Creating Attractive Low Water Landscapes
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The UC Davis Arboretum
“Connecting People with the Beauty and Value of Plants”
“Landscapes are essential to the quality of life in California...."

- California faces a real challenge to meet the water needs of a growing population with a limited supply of water.

- To meet this challenge, water use in landscapes must be reduced.

- There are many ways to accomplish this goal and even modest improvements can have a cumulative effect in saving water.

--DWR website
Climate Change and persistent drought limit water supplies

- This year there is very little snowpack.
- Moisture falls as rain not snow due to climate change.
- California’s water system dependent on water storage as snow.
Where does this leave us?
To reduce irrigation do you have to have a dry-looking garden?
The answer is No!! These plants are irrigated only every two weeks in summer.
Six steps to a water-saving garden
(Adapted from the NYC.gov water agency)

1. **Planning & design**
   Add **hard surface areas** like patios, decks or walkways that **do not need irrigation** to overall plan.

2. **Minimize (eliminate) high water turf species**
   Limit the amount of area devoted to high water turf, use drought-tolerant grass seed mixes when turf is desired.

3. **Install efficient irrigation**
   Invest in a **modern irrigation system** that puts water only where it’s needed. **Turn it off during the winter**
Six steps to a water-saving landscape

4. Soil and grading improvements

Mix compost or other organic matter into the soil before planting to help the soil retain water. If your yard is sloped, eliminate water run-off with terraces and retaining walls. Incorporate swales and detention areas in the design.

5. Effective use of mulches

This keeps soil moist, smothers weeds and prevents erosion. Leave some bare soil for native bees.

6. Plant selection

Choose low-water-using trees, shrubs, flowers and groundcovers. Need watering in the first year for strong root system.
High, Medium and Low Water
What does it mean?

**High (frequent)**
- Well-watered turf
- Soil not allowed to dry out
- Frequent irrigation more than one time per week

**Medium (less frequent)**
- Most shrubs and trees
- Top of soil dries between irrigation
- One time per week

**Low (infrequent)**
- Drought tolerant, heat tolerant plants
- Plants root deeply and tolerate dry soil surface
- Water every two to four weeks

**Very Low**
- No summer water needed unless in drought
How to determine what a plant needs?

- **WUCOLS:** Water Use Classification of Landscape Species
- Plants rated by how much irrigation they need
Plant Search Database

Select a City by Region

- North Central Coastal -

- Davis -

- South Coastal -

- South Inland Valley -

- High and Intermediate Desert -

- Low Desert -

See WUCOLS List for All Regions
Plant Search Database

Plant Search

Davis, CA

Botanical Name

Search by Botanical Name

Common Name

Search by Common Name

Plant Type

- Gc (Ground Cover)
- P (Perennial)
- S (Shrub)
- T (Tree)
- V (Vine)
- Ba (Bamboo)
- Bu (Bulb)
- G (Grass)
- Pm (Palm and Cycad)
- Su (Succulent)
- N (California Native)
- A (Arboretum All-star)

Water Use

- Very Low
- Low
- Moderate
- High
- Unknown
- Not Appropriate for this Region
<table>
<thead>
<tr>
<th>Type</th>
<th>Botanical Name</th>
<th>Common Name</th>
<th>Water Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gc S</td>
<td>Andromeda polifolia</td>
<td>bog rosemary</td>
<td>High</td>
</tr>
<tr>
<td>P N</td>
<td>Limonium californicum</td>
<td>western marsh rosemary</td>
<td>Low</td>
</tr>
<tr>
<td>P</td>
<td>Poliomintha longiflora</td>
<td>Rosemary mint</td>
<td>Low</td>
</tr>
<tr>
<td>Gc S</td>
<td>Rosmarinus cvs.</td>
<td>trailing rosemary</td>
<td>Low</td>
</tr>
<tr>
<td>S</td>
<td>Rosmarinus officinalis</td>
<td>rosemary</td>
<td>Low</td>
</tr>
<tr>
<td>S</td>
<td>Westringia fruticosa (rosmariniformis) &amp; hybrids and cvs</td>
<td>coast rosemary</td>
<td>Low</td>
</tr>
</tbody>
</table>
Embrace Mediterranean garden design
Mediterranean Garden Design

- Uses firm but porous surfaces for outdoor living
- Provide shade from hot sun
- Use containers to focus higher water areas
- Use heat and drought tolerant plants
Landscape design using hardscapes reduces water use
San Antonio Botanical Garden
UCD Arboretum
Terrace Garden: Shade structures and fountain
Using hydrozones: group plants by water need

- High water in containers near sitting areas
- Medium around patio edge
- Low water in the back, farthest from entrance
Low Water Landscapes: pick the right plants
(or find a contractor who can)

• Select plants that are adapted to summer dry
  – California natives
  – Mediterranean climate plants
  – Low water-use succulents
  – Summer dry bulbs
Spacing of plants in landscapes can also reduce water needs

- Fewer plants share the same amount of water
- Can irrigate less frequently
We wanted to promote 100 of the best of our plants we knew could survive with less water.

Encouraging gardeners to choose and use top performing, water-conserving plants.
What makes a plant a UC Davis Arboretum All-Star?

Every All-Star plant must:
- Be attractive for most of the year
- Thrive in Central Valley conditions
- Be tested in the UC Davis Arboretum
- Be available at Plant Sales

All-Stars were also selected for:
- Low maintenance
- Drought tolerance
- Attracting beneficial wildlife
- Year-round interest
Arboretum All-Stars

The horticultural staff of the UC Davis Arboretum have identified 100 tough, reliable plants that have been tested in the Arboretum, are easy to grow, don’t need a lot of water, have few problems with pests or diseases, and have outstanding qualities in the garden. Many of them are California native plants and support native birds and insects. We are pleased to recommend these great plants for Valley-wise gardens.

Use the All-Stars database to find the right plants for your garden. Click here to browse through the 100 UC Davis Arboretum All-Stars.

When you visit the Arboretum demonstration gardens, you will see a series of beautiful, brightly-colored signs identifying the Arboretum All-Stars, each with a photo of the plant in bloom, a list of its outstanding features, and information about how to grow it. Also look for metal plant labels with the All-Stars logo.

Many of the All-Stars plants are available at Arboretum plant sales and will be available through many local retailers starting in spring 2009. Look for the All-Stars symbol on the plant tag. Coming soon: demonstration plantings of Arboretum All-Stars at the new Arboretum Teaching Nursery.

Click on the links below to download brochures about the Arboretum All-Stars plants:

Get a PDF of the 24-page Arboretum All-Stars Booklet, a full listing of all 100 All-Stars with detailed information on each.

If you are unable to get the entire 24 page booklet, try downloading parts of it:
- All-Star Perennials, pages 1-11
- All-Star Groundcovers and Vines, pages 12-13
- All-Star Shrubs, pages 14-21
- All-Star Trees, pages 20-24

Find out which All-Stars are California natives.

While the All-Stars all use less water, these plants are water misers. Want to attract hummingbirds, bees, or beneficial insects? These plants will meet your goals.
Salvia apiana - California white sage
California native plant; spring flowers attract pollinating bees; leaves contain fragrant oils.
More Details

Salvia clevelandii 'Winnifred Gilman' - Winnifred Gilman Cleveland sage
California native plant; evergreen shrub produces maroon-stemmed, blue-violet flowers; heat and drought tolerant; attracts hummingbirds, butterflies and beneficial insects.
More Details

Salvia greggii and Salvia x jamensis - autumn sage
Showy flowers attract hummingbirds and beneficial insects; flowers profusely in the spring and fall.
More Details

Salvia microphylla - mint bush sage
Leaves have a fruity smell; good for growing under native oaks; thrives with little care in sun or part shade; attracts hummingbirds.
More Details
California Lilac

- *Ceanothus maritimus* ‘Valley Violet’ (low)
- *Ceanothus* ‘Concha’ (low)
Eriogonum giganteum St. Catherine’s Lace (v. low)
beneficial insectary plant
Salvia clevelandii (low)
nectar for butterflies and hummingbirds
Compatible non-native drought-tolerant shrubs

- *Isomeris arborea* bladderpod (very low)
- *Callistemon violaceus* (low)
Leucophyllum frutescens (low) ceniza, barometer bush
Plants for winter bloom

*Lonicera standishii* winter honesuckle (not listed)

*Kniphofia* ‘Christmas Cheer’ Christmas torch lily (low)
Bulbs

*Sternbergia lutea*  yellow autumn crocus (v. low)

*Rhodophiala bifida*  oxblood lily (low)
Combine with other dependables: *Narcissus* and *Amaryllis* (v. low)
Mixing natives with compatible non-natives: *Heuchera ‘Rosada’* (not listed, all levels)
Plants native to the Mediterranean are compatible with Arboretum All-Stars
California Native Gardens

- Requires an appreciation of “golden” in summer
- Too much “golden can be overcome by use of “hydrozones”
- Mixing evergreen and deciduous plants.
But do California Native plants need less water? It depends...
Some may be native to wet areas and not drought tolerant

- Areas with coast fog
- Along rivers
- Along ponds
For the most part the plants in the Arboretum are drought tolerant natives

*Ceanothus* ‘Ray Hartman’ (low)
western redbud
*Cercis occidentalis* (v.low)
Toyon

*Heteromeles arbutifolia* (v. low)
Salvia apiana (low)  
bee sage
Eriogonum fasciculatum (v.low) buckwheat
there are prostrate forms too
California fuchsia
*Epilobium canum* (low) comes in many shapes and sizes
Low water California native shade garden
Gardening under native oaks
Large shrub for background

*Calycanthus occidentalis*

spice bush (low)
Likes shade
Heuchera maxima, Island alum root (low)
Low water landscape under an interior live oak
(with rushes and deer grass)
Heuchera ‘Rosada’
hybrid of CA native with AZ red flowering species
Ribes viburnifolium, evergreen currant (low)
match the need for sun or shade and combine with plants from similar climate regions:

**Australia**

*Grevillea ‘Scarlet Sprite’* (low)
Mexico

*Salvia X jamensis* ‘Scott’s Red’

autumn sage (low)
Mexico:

*Russelia equisetiformis*, coral fountain
South Africa

*Kniphofia* ‘Shining Sceptre’ & *Bulbine frutescens* (low)
Mediterranean perennials
*Lavandula* varieties

*Lavandula* ‘Goodwin Creek Gray’

*Lavandula angustifolia* ‘Munstead’
Ornamental oreganoes (medium to low)
Origanum
‘Betty Rollins’
*Origanum libanoticum*  Lebanese oregano
Origanum ‘Hopleys’
Phlomis fruticosa ‘Compacta’ (low)
Phlomis purpurea (low)
*Salvia officinalis*, culinary sage (low to medium)
*Nepeta X faassenii*  
**catmint (low)**
Grasses and Grass-like Plants

*Calamagrostis ‘Karl Foerster’* (low)
Miscanthus sinensis
‘Morning Light’
(medium)
The UCD Arboretum has demonstration gardens: Ruth Storer Garden
We focus on year-round seasonality of mixed plantings: 
*Allium* bed April
Same bed in September
Arboretum Terrace Garden: has very compacted soils and more shade
UCD Arboretum demonstration plantings to help us to learn as well as teach visitors about low water plants.
Using California natives draws a variety of creatures
And low water plants can be combined to create a more sustainable, regional look
The toughest are being tried in medians with only annual maintenance
Mixing perennials, tough grasses and dramatic sculptural plants
Please come to visit in person or online
http://arboretum.ucdavis.edu
Get ideas and see examples for creating a low water landscape.
Help conserve our precious water supplies
“A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community”—Aldo Leopold