RightScape Workshop Series
The Right Plants

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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
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
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

- Mounding
- Prostrate
- Columnar
- Spreading
- Pyramidal
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.
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
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.
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
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
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
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
Non-native drought tolerant plants

Coprosma X kirkii

Royal Beard Tongue
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 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 overtake areas

Invasive Plants-, CA Native Plant Society, UC IPM
Cal-IPC - California Invasive Plant Council

Invasive

Periwinkle

Alternative

Wood Strawberry
Plant Water Requirements
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
Plants water requirements differ
A plant’s water need can be measured using its Kc value (plant factor)

### WUCOLS plant factors

<table>
<thead>
<tr>
<th>Category</th>
<th>Abbreviation</th>
<th>Percentage Of ETo</th>
<th>Plant Factor</th>
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<tbody>
<tr>
<td>High</td>
<td>H</td>
<td>70-90</td>
<td>Kc = 0.7 - 0.9</td>
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<td>Moderate</td>
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<td>40-60</td>
<td>Kc = 0.4 - 0.6</td>
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<td>Low</td>
<td>L</td>
<td>10-30</td>
<td>Kc = 0.1 - 0.3</td>
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<tr>
<td>Very Low</td>
<td>VL</td>
<td>&lt; 10</td>
<td>Kc = &lt; 0.1</td>
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**WUCOLS IV**

*Water Use Classification of Landscape Species*
Plants Seasonal Water Requirements

- **ET0**
- **High Water**
- **Mod Water**
- **Low Water**
- **Very Low Water**

Inches

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<th>Month</th>
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Hydrozoning Principles

Inherent limitation of which plants can be grouped together

- Plant types
- Water requirement
- Sun exposure
- Soil requirements
- Growth Rate
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 ft$^2$ of grass

1,000 gallons
1,000 gallons
1,000 gallons
1,000 gallons
The Water Conscious Landscape

Convert to Medium Water Use Plants
Every 1000 ft² of plants

1,000 gallons

700 gallons
Convert to Low Water Use Plants
Every 1000 ft² of plants

500 gallons

1,000 gallons
Landscape Design Features
Rain gardens and bioswales are simple landscaping features used to slow, collect, infiltrate, and filter stormwater.
Bioswales Design

Vegetation selected to tolerate wet & dry conditions

Bio-swale: cobble, stone & gravel mixture mimics natural watercourses

Optional gravel bed under bio-swale to maximize water absorption

Can range from 12" to many feet

4'-18' deep
Bio-Swales – Dry Creeks
Bio-Swales - Dry Creeks & Ponds
Bio-Swales – After The Rains
Rain Gardens
## Plants for Southern California Rain Gardens

<table>
<thead>
<tr>
<th>Water Need: High</th>
<th>Water Need: Medium</th>
<th>Water Need: Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creeping Wildrye <em>(Leymus triticoides)</em></td>
<td>Clustered Field Sedge <strong>S</strong> <em>(Carex praegracilis)</em></td>
<td>Hummingbird sage <em>(Salvia spathacea)</em></td>
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<tr>
<td>Yerba Mansa <em>(Anemopsis californica) <strong>S</strong></em></td>
<td>Salt Grass <em>(Distichlis spicata)</em></td>
<td>California Polypody Fern <em>(Polypodium californicum) <strong>S</strong></em></td>
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<tr>
<td>NZ bush sedge <strong>S</strong> <em>(Carex solandri)</em></td>
<td>Common/Spreading Rush <em>(Juncus patens)</em></td>
<td>Common Yarrow <em>(Achillea millefolium)</em></td>
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<td>Basket Rush <em>(Juncus textilis)</em></td>
<td>Blue Sedge <strong>S</strong> <em>(Carex glauca)</em></td>
<td>California Fuschia <em>(Zauschneria californica)</em></td>
</tr>
<tr>
<td>Southwestern Spiny Rush <em>(Juncus acutus)</em></td>
<td>Mexican Rush <em>(Juncus mexicanus)</em></td>
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</table>

*S = can be used in shade*

*Some of these plants might be challenging to locate: You may need to special order some species or visit a native plant nursery.*
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 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
Turf Removal Before & After's
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

YouTube: IrvineRanchWD

Visit us on the Web: www.irwd.com
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Thank You!