



University of California

Agriculture and Natural Resources

**“Climate Change, Urban Heat Islands and
Horticulture”**

UCCE Master Gardeners of Riverside County

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We Have a 'Moisture' and a 'Tree Drought'

While there are ~ 9 M street trees in California, their density has decreased 30% since 1988. CA cities have the lowest tree canopy per capita (108 yd²) in the U.S.



Statistics

Statistics type: Cumulative Percent Area

Export table:



Moderate Severe Extreme Exceptional

Week	Date	None	D0-D4	D1-D4	D2-D4	D3-D4	D4	DSCI
Current	2022-07-12	0.00	100.00	99.80	97.48	59.81	12.74	370
Last Week	2022-07-05	0.00	100.00	99.80	97.48	59.81	11.59	369
3 Months Ago	2022-04-12	0.00	100.00	100.00	95.75	46.87	0.00	343
Start of Calendar Year	2021-12-28	0.00	100.00	100.00	86.28	32.93	0.84	320
Start of Water Year	2021-09-28	0.00	100.00	100.00	93.93	87.88	45.66	427
One Year Ago	2021-07-13	0.00	100.00	100.00	94.75	85.73	33.32	414

University of California Drought-Related Resources

Free Download Publications: <https://anrcatalog.ucanr.edu>

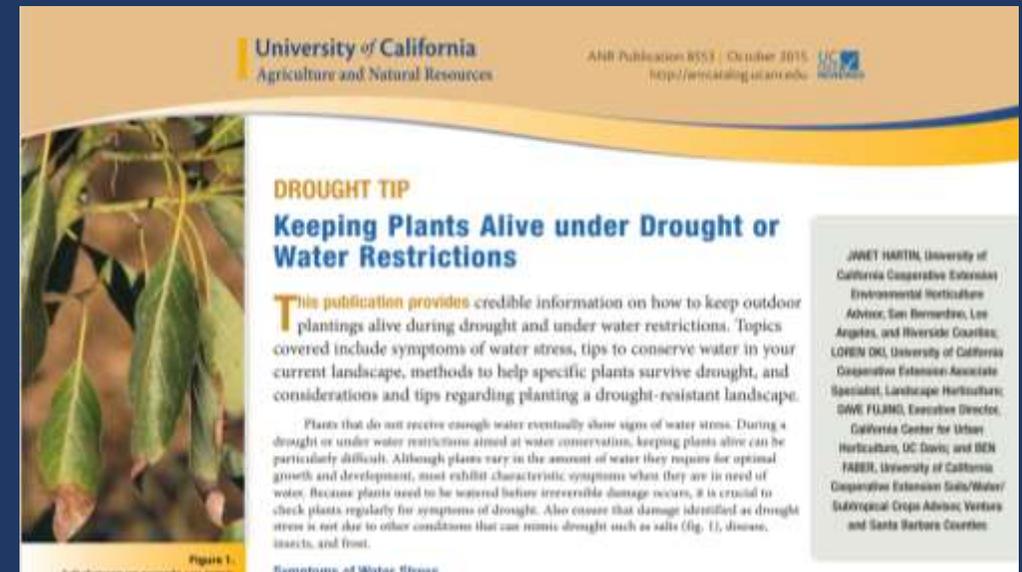
- Sustainable Landscaping in California
- Keeping Plants Alive Under Drought and Water Restrictions
- Lawn Watering Guide for California
- Use of Graywater in CA Landscapes

CA Institute for Water Resources:

<http://ciwr.ucanr.edu/>

(blogs, climate-smart ag, podcasts, etc.)

Other Tree Care Information: Treesaregood.org (Int'l Society of Arboriculture)



Janet's Blogs

Trees Come First During Drought:

<https://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=46513>

Be Part of the Solution: Plant Drought, Heat, and Pest

Resistant Trees: <http://ipm.ucanr.edu/PDF/PUBS/greenbulletin.2017.winter.pdf?sr=c=blog26490>

The Importance of Trees to Cool Urban Heat Islands: <https://ucanr.edu/b/~j5D>

Why Planting Shade Trees Reduces the Temperature of Urban Heat Islands: <https://www.oregister.com/2019/06/11/why-planting-shade-trees-helps-reduce-the-temperature-of-urban-heat-islands/>



Trees and Other Living Plants Cool the Environment Through Transpiration.



We Have Intense Urban Heat Islands (UHIs)

Surface temperatures of unshaded asphalt can be $>60^{\circ}\text{F}$ hotter than shaded asphalt in summer in inland cities and $>40^{\circ}\text{F}$ hotter in coastal cities

73-99°F Shaded Asphalt



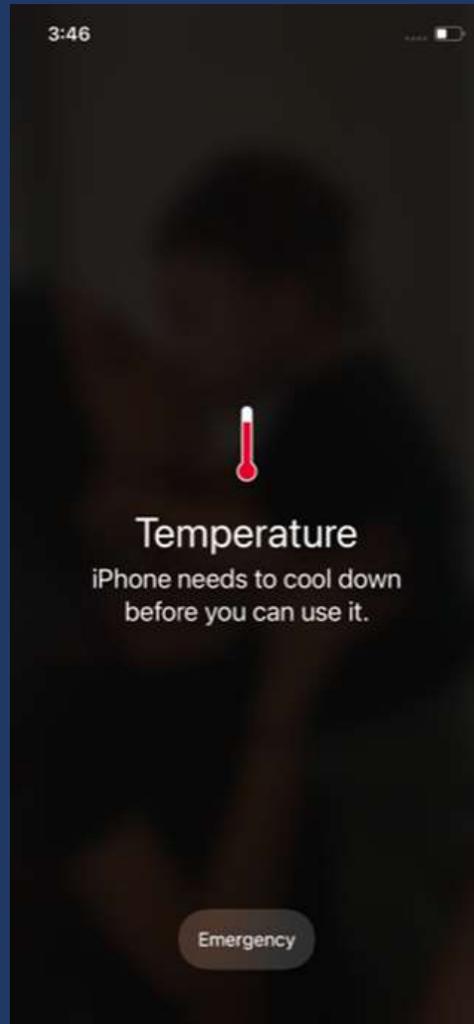
Temperatures of Unshaded Black Asphalt, Artificial Turf, Concrete (lighter than it looks here), and Living Turf



Dyed Black Chunky Rock Mulch is Also Extremely Hot



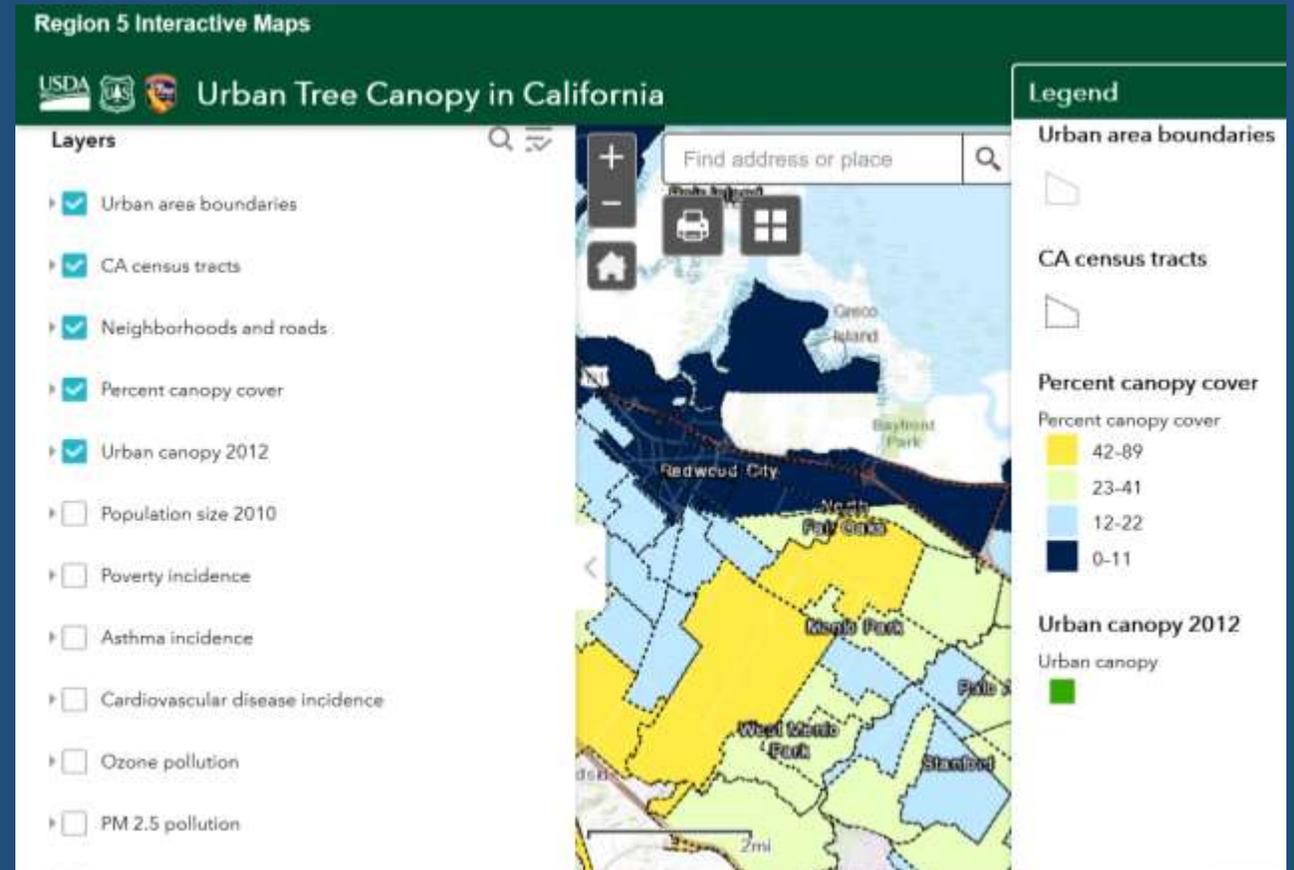
Pet paws can burn in 60 seconds on a 140°F surface (air temperature ~90°F) and 30 seconds on a 160-degree surface.



Higher Tree Canopies in Wealthier Neighborhoods

(https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd645759.html)

Tract number	6081611400
County	San Mateo
Zip code	94027
City	Atherton
Population 2010	4,237
Percentile poverty incidence	2
Percentile asthma incidence	4
Percentile cardiovascular disease incidence	1
Percentile ozone pollution	11
Percentile PM 2.5 pollution	41
Percentile water body impairment	0



Lower Tree Canopies in Impoverished Neighborhoods

(https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd645759.html)



Tract number	6071006401
County	San Bernardino
Zip code	92410
City	San Bernardino
Population 2010	3,343
Percentile poverty incidence	99
Percentile asthma incidence	84
Percentile cardiovascular disease incidence	74
Percentile ozone pollution	98
Percentile PM 2.5 pollution	82
Percentile water body impairment	0



Other Benefits of Urban Trees

- Save energy/reduce related costs
- Clean the air (remove dust, absorb pollutants) and release oxygen
- Absorb carbon dioxide
- Buffer Noise
- Provide habitat for animals and microorganisms



- Provide windbreaks
- Capture runoff/stormwater flooding
- Beautify neighborhoods/increase property value/reduce crime
- Improve mental and emotional health
- Reduce glare and reflection



The length of time it takes to replant trees and regain the lost benefits of poorly selected and maintained trees impacts future generations, and it's a high price to pay.





Sadly...

The vast majority of plant disorders are due to abiotic (non-living) conditions that are completely preventable.



Improper Tree Selection, Location and Care Reduce Average Lifespan 50-70%

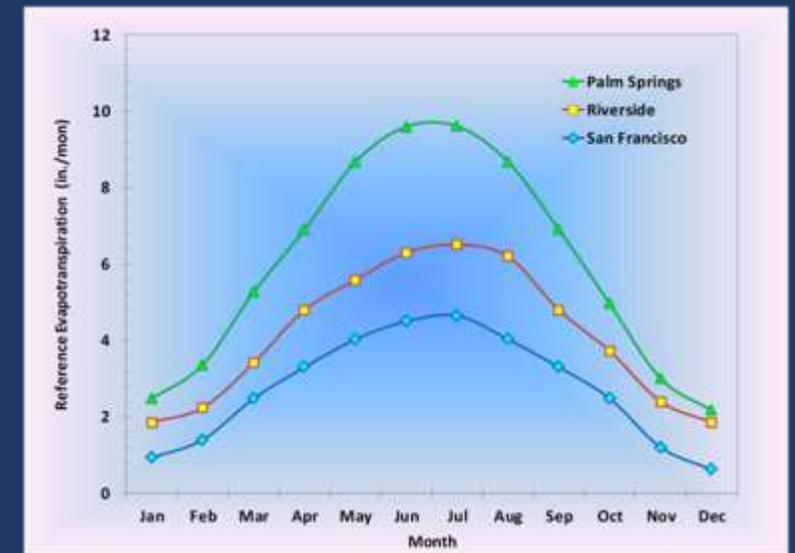
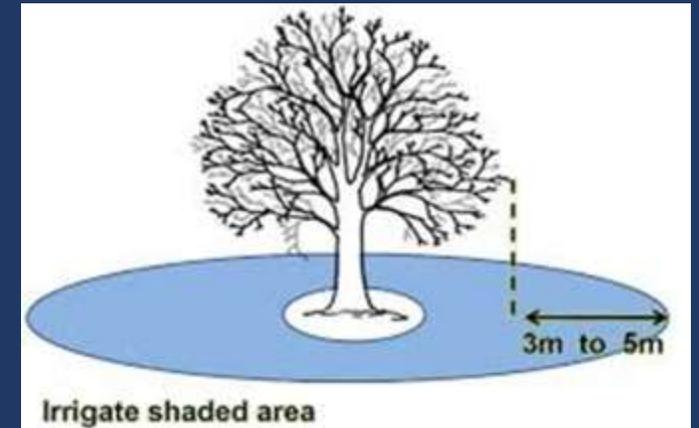


How to Keep Trees Alive During Drought and Water Restrictions

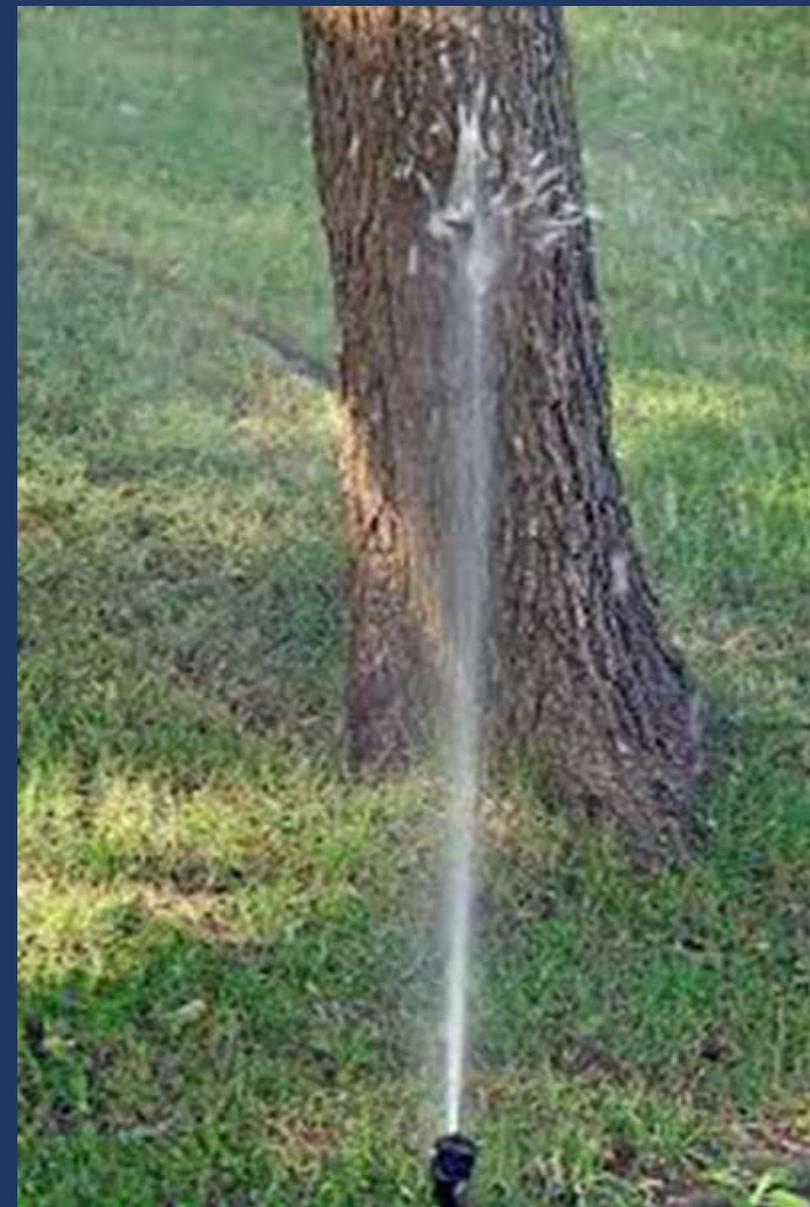


Use Water Wisely

- Newly planted trees need frequent watering (the first 3-6 months)
- Trees need most water (>80%) in spring and summer
- Trees should be irrigated in early morning from mid-dripline to beyond the dripline



Water Trees
Separately
from Turf
When
Possible



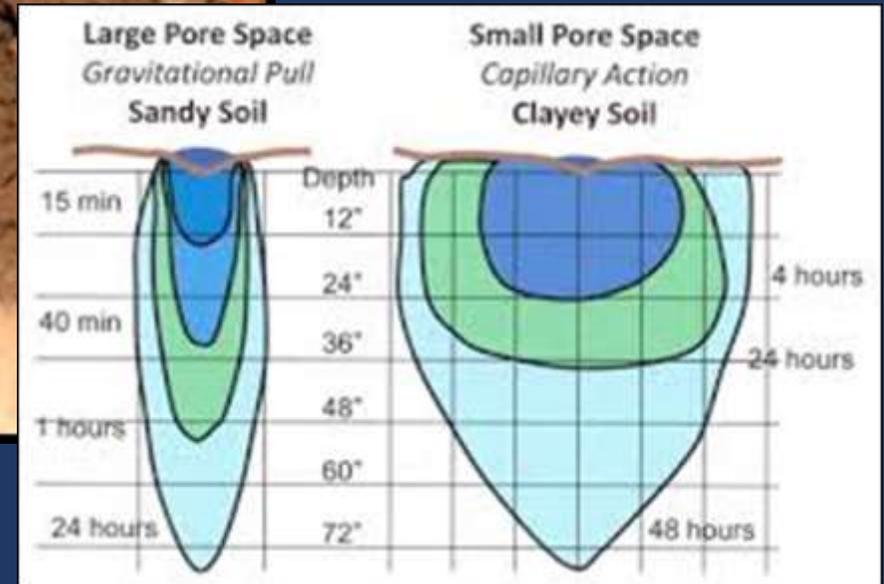
Water Established/Mature Trees Less Often and Longer than Groundcovers/Lawns



Watering Established Trees Just a Few Times (Deeply and Infrequently) With a Garden or Soaker Hose Can Keep Them Alive During Drought



Water Based on Soil Type/Water Infiltration Rate



Mulch Trees to Keep Water in And Weeds Out



If a Lawn is Removed, Ensure that Trees
Dependent on Water From the Lawn Sprinkler
System Are Regularly Irrigated



During Drought,
Perform Only
Necessary Pruning

Proper (top) vs
Improper (bottom)
Pruning



Avoid Fertilizing Trees During Drought

- Nitrogen increases water requirements
- Established trees do not require annual fertilization
- If you also have fruit trees, you may have to forego a crop for a season or two to save the tree by not fertilizing. It's a good trade-off!

Remove Girdling Staking Ties That Cut Into The Vascular System of the Tree





Climate-ready Landscape Trees Study

UC: Alison Berry, Jim Downer, Janet Hartin, Darren Haver
USFS: Greg McPherson, Natalie van Doorn, Erika Teach

- Measuring performance of select landscape tree species based on heat and drought resistance, CO₂ sequestration, soil tolerance, pest resistance, shade, biodiversity, rareness, longevity, etc.

CLIMATE READY TREES TRIAL SPECIES INLAND AND COASTAL SOUTHERN CALIFORNIA



ISLAND OAK
Inland & Coastal
Native to the CA Channel Islands and Guadalupe Island.



BRAZILIAN CEDARWOOD
Coastal
Native to Central and South America



GHOST GUM
Inland & Coastal
Native to Australia



ESCARPMENT LIVE OAK
Inland & Coastal
Native to West Texas



RED PUSH PISTACHE
Inland & Coastal
Hybrid of trees native to the Middle East and Asia.



ROSEWOOD
Inland & Coastal
Native to Northern India



NETLEAF HACKBERRY
Inland & Coastal
Native to the Southwest



MAVERICK MESQUITE
Inland & Coastal
Native to the Southwest



TECATE CYPRESS
Inland & Coastal
Native to Southern California



DESERT MUSEUM PALO VERDE
Inland Empire
Hybrid of natives to the Southwest.



MULGA
Inland & Coastal
Native to Western Australia



CATALINA CHERRY
Coastal
Native to the CA Channel Islands.



PALO BLANCO
Inland & Coastal
Native to Sonora, Mexico



DESERT WILLOW
Inland Empire
Native to CA and the Southwest

UC Riverside “Climate Ready Trees” Plots





Evaluated Climate Trends & Exposures, Underplanted Species, and What Trees are Doing Well in Hotter Climate Zones



CalAdapt Climate Model, Next 75 Years



cal-adapt

Tools Data Resources Blog About Help

Exploring California's Climate Change Research

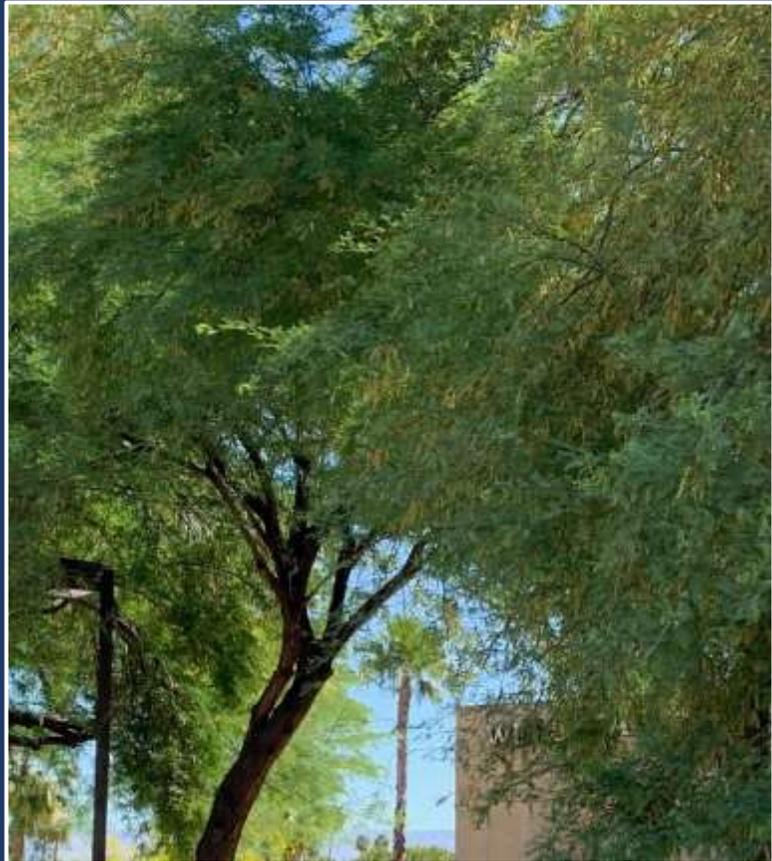
Cal-Adapt provides a view of how climate change might affect California. Find tools, data, and resources to conduct research, develop adaptation plans and build applications.

- Annual Averages Extreme Heat
- Annual Averages
- Annual Averages
- Snowpack
- Sea Level Rise
- Wildfire

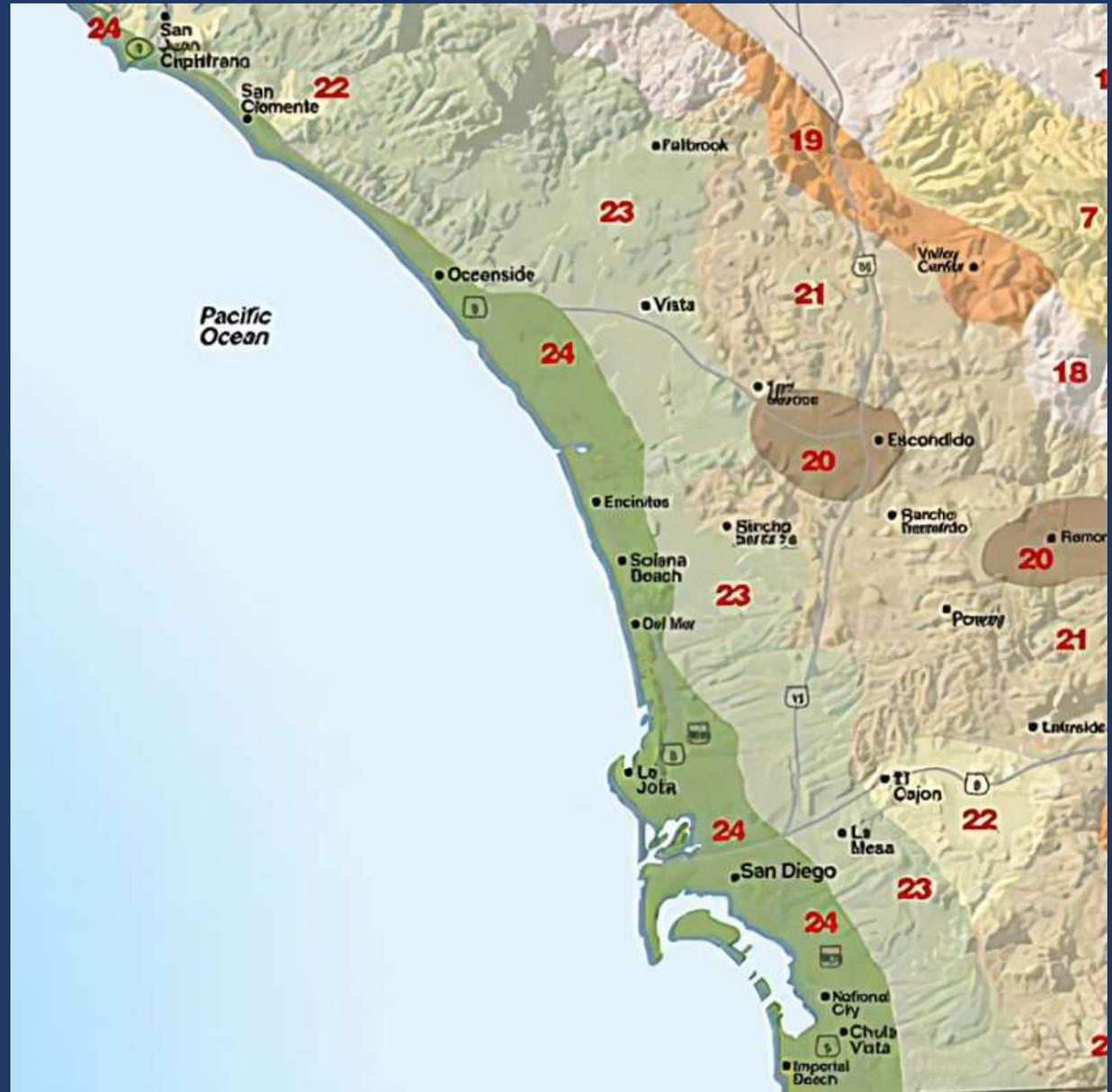
Precipitation & Wind: fewer storms but more precipitation during each event, stronger winds

<http://cal-adapt.org/tools/>

Examples of Strong Performers to Date



Use Sunset Zones (there are 20) Instead of USDA Zones (only 6) When Starting Your Search for Suitable Tree Species



Useful Websites With Searchable Plant Selection Engines

- Urban Forest Ecosystem/Cal Poly: <https://selectree.calpoly.edu>
- WUCOLS IV (Water Use Classification of Landscape Species):
<http://ucanr.edu/sites/WUCOLS>
- California Native Plant Society: <http://www.calscape.org>

'Maverick' Mesquite (*Prosopis glandulosa*)



- Native to Southwestern United States
- Thornless
- Drought/heat/pest tolerant
- Deciduous
- Grows to 35' x 35'
- Small yellow flowers in spring/summer
- Large pods



General Notes

Branches droop but resist breakage. This cultivar is known for being thornless and having foliage visually similar to the Peruvian Pepper Tree (*Schinus molle*).

Has fragrant Flower.

Native to Southwestern United States.

Family: *Fabaceae*

Additional Common Names

TEXAS MESQUITE, MAVERICK HONEY MESQUITE

Tree Characteristics

Spreading and requires ample growing space.

Rounded Shape.

Has Deciduous foliage.

Height: 25 - 35 feet.

Width: 25 - 35 feet.

Growth Rate: 12 to 36 Inches per Year.

Leaves Bipinnately Compound, Green, No Change, Deciduous.

Flowers Inconspicuous. Fragrant Yellow. Flowers in Spring or Summer. Has perfect flowers (male and female parts in each flower).

Brown Legume, Very Large (Over 3.00 inches), fruiting in Spring, Summer or Fall Edible and Wildlife use it.

Bark Grey, Smooth.

Shading Capacity Rated as Low to Moderately Low in Leaf.

Shading Capacity Rated as Low out of Leaf.

Tree Site Conditions & Constraints

Sunset Zones 10 - 13 and 18 - 24.

USDA Hardiness Zones 6 - 10.

Exposure Full Sun.

Wet to Dry Soil.

Drought tolerant.

Clay, Loam or Sand Texture.

Acidic to Alkaline Soil pH.

Health, Safety & Environmental Concerns

Root Damage Potential Rated as Low.

Attracts Birds and Mammals.

Wildlife use Fruit.

Special Uses & Values

Specimen or Shade Tree.

Bonsai.

Pistacia 'Red Push'
(A hybrid between *P. atlántica* x *P. integerrima*)



- Developed in Arizona
- Deciduous
- Grows quickly to 20' tall
- Drought/heat/cold/pest tolerant
- Reddish leaves in fall
- Inconspicuous flowers
- Fruitless

General Notes

A hybrid between *Pistacia atlantica* × *Pistacia integerrima*.

Hybrid developed in Arizona. Drought and cold tolerant. New leaves have distinctive red color when emerging.

Trees may be referred to as male or female.

Family: *Anacardiaceae*

Tree Characteristics

Erect or Spreading with a High Canopy.

Rounded or Spreading Shape.

Has Deciduous foliage.

Height: 25 - 40 feet.

Width: 20 - 40 feet.

Growth Rate: 12 to 24 Inches per Year.

Longevity Greater than 150 years.

Leaves Pinnately Compound Odd with Lanceolate Leaflets, Green, Red or Orange, Deciduous.

Flowers Inconspicuous. Flowers in Spring. Has either male or female reproductive parts (dioecious). Trees may be sold as male or female.

Fruitless.

Bark Dark Brown, Light Gray or Light Green, Furrowed or Scaly.

Shading Capacity Rated as Dense in Leaf.

Shading Capacity Rated as Moderate out of Leaf.

Cite this tree:

SelectTree. "*Pistacia* × 'Red Push' Tree Record." 1995-2021. Apr 21, 2021.

< <https://selecttree.calpoly.edu/tree-detail/pistacia-x-red-push> >

This tree is not part of the [SelectTree Nursery Connection](#). If you would like to see this tree listed, or know of a nursery that sells it,

Tree Site Conditions & Constraints

Sunset Zones 8 - 24.

USDA Hardiness Zones 7 - 9.

Exposure Full Sun.

Moist to Dry Soil.

Drought tolerant.

Clay, Loam or Sand Texture.

Slightly Acidic to Highly Alkaline Soil pH.

Seaside Tolerance is Not Suited.

Pests & Disease Information

Resistant to Verticillium.

Health, Safety & Environmental Concerns

Branch Strength Rated as Strong.

Root Damage Potential Rated as Low.

Special Uses & Values

Street Tree, Park Tree, Screen.

Desert Willow
'Bubba'
(*Chilopsis linearis*)





General Notes

 Utility friendly tree.

Desert Willow is an unusual small flowering desert accent tree, especially useful in riparian or native garden settings. It is usually multi-trunked or low-branching. It blooms best in full sun, becoming taller and less full in half shade. Desert Willow bark is smooth when young but develops rough fissures as it ages. White lenticels are noticeable on young bark or new growth. It is very drought tolerant, with only occasional deep watering to the roots. It is susceptible to root rot if drainage is poor.

Has fragrant Flower.

Native to California, Texas and Mexico.

Family: *Bignoniaceae*

Additional Common Names

BUBBA DESERT WILLOW, DESERT CATALPA BUBBA

Tree Characteristics

Spreading Low or High Canopy.

Rounded or Spreading Shape.

Has Deciduous foliage.

Height: 15 - 20 feet.

Width: 10 - 15 feet.

Growth Rate: 24 to 36 Inches per Year.

Longevity 40 to 150 years.

Leaves Linear, Bluish Green or Silver or Gray Green, Golden or Yellow or Orange, Deciduous.

Tree Site Conditions & Constraints

Sunset Zones 7 - 14 and 18 - 23.

USDA Hardiness Zones 8 - 9.

Exposure Full Sun to Partial Shade.

Moist to Dry Soil.

Drought tolerant.

Loam or Sand Texture.

Neutral to Highly Alkaline Soil pH.

Salinity Tolerance is Good Inland.

Seaside Tolerance is Not Suited.

Pests & Disease Information

Resistant to Texas Root Rot. Susceptible to Root Rot.

Health, Safety & Environmental Concerns

Branch Strength Rated as Medium.

Root Damage Potential Rated as Low.

Allergy Health Hazard.

Biogenic Emissions considered Moderate.

Desirable Wildlife Plant.

Attracts Birds.

Wildlife use Fruit.

Special Uses & Values

Screen.

Indian Rosewood (*Dalbergia sissoo*)

Left: 'Bubba' Desert
Willow

Right (Indian Rosewood)



GENERAL INFO

Useful for erosion control as it has a wide spreading root system. It thrives in lawn settings, as well as hot, reflected heat. A drought tolerant tree.

Native range: Indian Subcontinent

Horticultural use: Shade Tree or Park Tree or Street Tree

TREE CHARACTERISTICS

Tree shape: Rounded or Vase

Foliage type: Deciduous - Partly Deciduous

Maximum tree height: 60 feet

Canopy width: 30-40 feet

Growth rate: ~24-36 in/year

Leaf arrangement and form: Alternate, Pinnately Compound

Leaf/leaflet shape: Oval

Leaf color: Green

Flowers: Inconspicuous, Fragrant

Flower color: White or Yellow.

Flowering time: Spring

Fruit: Medium to Large Brown Legume

Fruiting time: Fall or Summer

Bark: Dark Brown or Light Green, Furrowed, Rough

Litter: Dry Fruit, Flowers

SITE CONDITIONS

Planting area: Greater than 10'

SelectTree Water Use Rating: Very low

Sunset zones: 13, 19, 21 - 24

USDA zones: 9, 10, 11

Sun exposure: Partial Shade to Full Sun

Soil texture: Loam or Sand or Clay

Soil pH: Acidic to Acidic

Salt spray tolerance: High

CONSIDERATIONS

Branch strength: Medium Weak

Root damage potential: Moderate

Potential health issues: No known hazards

Wildlife interactions: Tree is deer resistant

Powerline friendly: No

Ghost Gum (*Corymbia papuana*)

GHOST GUM

Corymbia aparrerinja

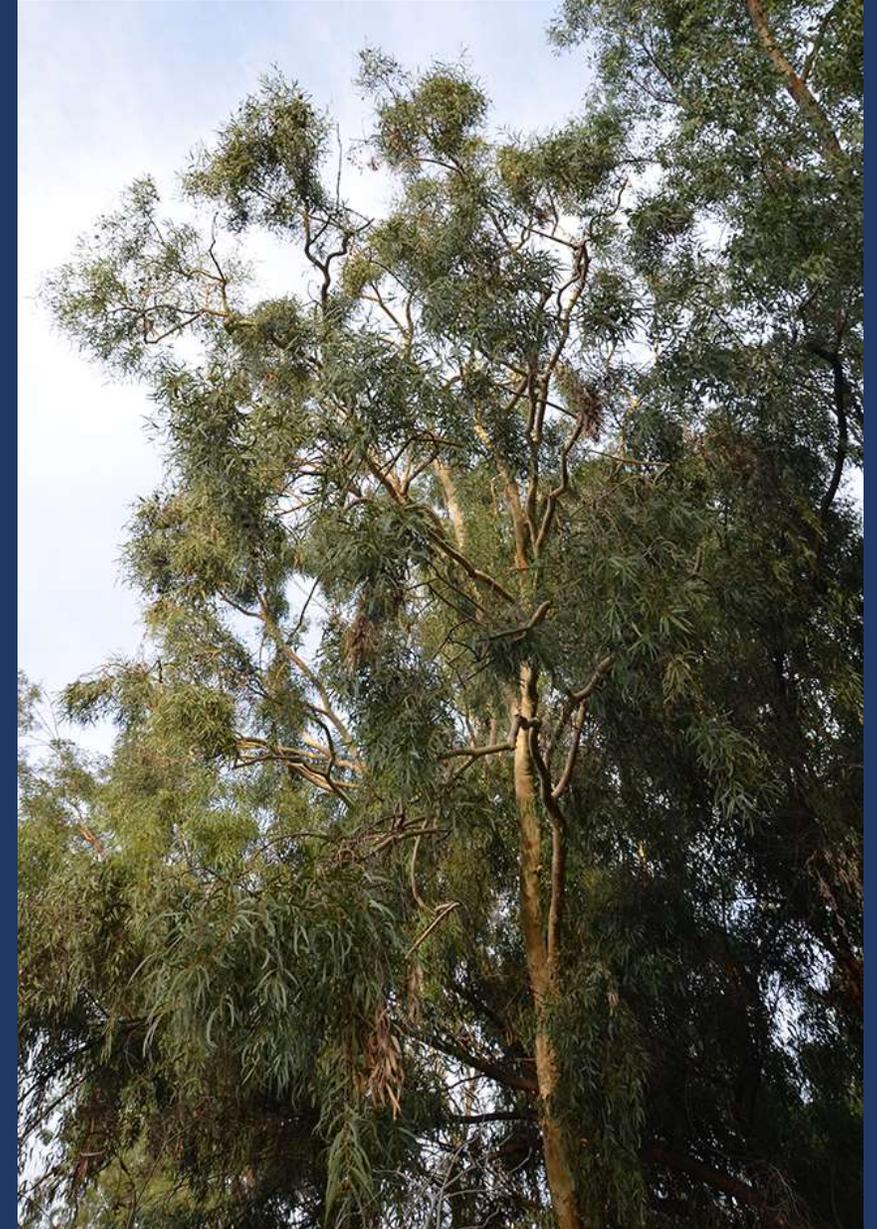
FAMILY Myrtaceae

See all *Corymbia*

SYNONYMS

Eucalyptus aparrerinja

Eucalyptus papuana



GENERAL INFO

Hardiness estimate: 32 degrees F. Blooms in summer. Drought tolerant.

Native range: Northern Australia

TREE CHARACTERISTICS

Tree shape: Rounded
Foliage type: Evergreen

Maximum tree height: 50 feet
Canopy width: 20-35 feet
Growth rate: ~36-127 in/year

Leaf arrangement and form: Alternate, Simple
Leaf/leaflet shape: Spear-shaped
Leaf color: Bluish Green or Silver or Gray Green

Flowers: Fragrant
Flower color: White.
Flower type: Has male and female reproductive parts in each flower (perfect)
Flowering time: Summer

Fruit: Brown or Mostly Green Capsule
Fruiting time: Fall

Bark: Striking Cream, Smooth

Litter: Dry Fruit

SITE CONDITIONS

Planting area: 5' to 10'

SelectTree Water Use Rating: Very low

Sunset zones: 5 - 6, 8 - 24

USDA zones: 8, 9, 10

Sun exposure: Partial Shade to Full Sun

Soil texture: Loam or Sand

Soil pH: Slightly Acidic to Very Alkaline

CONSIDERATIONS

Root damage potential: Moderate

Potential health issues: No known hazards

Wildlife interactions: Tree is deer resistant

Disease and pest susceptibility: Armillaria, Root Rot and Beetle Borers

Disease and pest resistance: Texas Root Rot, Verticillium

Powerline friendly: No

Palo Blanco (*Acacia Willardiana*)



PALO BLANCO

Mariosousa willardiana

FAMILY Fabaceae

See all *Mariosousa*

SYNONYMS

Acacia willardiana

ADDITIONAL COMMON NAMES

WILLARD ACACIA



GENERAL INFO

An open and wispy small tree with beautiful peeling cream to white bark. Perfect for a dry garden. Normally evergreen, this tree may drop its leaves in a drought or cold spell. The lengthy needle-like leaf stalks remain and are prominent after the small leaflets drop.

Native range: Mexico, Sonoran Desert

Horticultural use: Ornamental

TREE CHARACTERISTICS

Tree shape:

Foliage type: Partly Deciduous - Evergreen

Maximum tree height: 20 feet

Canopy width: 12-15 feet

Growth rate: ~12-24 in/year

Leaf arrangement and form: Alternate, Simple

Leaf/leaflet shape: Linear

Leaf color: Bluish Green or Silver or Gray Green

Flowers: Showy, Fragrant

Flower color: Yellow.

Flower type: Has male and female reproductive parts in each flower (perfect)

Flowering time: Spring or Summer

Fruit: Brown Legume

Fruiting time: Fall, Spring or Summer

Bark: Cream or White, Exfoliating, Smooth

Litter: Dry Fruit

SITE CONDITIONS

Planting area: 2' to 5'

Water use: Very low

Sunset zones: 12 - 24

USDA zones: 9, 10, 11

Sun exposure: Full Sun to Full Sun

Soil texture: Loam or Sand or Clay

Soil pH: Slightly Acidic to Very Alkaline

CONSIDERATIONS

Branch strength: Weak

Potential health issues: Allergy

Wildlife interactions: Tree is deer resistant and attracts bees, birds

Disease and pest susceptibility: null

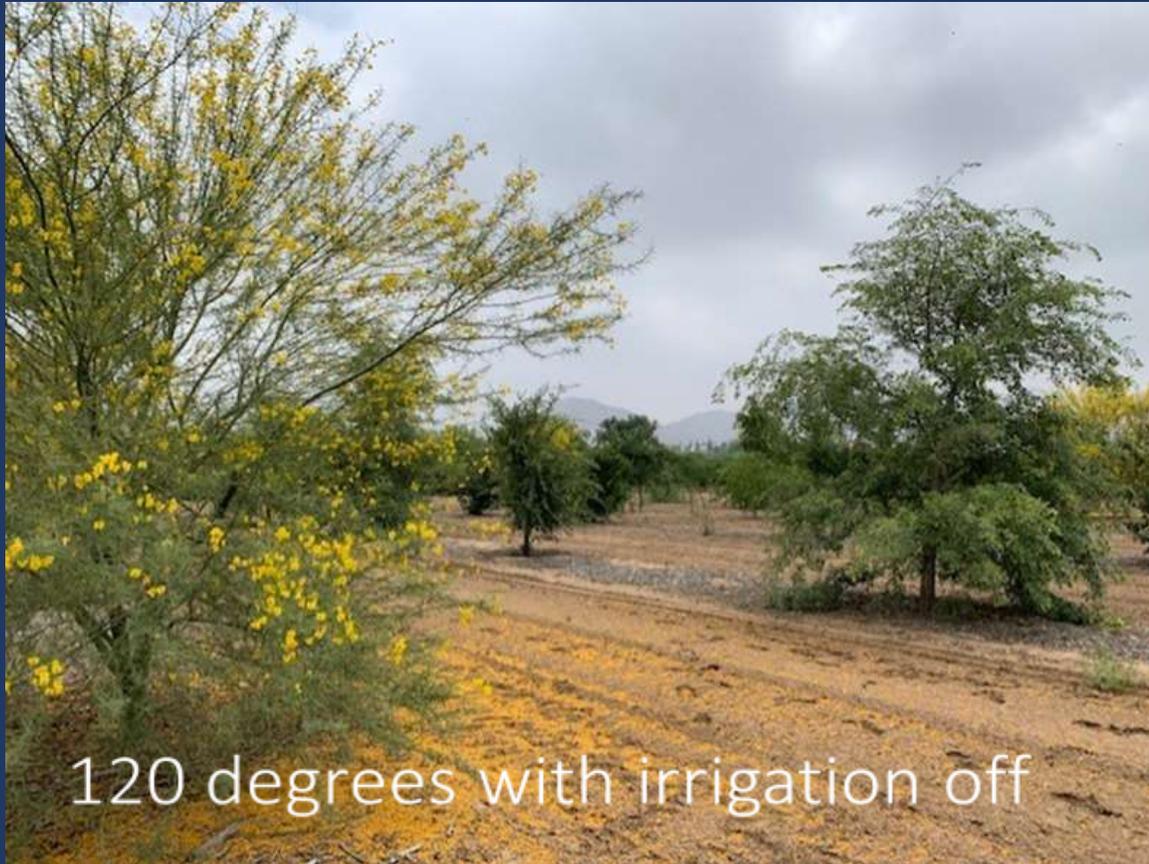
Powerline friendly: Yes

'Desert Museum' Palo Verde

(3-way cross: *P. aculeata*, *P. microphyllum*, and *P. florida*)



'Desert Museum' Palo Verde



- Drought/heat tolerant
- Native to SW USA
- Deciduous
- Thornless
- Grows quickly to 15' x 25'
- Prolific yellow flowers in spring/summer
- Prefers no organic mulch

General Notes



Utility friendly tree.

This hybrid is a three-way cross with *P. aculeata*, *P. microphyllum*, and *P. floridum* combining the best characteristics of all three. Developed by Mark Dimmitt at the Arizona Sonora Desert Museum, this tree has rigorous growth and a sturdy, upright branching habit. This tree provides a brilliant and rather conspicuous bloom to announce the arrival of spring.

Has fragrant Flower.

Native to A hybrid. Parents are native of the Sonoran and Chihuahan Deserts of the southwestern United States .

Family: *Fabaceae*

Previously listed in the *Caesalpinaceae* family.

Tree Characteristics

Spreading or Weeping with a Low Canopy.

Rounded, Umbrella or Vase Shape.

Has Deciduous foliage.

Height: 15 - 20 feet.

Width: 20 - 25 feet.

Tree Site Conditions & Constraints

Sunset Zones 8 - 14 and 18 - 20.

USDA Hardiness Zones 6 - 9.

Exposure Full Sun.

Moist to Dry Soil.

Drought tolerant.

Clay, Loam or Sand Texture.

Neutral to Highly Alkaline Soil pH.

Salinity Tolerance is Good to Moderate Inland.

Seaside Tolerance is Good in Mild Zone.

Pests & Disease Information

Resistant to Texas Root Rot. Susceptible to Invasive Shot Hole Borer, Eriophyid Mite.

Health, Safety & Environmental Concerns

Branch Strength Rated as Medium.

Root Damage Potential Rated as Low.

None Known Health Hazard.

Biogenic Emissions considered Moderate

Island Oak

Quercus tomentella



[SELECT TREE](#)

[URBAN TREE KEY](#)

[CALIFORNIA BIG TREES](#)

ISLAND OAK

Quercus tomentella

FAMILY Fagaceae

[See all *Quercus*](#)

SYNONYMS

ADDITIONAL COMMON NAMES



GENERAL INFO

This evergreen Oak is a desirable landscape tree in southern California. Smooth gray bark when young becomes brown and blocky with age. Found natively on the Channel Islands. Prefers deep, moist soils but can tolerate a wide range of soil conditions. Slightly toothed, glossy green leaves are covered with tan hairs below.

Native range: California and Mexico

TREE CHARACTERISTICS

Tree shape: Rounded
Foliage type: Evergreen

Maximum tree height: 50 feet
Canopy width: 25-40 feet
Growth rate: ~24 in/year

Leaf arrangement and form: Alternate, Simple
Leaf/leaflet shape: Ovate
Leaf color: Dark Green

Flowers: Inconspicuous
Flower type: Has male and female reproductive parts in each flo (perfect)

Bark: Dark Gray / Brown, Blocky, Smooth

SITE CONDITIONS

Planting area: Greater than 10'

SelecTree Water Use Rating: Low

Sunset zones: 7 - 9, 14 - 17, 19 - 24

Sun exposure: Partial Shade to Full Sun

Soil texture: Loam or Sand or Clay

CONSIDERATIONS

Wildlife interactions: Tree is deer resistant and attracts birds, squirrels

Disease and pest susceptibility: Armillaria

Disease and pest resistance: Verticillium

Powerline friendly: No

Catalina Cherry

Prunus ilicifolia

CATALINA CHERRY

Prunus ilicifolia subsp. *lyonii*

FAMILY Rosaceae

See all *Prunus*

SYNONYMS

Prunus lyonii

Laurocerasus lyonii

ADDITIONAL COMMON NAMES



SITE CONDITIONS

Planting area: 5' to 10'

SelectTree Water Use Rating: Low

Sunset zones: 5 - 9, 12 - 24

USDA zones: 9, 10

Sun exposure: Partial Shade to Full Sun

Soil texture: Loam or Sand or Clay

Soil pH: Very Acidic to Slightly Alkaline

Salt spray tolerance: High

CONSIDERATIONS

Branch strength: Medium

Root damage potential: Low

Potential health issues: No known hazards

Biogenic emissions: Low

Wildlife interactions: Attracts birds

Disease and pest susceptibility: Root Rot, Rust, Verticillium, Virus

Powerline friendly: No

CITE THIS TREE

SelectTree. UFEI. "Prunus ilicifolia subsp. lyonii Tree Record." 1995-2022. Cal Poly State University, San Luis Obispo. Accessed on Jul 20, 2022.

< <https://selecttree.calpoly.edu/tree-detail/1167> >

Useful Websites With Searchable Plant Selection Engines

- Urban Forest Ecosystem/Cal Poly: <https://selectree.calpoly.edu>
- WUCOLS IV (Water Use Classification of Landscape Species): <http://ucanr.edu/sites/WUCOLS>
- California Native Plant Society: <http://www.calscape.org>

Urban Forest Ecosystem/Cal Poly

<https://selectree.calpoly.edu>

Screenshots of its use are covered in the next few slides

[Search by Name](#)[Search Trees by Characteristics](#)[Search Help](#)[About SelecTree](#)[Right Tree Right Place](#)[Utility Precautions](#)[Browse securely](#)

SelecTree: Right Tree Right Place

Trees & shrubs are an important part of the environment and the communities that we live in. Use the health and safety links below to help avoid future conflicts with your valued plantings.

[Utility Precautions](#)[Hazardous Trees](#)[Fire Safety](#)[Tree Maintenance](#)[Root Damage](#)[Allergy & Toxicity](#)[Invasive Plants](#)[Biogenic Emissions](#)

[Utility Precautions](#)

Planting or pruning trees near utility lines requires careful consideration. Look for the utility friendly icon  in search results lists. See [Utility Precautions](#) for more information.



Quercus stellata

Branches droop but resist breakage...

Photo by C. Stubler, W. Mark and J. Reimer

Search Trees By Name

Trees can be searched by their common or scientific name.



CAL POLY

SEARCH BY CHARACTERISTICS

TREE CHARACTERISTICS

MAXIMUM TREE HEIGHT

0ft 100ft
0 25 50 75 100+

IS CA NATIVE?

Yes

HAS FALL COLOR?

Yes

POWERLINE FRIENDLY?

Yes

TREE SHAPE

Select... | v

LEAF FORM

Select... | v

FOLIAGE TYPE

Select... | v

LEAF ARRANGEMENT

Select... | v

FLOWERS & FRUIT

FLOWER COLOR

Select... | v

FRUIT TYPE

Select... | v

HAS FRAGRANCE?

Yes

SEARCH TERM

TYPE IN A TERM TO SEARCH



SELECTTREE

URBAN TREE KEY

CALIFORNIA BIG TREES

SUNSET CLIMATE ZONE

19 x 18 x 13 x | x | v

AVAILABLE PLANTING AREA

Select... | v

UTILITY PRECAUTIONS

Medium Zone Low Zones

SELECTTREE WATER USE RATING

Very Low Low Medium High

SUN EXPOSURE

Sun Partial Shade Full Shade

CLEAR ALL FILTERS

SEARCH

This search is a “search trees by characteristics” rather than “by name” search. It is for a drought resistant tree in desert and valley Sunset zones in Riverside County.

SelectTree

A TREE SELECTION GUIDE



SEARCH PACIFIC ISLANDS

Click here to search trees in the Pacific Islands



SEARCH CHARACTERISTICS

Search by height, flower color, and more.



SEARCH HELP

Find more information to help with your search.

312 TREES

[REFINE FILTER](#)

results per page

[1](#)[2](#)[3](#)[4](#)[...](#)[11](#)[>](#)[»](#)

FEATHER BUSH

Lysiloma watsonii

FAMILY Fabaceae

See all *Lysiloma*

SYNONYMS

Lysiloma thornberi

Lysiloma microphylla var. *thornberi*

ADDITIONAL COMMON NAMES

FERN-OF-THE-DESERT







GENERAL INFO

Large spreading shrub with hard brittle wood. Has dense, feathery canopy. Handsome ornamental. Native in the foothills of the Rincon Mountains of Arizona.

Native range: Arizona

Horticultural use: Screen

TREE CHARACTERISTICS

Tree shape: Rounded or Vase

Foliage type: Partly Deciduous - Evergreen

Maximum tree height: 15 feet

Canopy width: 12-15 feet

Growth rate: ~24 in/year

Leaf arrangement and form: Alternate, Bipinnately Compound

Leaf/leaflet shape: Oblong

Leaf color: Green

Flower color: White.

Flower type: Has male and female reproductive parts in each flower (perfect)

Flowering time: Spring

Fruit: Very Large Brown Legume

Fruiting time: Fall

Bark: Dark Gray or Light Gray, Scaly, Smooth

Litter: Dry Fruit



SITE CONDITIONS

Planting area: 2' to 5'

SelecTree Water Use Rating: Low

Sunset zones: 12 - 24

USDA zones: 9, 10, 11

Sun exposure: Partial Shade to Full Sun

Soil texture: Loam or Sand

Soil pH: Slightly Acidic to Very Alkaline

Salt spray tolerance: Moderate

CONSIDERATIONS

Branch strength: Medium Weak

Root damage potential: Low

Potential health issues: No known hazards

Wildlife interactions: Tree is deer resistant and attracts birds

Disease and pest resistance: Texas Root Rot

Powerline friendly: Yes

CITE THIS TREE

SelecTree. UFEI. "Lysiloma watsonii Tree Record." 1995-2022. Cal Poly State University, San Luis Obispo. Accessed on Jul 20, 2022.
< <https://selectree.calpoly.edu/tree-detail/834> >

GENERAL INFO

Chitalpa is an intergeneric cross between *Catalpa bignonioides* and *Chilopsis linearis*. It is an unusual small flowering accent tree, especially useful in riparian or native garden settings, usually multi-trunked or low-branching. It blooms best in full sun, when it receives moderate moisture. It becomes taller in half shade. Its grayish-white bark presents an interesting silhouette in winter with its bare branches. It generally remains below 25 in height.

Horticultural use: Screen

TREE CHARACTERISTICS

Tree shape: Rounded or Vase

Foliage type: Deciduous

Maximum tree height: 35 feet

Growth rate: ~36 in/year

Leaf arrangement and form: Opposite, Simple

Leaf/leaflet shape: Spear-shaped

Leaf color: Bluish Green or Silver or Gray Green

Fall color: Yes

Flowers: Showy

Flower color: Pink.

Flower type: Has male and female reproductive parts in each flower (perfect)

Flowering time: Fall, Spring or Summer

Fruit: Very Large Brown, Beige or Mostly Green Capsule

Fruiting time: Fall

Fruit value: Wildlife use it

Bark: Light Green, Scaly

Litter: Wet Fruit, Flowers



SITE CONDITIONS

Planting area: 5' to 10'

SelecTree Water Use Rating: Low

Sunset zones: 3 - 24

Sun exposure: Partial Shade to Full Sun

Soil texture: Loam or Sand

Soil pH: Slightly Acidic to Very Alkaline

Salt spray tolerance: Moderate

CONSIDERATIONS

Branch strength: Medium Weak

Root damage potential: Low

Potential health issues: No known hazards

Wildlife interactions: Tree is deer resistant

Disease and pest susceptibility: Root Rot, Verticillium and Aphids

Powerline friendly: No

CITE THIS TREE

SelecTree. UFEI. "Chitalpa tashkentensis 'Pink Dawn' Tree Record." 1995-2022. Cal Poly State University, San Luis Obispo. Accessed on Jul 20, 2022.
< <https://selectree.calpoly.edu/tree-detail/280> >

Chaste Tree

Vitex agnus-castus



CHASTE TREE

Vitex agnus-castus

FAMILY Verbenaceae

See all *Vitex*

SYNONYMS

ADDITIONAL COMMON NAMES



GENERAL INFO

Chaste Tree usually becomes a large shrub, or small tree if the trunks are trained and pruned. Its summer flowering is especially attractive, and it is quite useful in a water conserving or dry garden setting. It tolerates dry ordinary soils without much care other than occasional deep watering. It is resistant to oak root fungus and durable. Its height rarely exceeds 25.

Native range: Mediterranean Region

Horticultural use: Screen

TREE CHARACTERISTICS

Tree shape: Rounded or Vase

Foliage type: Deciduous

Maximum tree height: 15 feet

Canopy width: 15-20 feet

Growth rate: ~24 in/year

Leaf arrangement and form: Opposite, Palmately Compound

Leaf/leaflet shape: Elliptic

Leaf color: Bluish Green or Silver or Gray Green

Fall color: Yes

Flowers: Showy, Fragrant

Flower color: Blue or Lavender.

Flowering time: Fall or Summer

Fruit: Small Black Drupe

Fruiting time: Fall or Summer

Bark: Dark Gray or Light Gray, Blocky, Furrowed, Smooth

Litter: Dry Fruit

SITE CONDITIONS

Planting area: 2' to 5'

SelecTree Water Use Rating: Low

Sunset zones: 4 - 24

USDA zones: 6, 7, 8, 9, 10

Sun exposure: Partial Shade to Full Sun

Soil texture: Loam or Sand or Clay

Soil pH: Very Acidic to Very Alkaline

Soil salinity tolerance: Good Inland

Salt spray tolerance: Moderate

CONSIDERATIONS

Branch strength: Medium Weak

Root damage potential: Low

Potential health issues: No known hazards

Wildlife interactions: Tree is deer resistant and attracts bees

Disease and pest resistance: Armillaria

Powerline friendly: Yes

CITE THIS TREE

SelecTree. UFEI. "Vitex agnus-castus Tree Record." 1995-2022. Cal Poly State University, San Luis Obispo. Accessed on Jul 20, 2022.

< <https://selecttree.calpoly.edu/tree-detail/1464> >

Fringe Tree

(*Chionanthus virginicus*)

FRINGE TREE

Chionanthus virginicus

FAMILY Oleaceae

See all *Chionanthus*

SYNONYMS

ADDITIONAL COMMON NAMES

GRANCY GRAYBEARD



GENERAL INFO

Beautiful panicles of creamy white flowers. A tall shrub or small tree that could grow a bit taller in the right conditions but usually only grows to 20 feet or less.

Native range: Southeastern United States

Horticultural use: Screen

TREE CHARACTERISTICS

Tree shape: Rounded
Foliage type: Deciduous

Maximum tree height: 20 feet
Canopy width: 12-20 feet
Growth rate: ~12 in/year

Leaf arrangement and form: Alternate, Simple
Leaf/leaflet shape: Oblong
Leaf color: Green
Fall color: Yes

Flowers: Showy, Fragrant
Flower color: Green or White.
Flower type: Has male and female reproductive parts in each flower (perfect)
Flowering time: Spring

Fruit: Medium Purple or Mostly Blue Drupe
Fruiting time: Winter or Summer
Fruit value: Wildlife use it

Bark: Dark Gray, Light Gray or Red Brown, Furrowed, Scaly, Smooth

Litter: Dry Fruit

SITE CONDITIONS

Planting area: 2' to 5'

SelectTree Water Use Rating: Medium

Sunset zones: 2 - 6, 15 - 24

USDA zones: 4, 5, 6, 7, 8, 9

Sun exposure: Partial Shade to Full Sun

Soil texture: Loam or Clay

Soil pH: Very Acidic to Neutral

Salt spray tolerance: Moderate

CONSIDERATIONS

Branch strength: Medium

Root damage potential: Low

Potential health issues: No known hazards

Wildlife interactions: Tree is deer resistant and attracts birds

Powerline friendly: Yes

CITE THIS TREE

SelectTree. UFEI. "Chionanthus virginicus Tree Record." 1995-2022. Cal Poly State University, San Luis Obispo. Accessed on Aug 24, 2022.

< <https://selecttree.calpoly.edu/tree-detail/348> >

WUCOLS IV (Water Use Classification of Landscape Species):
<http://ucanr.edu/sites/WUCOLS>

This site's main strength is its water use characterizations of plants. It is the gold standard for the CA Dept. of Water Resources. For actual care recommendations and selecting plants by characteristics the <http://selecttree.calpoly.edu> website previously discussed is more useful.

WUCOLS IV

Water Use Classification of Landscape Species

- Home Page
- User Manual
- Plant Search Instructions
- Plant Search Database
- Download WUCOLS IV Plant List
- Download WUCOLS IV User Manual
- Water Requirements for Turfgrasses
- Partners
- Acknowledgements

Home Page

GETTING STARTED

If you are using the WUCOLS list for the first time, it is essential that you read the *User Manual*. The manual contains very important information regarding the evaluation process, categories of water needs, plant types, and climatic regions. It is necessary to know this information to use WUCOLS evaluations and the plant search tool appropriately. To access the *User Manual*, click on the tab (on left) and view specific topics.

Water conservation is an essential consideration in the design and management of California landscapes. Effective strategies that increase water use efficiency must be identified and implemented. One key strategy to increase efficiency is matching water supply to plant needs. By supplying only the amount of water needed to maintain landscape health and appearance, unnecessary applications that exceed plant needs can be avoided. Doing so, however, requires some knowledge of plant water needs.



WUCOLS IV provides evaluations of the irrigation water needs for over 2,500 taxa (taxonomic plant groups) used in California

WUCOLS IV

Water Use Classification of Landscape Species

Plant Search Database

Select a City by Region

- North Central Coastal -
- Central Valley -
- South Coastal -
- South Inland Valley -
- High and Intermediate Desert -
- Low Desert -
-

WUCOLS IV

Water Use Classification of Landscape Species

Plant Search Database

City	San Diego
Region	South Coastal

[Start Over](#) [Search Again](#) [Export List](#)

▼ Legend: Plant Types

▼ Legend: Categories of Water Needs

Search Results: 249

Type	Photo	Botanical Name	Common Name	Water Use	Export
T	N/A	Abies pinsapo	Spanish fir	Low	<input type="checkbox"/>
T		Acacia baileyana	Bailey acacia	Low	<input type="checkbox"/>
S T	N/A	Acacia berlandieri	guajillo	Low	<input type="checkbox"/>
S T	N/A	Acacia constricta	whitethorn acacia	Low	<input type="checkbox"/>
S T		Acacia craspedocarpa	leatherleaf acacia	Low	<input type="checkbox"/>

California Native Plant Society: <http://www.calscape.org/>

The strength of this website is identifying native plants. The weaknesses are that many plants listed no longer thrive under current conditions (e.g.: climate change and urban heat islands). Again, the <http://selectree.calpoly.edu> website has better care recommendations for urban areas

For quick access, place your favorites here on the favorites bar. [Manage favorites now](#)



CALIFORNIA NATIVE PLANT SOCIETY
Calscape
Restore Nature One Garden at a Time

Search for California native plants by name 🔍

[ADVANCED SEARCH](#)

Enter a California address or click the map to see plants native to that location

Moreno Valley

651 plants native to 33.9425,-117.2297 (Moreno valley)



All Plants
651



Trees
27



Shrubs
122



Perennials
184



Annuals
282



Grasses
71



Succulents
14



Vines
16

33.9425,-117.2297(Moreno valley)

Bioregion: South Coast
Annual Precipitation: 10.67"
Summer Precipitation: 0.31"
Coldest Month Avg. Temp: 49.88° F
Hottest Month Avg. Temp: 78.12° F
Humidity: 2.60 - 25.08 vpd

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CALIFORNIA NATIVE PLANT SOCIETY

Calscape*Restore Nature One Garden at a Time*

HOME > TREES

Enter a California address to see trees native to that location

27 trees native to Moreno Valley**Options****Coast Live Oak**

Quercus agrifolia

**Fremont Cottonwood**

Populus fremontii

**Western Sycamore**

Platanus racemosa

**Blue Elderberry**

Sambucus mexicana

**Engelmann Oak**

Quercus engelmannii

**Box Elder**

Acer negundo

**White Alder**

Alnus rhombifolia

**Scrub Oak**

Quercus berberidifolia

For quick access, place your favorites here on the favorites bar. [Manage favorites now](#)



CALIFORNIA NATIVE PLANT SOCIETY

Calscape

Restore Nature One Garden at a Time

Advanced Search

Select desired plant characteristics and then click 'Search' to see matching plants

Native To 

- Type**
- Annual herb
 - Fern
 - Grass
 - Perennial herb
 - Shrub
 - Succulent
 - Tree
 - Vine

- Sun**
- Full Sun
 - Part Shade
 - Full Shade

- Drainage**
- Fast
 - Medium
 - Slow
 -



https://www.calscape.org/search.php



For quick access, place your favorites here on the favorites bar. [Manage favorites now](#)

Water Requirement

- Extremely Low
- Very Low
- Low
- Moderate - High

Ease of Care

- Very Easy
- Moderately Easy
- Fairly Difficult
- Very Difficult

Common Uses

- Bank Stabilization
- Bee Gardens
- Bird Gardens
- Bogs and Ponds
- Butterfly Gardens
- Butterfly Host Plants
- Deer Resistant
- Groundcovers
- Hedges
- Hummingbird Gardens

Availability in Nurseries

- Commonly Available
- Sometimes Available
- Rarely Available
- Never or Almost Never Available
- Available Through Seed Stores

Nurseries

- 3 Rivers Blooms
- Ackerman Native Plant Nursery
- Alladin Nursery & Gift Shop
- Almaden Valley Nursery



https://www.calscape.org/search.php

For quick access, place your favorites here on the favorites bar. [Manage favorites now](#)

- Back to Natives Nursery @ Santiago Park
- Bay Natives
- Rav Natives

Fragrance

- Fragrant - Pleasant
- Fragrant - Unpleasant
- None
- Slight

Flower Color

- Black
- Blue
- Brown
- Cream
- Green
- Lavender
- Orange
- Pink
- Purple
- Red
- White
- Yellow

Flowering Season

- Spring
- Summer
- Fall
- Winter

Height

- Feet Inches

Genus



Advanced Search Results

Options

Edit Search

14 Plants. Native to: **moreno valley**. Type: **Tree**. Water Requirement: **Extremely Low, Very Low, Low**.

- | | | | | | | | | | |
|--|---|--|---|--|--|--|--|--|--|
| 1  | Coast Live Oak
Quercus agrifolia | 2  | Blue Elderberry
Sambucus mexicana | 3  | Engelmann Oak
Quercus engelmannii | 4  | Scrub Oak
Quercus berberidifolia | 5  | Nuttall's Scrub Oak
Quercus dumosa |
| 6  | Hollyleaf Cherry
Prunus ilicifolia | 7  | Leather Oak
Quercus durata | 8  | California Juniper
Juniperus californica | 9  | Red Shanks
Adenostoma sparsifolium | 10  | Honey Mesquite
Prosopis glandulosa |
| 11  | Mesquite
Prosopis glandulosa var. torreyana | 12  | Black Elderberry
Sambucus nigra | 13  | Interior Live Oak
Quercus wislizeni | 14  | Northern California Black Walnut
Juglans hindsii | | |

Example of Tree With These Criteria



CALIFORNIA NATIVE PLANT SOCIETY
Calscape
Restore Nature One Garden at a Time

Search for California native plants by name

[ADVANCED SEARCH](#)

[HOME](#) > [ADVANCED SEARCH](#) > [ADENOSTOMA SPARSIFOLIUM](#) | [PREVIOUS](#) [NEXT](#)

Red Shanks

Adenostoma sparsifolium



For quick access, place your favorites here on the favorites bar. [Manage favorites now](#)

tetra

franciscana

Landscaping Information



Sun
Full Sun



Moisture
Very Low



Summer Irrigation
Max 1x / month
once established



Nurseries
[Carried by 9](#)



Ease of Care
Moderately Easy



Cold Tolerance
Tolerates cold to
10° F



Soil Drainage
Fast, Medium,
Slow



Soil Description

Tolerates a variety of soils including decomposed granite, sand and clay. Soil PH: 6.2 - 7.2



Common uses

Hedges, Bank Stabilization, Bee Gardens



Companion Plants

Use with other shrubs of inland chaparral such as [California Copperleaf](#) (*Acalypha californica*), [Yarrow](#) (*Achillea millefolium*), [Manzanita](#) (*Arctostaphylos* sp.), [Milkweed](#) (*Asclepias* sp.), [Ceanothus](#) sp., [Mountain Mahogany](#), (*Cercocarpus betuloides* or *minutiflorus*), [Bush Poppy](#) (*Dendromecon rigida*), [Coffeeberry](#) (*Frangula* sp.), [Flannelbush](#) (*Fremontodendron californicum* or *mexicanum*), [Chaparral Yucca](#) (*Hesperoyucca whipplei*), [Penstemon](#) sp., [Bladderpod](#) (*Peritoma arborea*), [Redberry](#) (*Rhamnus crocea*), [Sumac](#) (*Rhus* sp.), [Matilija Poppy](#) (*Romneya coulteri*), [Sage](#) (*Salvia* sp.), and [Mojave Yucca](#) (*Yucca shidigera*)



Propagation?

For propagating by seed: No treatment. Soaking in 10% H2SO4 for 15 mins. may improve germination.



Sunset Zones?

7, 8, 9, 14*, 15*, 16*, 17, 18*, 19*, 20*, 21*, 22, 23, 24

Natural Setting



Site Type

Dry slopes, foothills and valleys, generally inland, from San Luis Obispo County southward



Climate

Annual Precipitation: 5.9" - 32.5", Summer Precipitation: 0.15" - 3.08", Coldest Month: 37.7" - 55.2", Hottest Month: 60.5" - 84.1", Humidity: 0.96" - 35.01", Elevation: -30" - 7263"

Alternative Names



Common Names: Redshanks

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CALIFORNIA NATIVE PLANT SOCIETY

Calscape*Restore Nature One Garden at a Time*

Enter a California address to see trees native to that location

8 trees native to Indio**Options**

+

**Fremont Cottonwood**

Populus fremontii

1

+

**Honey Mesquite**

Prosopis glandulosa

2

+

**Blue Palo Verde**

Parkinsonia florida

3

+

**Screwbean Mesquite**

Prosopis pubescens

4

+

**Mesquite**

Prosopis glandulosa var. torreyana

5

+

**Smoke Tree**

Psoralea arguta

6

+

**Fan Palm**

Washingtonia filifera

7

+

**Fremont Cottonwood**

Populus fremontii ssp. fremontii

8

Keys to Successful Plant Problem Diagnosis

Questions, Questions, Questions!
(It's an art and a science!)



Remember this Diagnostic Lifeboat
To Help You Identify Insect, Disease, and Abiotic
Problems!

<https://www2.ipm.ucanr.edu/diagnostics/>



For quick access, place your favorites here on the favorites bar. [Manage favorites now](#)



Plant problem diagnostic tool

Plant Types >

Plant Names

Plant Parts

Damage

Select plant types for list of results

Select plant types

+ Add to my list



Flowers

+ Add to my list



Fruit trees, nuts, berries, and grapevines

+ Add to my list



Trees and shrubs

+ Add to my list



Vegetables and melons

For quick access, place your favorites here on the favorites bar. [Manage favorites now](#)



Plant problem diagnostic tool

Plant Types >

Trees and shrubs

🌲 Plant Names

🌿 Plant Parts

🐛 Damage

View Results (163)

Select plant types

+ Add to my list



Flowers

+ Add to my list



Fruit trees, nuts, berries, and grapevines

- Remove from list



Trees and shrubs

+ Add to my list



Vegetables and melons

or quick access, place your favorites here on the favorites bar. [Manage favorites now](#)



Plant problem diagnostic tool

🌿 Plant Types

Trees and shrubs ✖

🌳 Plant Names

🌿 Plant Parts

🔍 **Damage** >

View Results (163)

🔍 Select damage

<p>+ Add to my list 🔍</p>  <p>Fruit / Bumps, warty, rough, leathery</p>	<p>+ Add to my list 🔍</p>  <p>Stems / Cankers</p>	<p>+ Add to my list 🔍</p>  <p>Twigs/branches / Cankers, wounds</p>	<p>+ Add to my list 🔍</p>  <p>Trunk / Cankers, wounds, stains</p>	<p>+ Add to my list 🔍</p>  <p>Shoots / Chewed, boring</p>
<p>+ Add to my list 🔍</p>  <p>Trunk / Chewed, holes, tunnels, mines, frass, sawdust</p>	<p>+ Add to my list 🔍</p>  <p>Roots / Chewed, tunneling</p>	<p>+ Add to my list 🔍</p>  <p>Twigs/branches / Cottony growth, spores</p>	<p>+ Add to my list 🔍</p>  <p>Fruit / Cottony, spores</p>	<p>+ Add to my list 🔍</p>  <p>Needles / Cottony, webbing</p>

[Crown gall](#)

[Cryptomeria blight](#)

[Cutworms](#)

[Cyclamen mite](#)

[Cypress bark mealybug](#)

[Cypress bark moths](#)

[Cypress bark scale](#)

[Cypress tip miner](#)

[Damping-off diseases](#)

[Dematophora root rot](#)

[Downy mildew of roses](#)

[Drippy oak \(drippy acorns\)](#)

[Dutch elm disease](#)

[Eastern filbert blight](#)

[Edema](#)

[Elm leaf beetle](#)

[Entomosporium leaf spot](#)

[Escallonia dieback](#)

[Eucalyptus longhorned](#)

[Hairy root](#)

[Honeylocust pod gall
midge](#)

[Hoplia beetle](#)

[Injuries](#)

[Juniper twig girdler](#)

[Lace bugs](#)

[Lead cable borer](#)

[Leaf and bud drop](#)

[Leaf beetles](#)

[Leaf burn or scorch](#)

[Leaf drop \(natural
senescence\)](#)

[Leaf gall](#)

[Leaf scorch](#)

[Leaf spot](#)

[Leaf spot diseases](#)

[Leafcutting bees](#)

[Leaffooted bug](#)

[Pine needle weevils](#)

[Pine weevils](#)

[Pinewood nematode](#)

[Pit scales](#)

[Pitch canker](#)

[Pitch moths](#)

[Poplar and willow borer](#)

[Potato psyllid](#)

[Powdery mildew](#)

[Premature bud drop](#)

[Pseudonectria canker
\(volutella canker and
blight\)](#)

[Psyllids](#)

[Raspberry horntail](#)

[Redhumped caterpillar](#)

[Rose curculio](#)

[Roundheaded \(longhorned\)
borers](#)

For quick access, place your favorites here on the favorites bar. [Manage favorites now](#)



Plant problem diagnostic tool

🌿 Plant Types

Trees and shrubs ✖

🌳 Plant Names

🌿 Plant Parts

🌿 Damage ➤

Trunk / Cankers, wounds, stains ✖

View Results (13)

🌿 Select damage

[+ Add to my list](#) 🔍



Fruit / Bumps, warty, rough, leathery

[+ Add to my list](#) 🔍



Stems / Cankers

[+ Add to my list](#) 🔍



Twigs/branches / Cankers, wounds

[+ Remove from list](#) 🔍



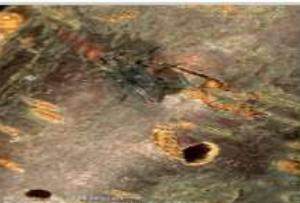
Trunk / Cankers, wounds, stains

[+ Add to my list](#) 🔍



Shoots / Chewed, boring

[+ Add to my list](#) 🔍



Trunk / Chewed, holes, tunnels, mines, frass, sawdust

[+ Add to my list](#) 🔍



Roots / Chewed, tunneling

[+ Add to my list](#) 🔍



Twigs/branches / Cottony growth, spores

[+ Add to my list](#) 🔍



Fruit / Cottony, spores

[+ Add to my list](#) 🔍



Needles / Cottony, webbing

For quick access, place your favorites here on the favorites bar. [Manage favorites now](#)



Plant problem diagnostic tool



Results for: trees and shrubs, cankers, wounds, stains

- [American plum borer](#)
- [Anthracnose](#)
- [Canker diseases](#)
- [Canker stain \(ceratocystis canker\)](#)
- [Collar, foot, root, and crown rot](#)
- [Cypress bark moths](#)
- [Fire blight](#)
- [Injuries](#)
- [Pine needle weevils](#)
- [Pine weevils](#)
- [Pitch canker](#)
- [Sudden oak death](#)
- > Sunburn, sunscald, or excessive or inadequate light**
- [Wetwood or slime flux](#)

← Back to diagnostics

Sunburn

Sunburn is damage to bark, foliage, fruit, and other aboveground plant parts caused by excessive exposure to solar radiation. Sunburn injury to bark increases tree susceptibility to wood-boring pests and contributes to tree decline and premature death.

Sunburn is usually associated with warm weather and often with insufficient soil moisture availability. Sunburn is common in new plantings that lack a well-developed root system. Restricted soil volumes, inappropriate soil moisture, or anything that makes roots unhealthy or prevents plants from absorbing adequate water may contribute to sunburn. Even in soil that is saturated with water, sunburn may occur.

Sunburn often occurs on the stems or trunks of young woody plants. Their bark is thin, and they may not tolerate being exposed to direct sun in landscapes, especially if they were grown close together in nurseries where their trunks were shaded.

Older trees can be damaged when bark is newly exposed to the sun because of pruning or premature leaf drop. Removing structures or trees that provided shade or adding pavement or structures that reflect light or radiate heat around established plants can also lead to sunburn.

Identification

Usually sunburn injury is most severe, or present only, on the south and west sides of plants and on the upper side of horizontal branches that are not adequately shaded. Sunscald, certain [canker disease](#) pathogens, [water deficit](#), and certain other disorders can cause bark damage that resembles sunburn.

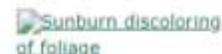
Sunburned bark may discolor, and if the injury is recent it may ooze sap. As affected tissue dries, it becomes cracked or sunken, bark may peel away, and the wood may be attacked by boring insects and decay fungi. Sunburned trunks and limbs can become cankered or girdled and killed.

Sunburned broadleaf foliage may appear glazed (abnormally shiny), silvery, or reddish brown and may progress to necrosis beginning at leaf tips, margins, and between veins. Sunburned conifer needles turn black or brown or drop prematurely.

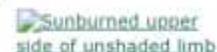
Solutions

Plant where roots will have adequate soil volume and sufficient growing space as they mature. Choose plants that are well adapted to the [local environment](#), [plant properly](#), and provide appropriate cultural care. Avoid anything that damages roots or prevents them from absorbing sufficient nutrients or water, including [irrigating](#) too frequently.

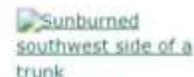
Encourage desired branch structure by [properly pruning](#) and training plants while they are young. Retain some temporary lower branches that help shade the trunk, avoid pruning during summer, and avoid pruning off more than about 20% of the plant canopy during any one year. Apply and maintain appropriate mulch to conserve soil moisture and reduce soil temperatures during summer. Minimize changes to a plant's environment unless deliberately done to improve conditions.



Sunburn discoloring of foliage



Sunburned upper side of unshaded limb



Sunburned southwest side of a trunk



**Tree Walk Photo Shares
from UCCE Master
Gardeners of Orange, San
Bernardino, Los Angeles
and Riverside Counties**



Robin R.

# and Tree common name	Palm tree (Y/N)	Is tree too close to structures? Y/N	Is tree causing buckled sidewalks, streets, or driveways? Y/N	Is it staked too tightly? Y/N/NA	Is there evidence of being topped?	Is turf or groundcover growing around tree trunk?	Is irrigation water from sprinklers likely hitting tree trunk?	Other issues? (Please list)	Photo?	
					Y/N	Y/N	Y/N/Unknown		Y/N	
1	Canary Island pine	N	possibly in the future	no	NA	N	N	N	New sapling; <5 years	Y
2	Chinese fringe tree	N	N	no	NA	N	N	N	New sapling; <5 years	Y
3	Camphor	N	N	maybe	NA	Y (recent)	N	N	Fake turf and gravel just replaced turf, and was recently topped so it's awful now	Yes, before and after
4	Carrotwood	N	N	N	NA	N	Y	N	Drought stressed, should be removed	
5	Carrotwood	N	N	N	NA	N	Y	N	Needs water to survive	
6	Weeping bottlebrush	N	maybe	N	NA	N	Y	N	Beautiful mature tree, much larger than specs say they in Zone 23	
7	California sycamore	N	maybe	N	NA	Y	N	N	Needs water, mature & large	

A	B	C	D	E	F	G	H	I	J	K
8	Evergreen pear	N	N	N	NA	Y	Y	N	fireblight, but otherwise okay	
9	Fern pine	N	N	N	NA	Y	Y	Y	repeatedly topped	Y
10	Strawberry tree	N	N	N	NA	Y at nursery	N	N	Younger <10 years ; poor nursery stock	
11	Guadalupe palms (2)	Y	N	N	NA	N	Y	N	Nice, mature, smaller palms, always look good, no pruning needed	
12	Goldenrain tree (2)	N	N	N	N	N	Y	N	2 seedlings - just planted (one is already dead)	
13	Camphor (2)	N	N	N	NA	Y	Y	N	sickly parkway trees	
14	Mesquite	N	N	N	Y	N	Y	Y	bad nursery stock, planted poorly; struggling	
15	Jacaranda	N	N	N	NA	N	Y	N	healthy and flourishing	
16	Weeping bottlebrush (2)	N	N	N	NA	Y	Y	Y	regularly whacked by gardeners	
17	Crape myrtle	N	N	N	NA	N	N	N	Nice, multi	
18	Japanese maple (unknown cultivar)	N	N	N	NA	N	N	N	Beautiful; and doing amazingly well in Zone 23	
19	Deodar cedar	N	Y	N	NA	N	N	N	Awesome mature skyline tree	
20	Aleppo pine	N	N	N	NA	N	N	N	Was once Xmas tree	
21	Crape myrtle (Natchez)	N	N	N	NA	N	N	N	Lovely single-trunk; <10 years old	
22	Apple (Anna)	N	N	N	NA	N	N	N	fruiting	
23	Brisbane box (2)	N	N	N	NA	Y	N	N	Power line issues	
24	Mexican fan palms (4)	Y	N	N	NA	N	N	N	Parwkays speciems are very tall; and will soon outsize the cherry pickers	

Tree Care Checklist to use for Pre-Class Assignment

(UCCE Los Angeles County Trainees)

Tree # (address optional)	Palm Tree? Y/N	Is tree too close to structures? (Y/N)	Is tree causing buckled sidewalks, streets, or driveways? Y/N	Is tree staked too tightly? (N/A) or Y/N	Is there evidence of tree being topped? Y/N	Is turf or groundcover growing around tree trunk? Y/N	Is irrigation water from sprinklers likely hitting tree trunk? Y/N/Unknown	Other issues? (Please list)	Photo? Y/N (email it to jshartin@ucanr.edu)
South Pasadena	N	N	Yes	NA	N	N	Y	close to street and other plants	Y
South Pasadena	N	N	YES	NA	N	Y	Y	CLOSE TO STREET	Y
SOUTH PASADENA	N	YES FENCE	N	NA	N	N	N	HUMAN TRAFFIC	Y
SOUTH PASADENA	N	YES FENCE	N	N	N	Y	N	ENCLOSED PLANTER	Y









Lucia: worksheet and tree in wrong location

Lot/Tree number (e.g.: enter all the trees in front of the first house as 1/1, 1/2, 1/3, etc.)	Palm Tree? Y/N	Is tree too close to structures? (Y/N)	Is tree causing buckled sidewalks, streets, or driveways? Y/N	Is tree staked too tightly? (N/A) or Y/N	Is there evidence of tree being topped? Y/N	Is turf or groundcover growing around tree trunk? Y/N	Is irrigation water from sprinklers likely hitting tree trunk? Y/N/Unknown	Other issues? (Please list)	Photo? Y/N (upload 2-3 per walk in VMS under the 'Trees for Tomorrow' photo album)
1	Y	N	N	N	N	N	U		N
2	N	N	N	N	N	Y	U		N
3	N	N	Y	N	N	Y	U		N
4	N	N	N	N	Y	Y	U	Growing at an angle	N
5	N	N	N	N	N	Y	U		N
6	N	N	Y	N	N	Y	U		N
7	N	N	N	N	Y	N	U		N
8	N	N	N	N	N	Y	U		N
9	N	N	N	N	Y	N	U		N

10	Y	N	N	N	N	N	U		N
11	N	Y	Y	N	N	N	U		N



Susan S. Tree #1: buckled sidewalk, pavement

Tree Care Checklist

Please consider emailing results and a few photos to Janet Hartin (jhartin@ucanr.edu) before her presentation on 7/21. She'll include a few in her presentation.

(Note, you do not need to include actual addresses; you may just label trees #1, #2, etc.)

Tree # (address optional)	Palm Tree? Y/N	Is tree too close to structures? (Y/N)	Is tree causing buckled sidewalks, streets, or driveways? Y/N	Is tree staked too tightly? (N/A) or Y/N	Is there evidence of tree being topped? Y/N	Is turf or groundcover growing around tree trunk? Y/N	Is irrigation water from sprinklers likely hitting tree trunk? Y/N/Unknown	Other issues? (Please list)	Photo? Y/N
1	N	N	Y	N	N	N	N		
#2	N					Y			
#4			Y						
#5		Y							
#3		Y							
#6						Y			



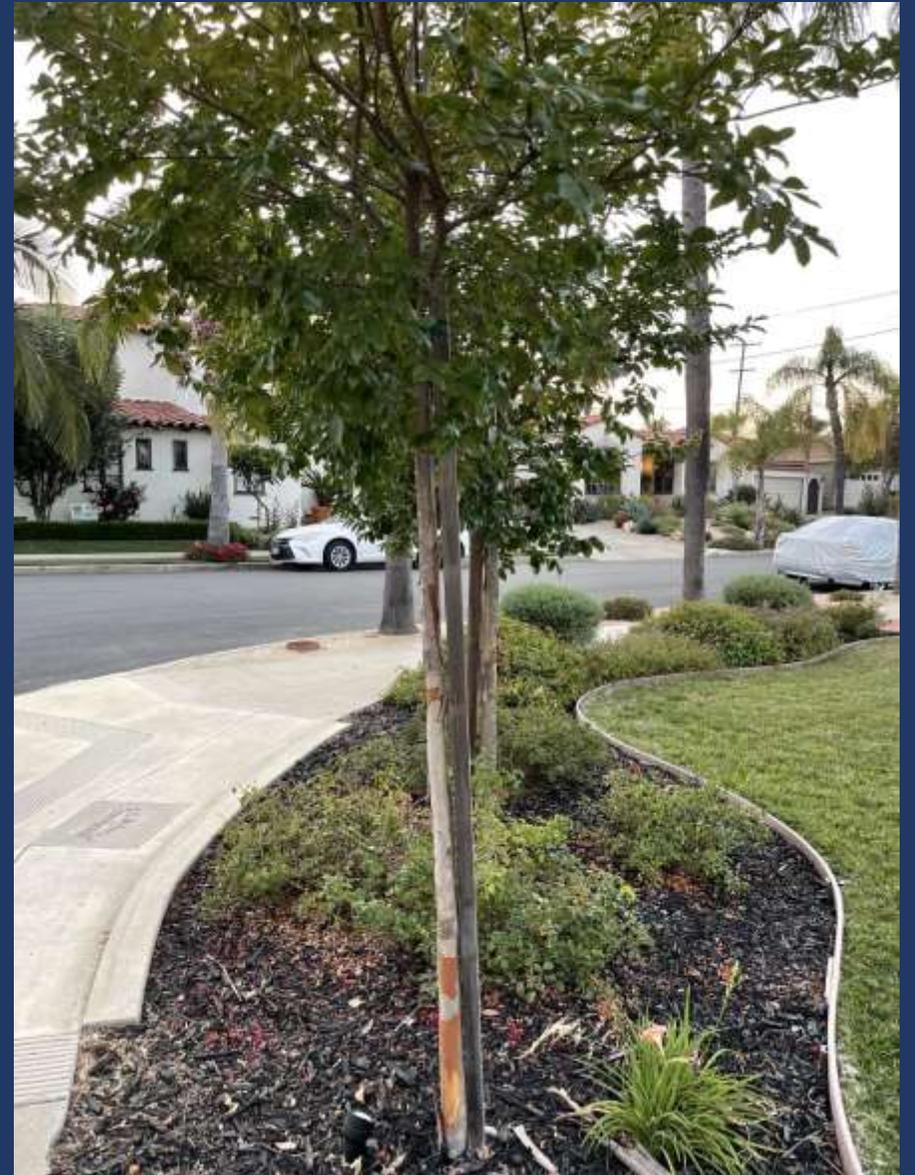
Susan S: Tree too close to structure, vegetation around tree



Whitney and Susan S: Powerline Issues



DeLayne: Topped tree w/turf issues;
staking needs to be loosened



Nancy H. and Jacqui: Topped/hacked trees



Lynn L: Water hitting trunk

Tree Care Checklist

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Balboa Park	N		N	N/A	N	N	Unknown		Y
Bankers Hill	N	N	N	N/A	N	Y	Y		Y
Penasquits	N	Y	N	N/A	N	N	Y		Y



Carvill V.

Tree Care Checklist

Please consider emailing results and a few photos to Janet Hartin (jhartin@ecampus.utk.edu) before her presentation on 7/21. She'll include a few in her presentation.

(Note, you do not need to include actual addresses; you may just label trees #1, #2, etc.)

Tree # (address optional)	Palm Tree? Y/N	Is tree too close to structures? (Y/N)	Is tree causing buckled sidewalks, streets, or driveways? Y/N	Is tree staked too tightly? (N/A) or Y/N	Is there evidence of tree being topped? Y/N	Is turf or groundcover growing around tree trunk? Y/N	Is irrigation water from sprinklers likely hitting tree trunk? Y/N/Unknown	Other issues? (Please list)	Photo? Y/N
① PINE LAKE QUINCY PARK 2060	N	Y	BUCKLED SIDEWALK	N	N	N	N	IRRIGATOR ROOTS	Y
② LONG KING ORANGE	N	N	N	N	N		Y	WELL ALL Y/N	Y
③ EAGLE HILL TREE LAWN	N	N		Y					
③ FORECASTLE EQUINE	N	maybe	NO	Y	Y	N	Y	TO CLOSE MATURE	Y
④ MAGNOLIA FIRE	N	N	N	Y	N	Y	Y	Double staked	Y

And Some Good Examples!



A photograph of a garden with two green metal benches, a paved path, and lush greenery under a large tree.

**Thank You
Questions?**

**Janet Hartin
jshartin@ucanr.edu**



University of California

Agriculture and Natural Resources



“Climate Change, Urban Heat Islands and Horticulture”

UCCE Master Gardeners of Riverside County

Janet Hartin

Environmental Horticulture Advisor

L.A., Riverside, and San Bernardino Counties

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