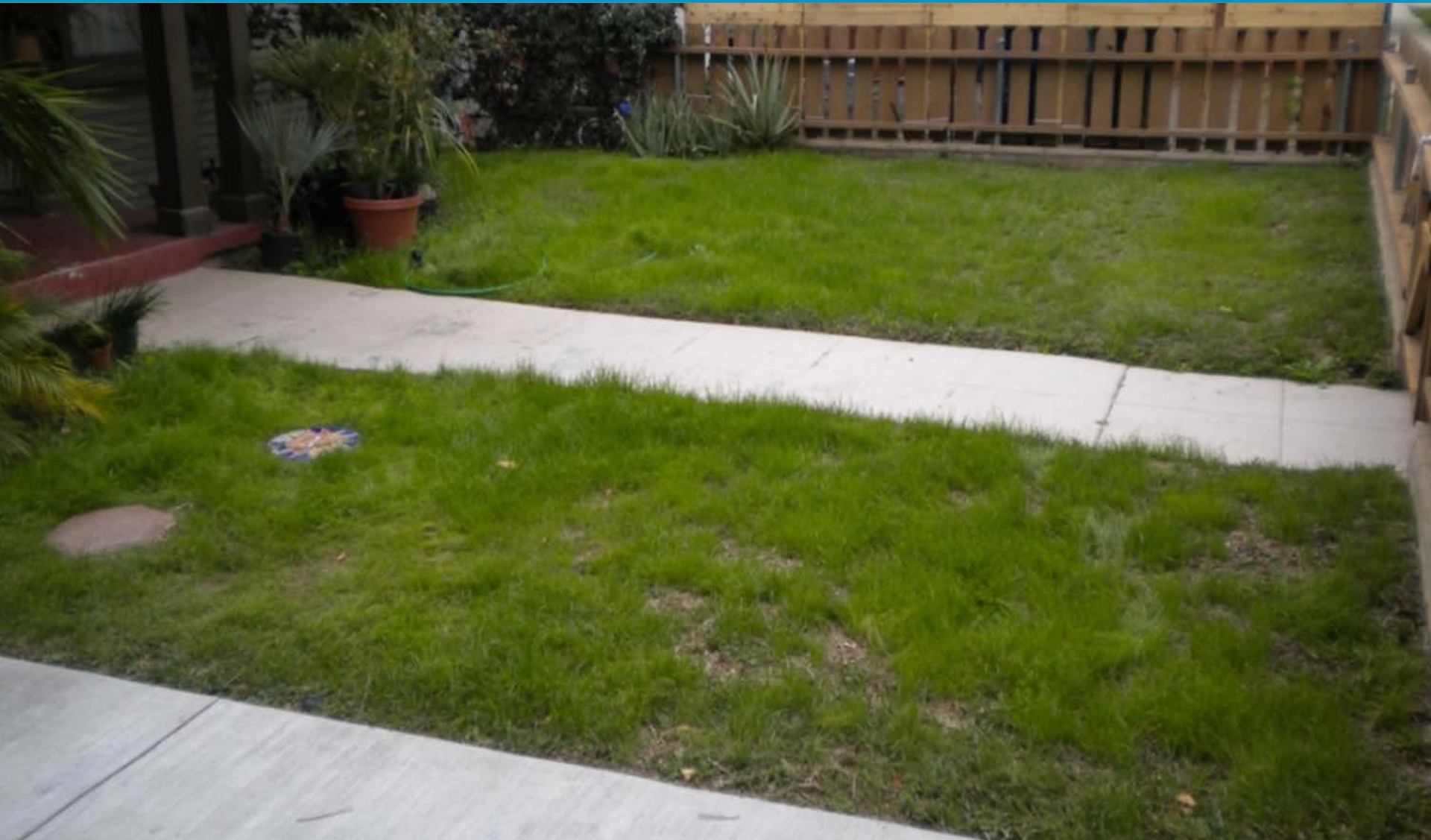




Beginning to End



Remove That Unused Lawn!



Space Your Plants



Be Patient



Into the Fall Growing Season



In The Midst of Summer



Resources

Irvine Ranch Water District's Website

www.irwd.com

IRWD Gardening/Plant Database

www.rightscaperesources.com

UC Davis IPM www.ipm.ucdavis.edu

The Association of Professional Landscape Designers (APLD)

[California Native Plant Society](#) – Design Tips

[California Native Plant Society Orange - County Chapter](#)

[Tree of Life Nursery](#)

[Theodore Payne Foundation](#)

[Rancho Santa Ana Botanic Garden](#)

[Las Pilitas Nursery](#)

How to Stay in Touch



Facebook: Irvine Ranch Water District



Twitter: @IRWDnews



IrvineRanchWD

Visit us on the Web: www.irwd.com

Email: info@irwd.com

Phone: 949-453-5300

15600 Sand Canyon Avenue, Irvine, CA 92618

Thank You!

