

## SOME PLANTS FOR DRY CALIFORNIA CONDITIONS

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Dry, very dry, and getting drier describes most of California. Our climate and geography, expanding population and diminishing resources, regulations, and politics are telling us to use less water just when we would like to use more. We want all-year-green landscapes, but there is not much to water them with. Can we “have our cake and eat it too” in California? Maybe, but only if we choose our landscape plants carefully and propagate, establish, and maintain them properly. For more than fifty-three years we have been working on this at The University Arboretum at the University of California at Davis, and we have had some successes.

Careful observation is the first step in choosing which plants look good with little or no irrigation. We must observe them in all seasons. The best place to look for appropriate plants is in the dry landscapes within our own area, or in places with very similar conditions. The best candidates for the green-but-dry landscapes that we want are plants that look bright or dark green and good all year, need little or no irrigation aside from that required to establish them, be easy to propagate, no trouble to maintain, and long-lasting. We also look for plants that are free of pests and diseases and those that are neither invasive nor dangerous. For nursery production they should be easy to propagate and produce and have plenty of customer appeal. We have found that all plants in these categories look better, stay healthier, and grow faster if they are watered well once every two or four weeks during the dry season, even after they are established. The drier the climate, the fewer successful candidates; but at Davis with its moderate climate (17 inches of rain in the cool season, none in the hot season, and temperature extremes of 18 to 112 °F) we have found that the following species work well.

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**Drought-tolerant, all-year-green-foliaged plants for summer dry landscapes:**

Ground-covers:

*Aptenia cordifolia* ×  
*Platythyra haeckeliana*,  
often called *Aptenia*  
'Red Apple'  
*Baccharis pilularis*  
'Pigeon Point'  
*Ephedra chilensis*  
*Eriogonum fasciculatum*  
Theodore Payne'  
*Heuchera maxima*,  
(shade only)  
*Horkelia* spp., (best with  
some shade)

*Iva haysiana*  
*Juniperus sabina*  
*Lavandula angustifolia* ×  
*L. dentata*  
*Polygonum paronychia*,  
(best with some shade)  
*Rhagodia nutans*  
*Ribes viburnifolium*,  
(shade only)  
*Rosmarinus officinalis*, (low-  
growing forms)  
*Viguiera deltoidea*  
var. *parishii*

Shrubs:

*Acacia hemiteles*  
*Acacia rotundifolia*  
*Adenostoma fasciculatum*,  
(dwarf form)  
*Arctostaphylos densiflorus*  
*Arctostaphylos manzanita*  
*Arctostaphylos pajaroensis*  
*Bupleurum fruticosum*,  
(best with some shade)  
*Buxus balearica*  
*Callistemon brachyandrus*  
*Callistemon macropunctatus*  
*Cassia nemophila*  
*Cassia oligophylla*  
*Cercocarpus betuloides*  
var. *blancheae*  
*Cneorum tricocon*  
*Comarostaphylis diversifolia*  
var. *planifolius*  
*Dendromecon rigida*  
subsp. *harfordii*  
*Encelia californica*  
*Ephedra distachya*

*Ephedra tweediana*  
*Ephedra viridis*  
*Garrya fromontii*  
*Genista aethnensis*  
*Isomeris arborea*  
*Hesperaloe parviflora*  
*Larrea tridentata*  
*Leucophyllum laevigatum*  
*Nolina bigelovii*  
*Phillyrea latifolia* var. *media*  
*Prunus ilicifolia*  
*Quercus coccifera*  
*Quercus parvula*  
*Quercus phillyraeoides*  
*Rhus integrifolia*  
*Rhus laurina*  
*Rhus ovata*  
*Rhus standleyi*  
*Rhus virens*  
*Rosmarinus officinalis*,  
(taller forms)  
*Simmondsia chinensis*  
*Vauquelinia californica*

Vines:

*Billardiera bicolor*  
*Clematis flammula*  
*Macfadyena unguis-cati*

Trees:

<i>Abies pinsapo</i>	<i>Pinus canariensis</i>
<i>Acacia blakei</i>	<i>Pinus jeffreyi</i>
<i>Arbutus andrachne</i>	<i>Pinus ponderosa</i>
<i>Callitris preissii</i>	<i>Prunus ilicifolia</i>
<i>Casuarina cunninghamiana</i>	<i>Prunus lyonii</i>
<i>Cedrus libani</i>	<i>Pseudotsuga macrocarpa</i>
<i>Cupressus dupreziana</i>	<i>Quercus agrifolia</i>
<i>Cupressus forbesii</i>	<i>Quercus calliprinos</i>
<i>Cupressus sempervirens</i>	<i>Quercus ilex</i>
<i>Laurus nobilis</i>	<i>Quercus suber</i>
<i>Lyonothamnus floribundus</i>	<i>Quercus tomentella</i>
subsp. <i>asplenifolius</i>	<i>Tetraclinis articulata</i>
<i>Olea europaea</i> , fruitless forms, e.g. 'Swan Hill'	<i>Umbellularia californica</i>

VOICE: Dr. Whitcomb, would you comment on staking trees.

CARL WHITCOMB: I would rather not stake trees but it is something you may have to do to get a strong trunk with a good taper. The trunk must have some freedom to move, however.

STEVE McCULLOCH: Carl, what feeling do you have about the color of the container pots?

CARL WHITCOMB: I have worked with an assortment of colored pots. I believe shading the exposed side of the pots is best to reduce the temperature so the roots can function. The color really does not make much difference in my opinion.

VOICE: In the slide of root variability you showed among seedling trees, how much of that variability is just due to genetic differences?

CARL WHITCOMB: My feeling is that a big portion of that difference is due to root system quality, not genetic. I think that we have used genetic variability as a crutch in alibiing for poor performance in certain plants.

VOICE: For Stephen Garton: Do you find a difference in cold tolerance of *Alstroemeria* species and cultivars?

STEPHEN GARTON: Yes, there is a difference in cold tolerance, depending upon the genetic background of the cross. We have grown some outside in Salt Lake City, where last winter (1988-89), we had 20°F below zero. The plants were in pots plunged in the ground, with good survival. *Alstroemerias* planted in people's gardens survived and grew in the spring.

MICHAEL SMITH: David, we have had problems in germinating boronia seeds, an Australia native. Can you shed some light on this?

DAVID HOCKINGS: Germination of boronia seed is difficult if it has been stored for any length of time. It is best to get mature fruit, and then use seed where the seed coat is starting to darken but the seed is still large and soft—then it will germinate readily. If it is put in storage and the seed coat hardens, then germination is poor. Giving a hot water treatment will help, not boiling water, but as it comes out of the hot water tap.