Select Climate-Ready Plants Like a Pro

emwd

CLIMATE READY
LANDSCAPE ACADEMY

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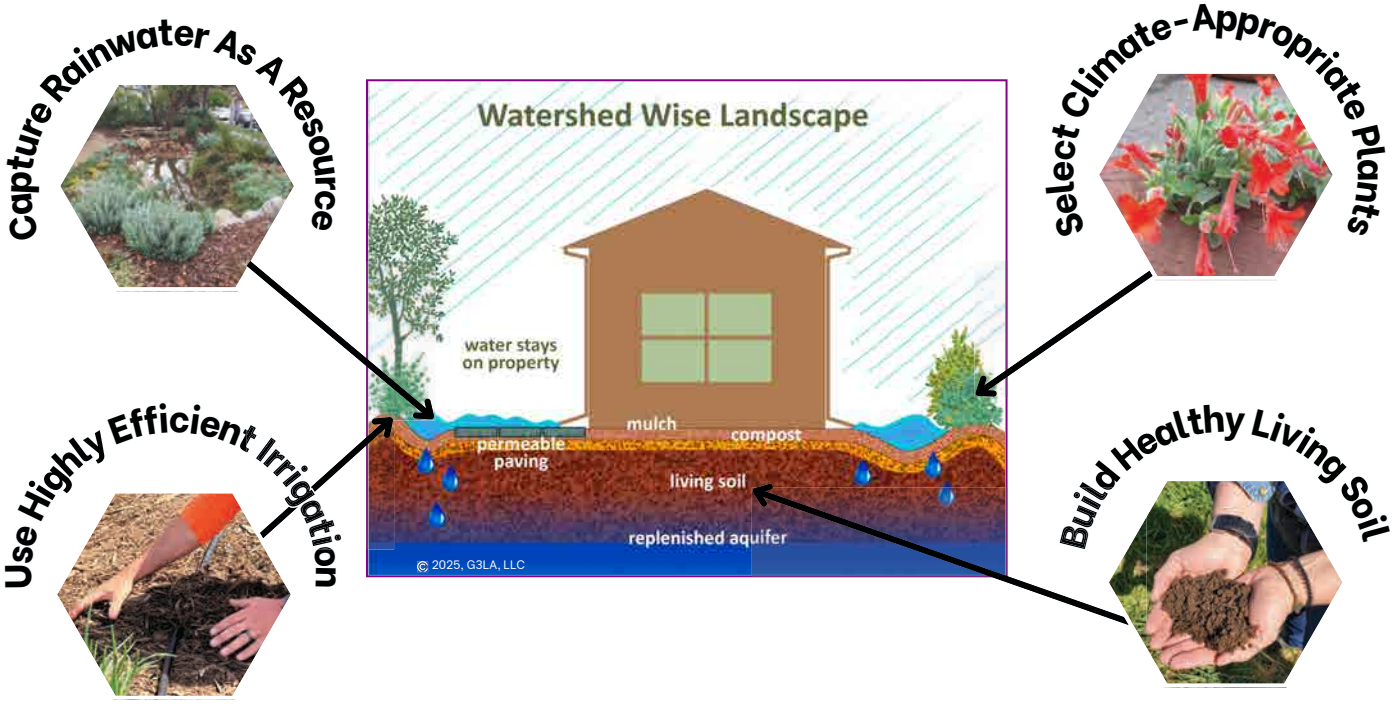
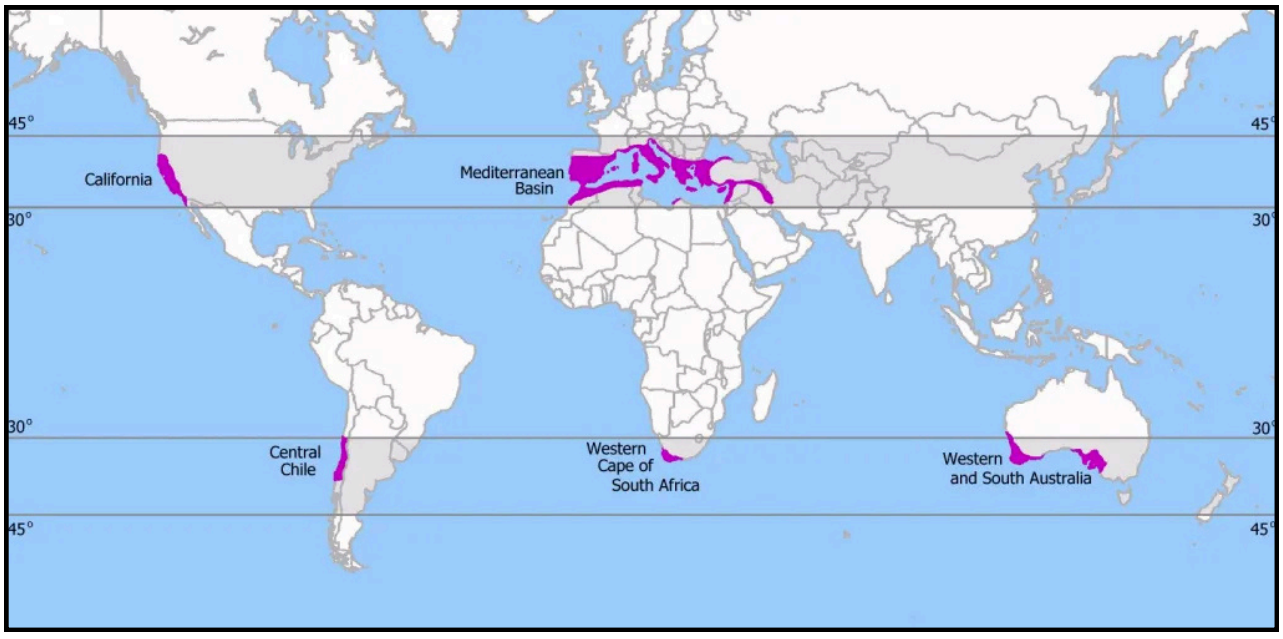
Concepts Covered

What is Climate-Ready?

Watershed Wise Approach Works for All Landscapes





California's Mediterranean Climate is the driest.

Describe the Climate Differences Between These Places

What Defines (Macro)Climate in Your Place?

The macro-climate is the climate of a particular region, not specifically within your landscape. Here are some examples of determinants of macro-climate:

- Rainfall
- Snowfall
- Wind
- Fog
- Solar radiation/intensity
- Altitude
- Number of sunny days
- Seasonal length of days
- Average temperatures
- Annual temperature variations
- Timing of precipitation
- Geographic influences:
  - Basin
  - Foothills
  - Mountain
  - Costal
  - Uplands
  - Inland

EMWD Climate Zones

Sunset Zone 18: Upland Central Interior Valley

Hot dry summers make shade essential in this interior valley, yet winters can be cold as cooled air settles in the valley floors. Plants requiring winter chill do well in this climate. Winter rainfall up to 13" and occasional snow flurries are possible. Santa Ana winds increase fire risk in autumn months.

Sunset Zone 19: Thermal Belt Around Interior Valley

This marine to desert transition area (more inland and near the dry desert areas) is milder than Zone 18. The combination thermal belts and cold-air basins and hilltops with occasional marine influence create high fog or dry Santa Ana winds.

Plant Adaptations to Mediterranean Climates

Leathery Leaves

Tiny Leaves

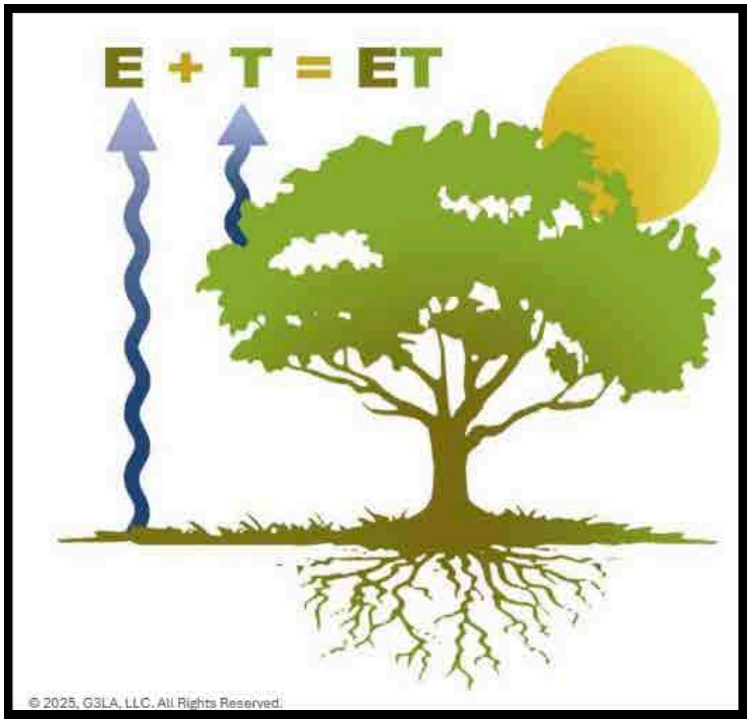
Hairy/SilverLeaves

Can You Spot the Adaptations in These Gardens?

This garden is planted primarily with CA native plants that are adapted to the Mediterranean climate zone.

This garden is planted primarily with a blend of climate-appropriate plants from other Mediterranean climate zones.

ET = Evapotranspiration = Plant Water Need

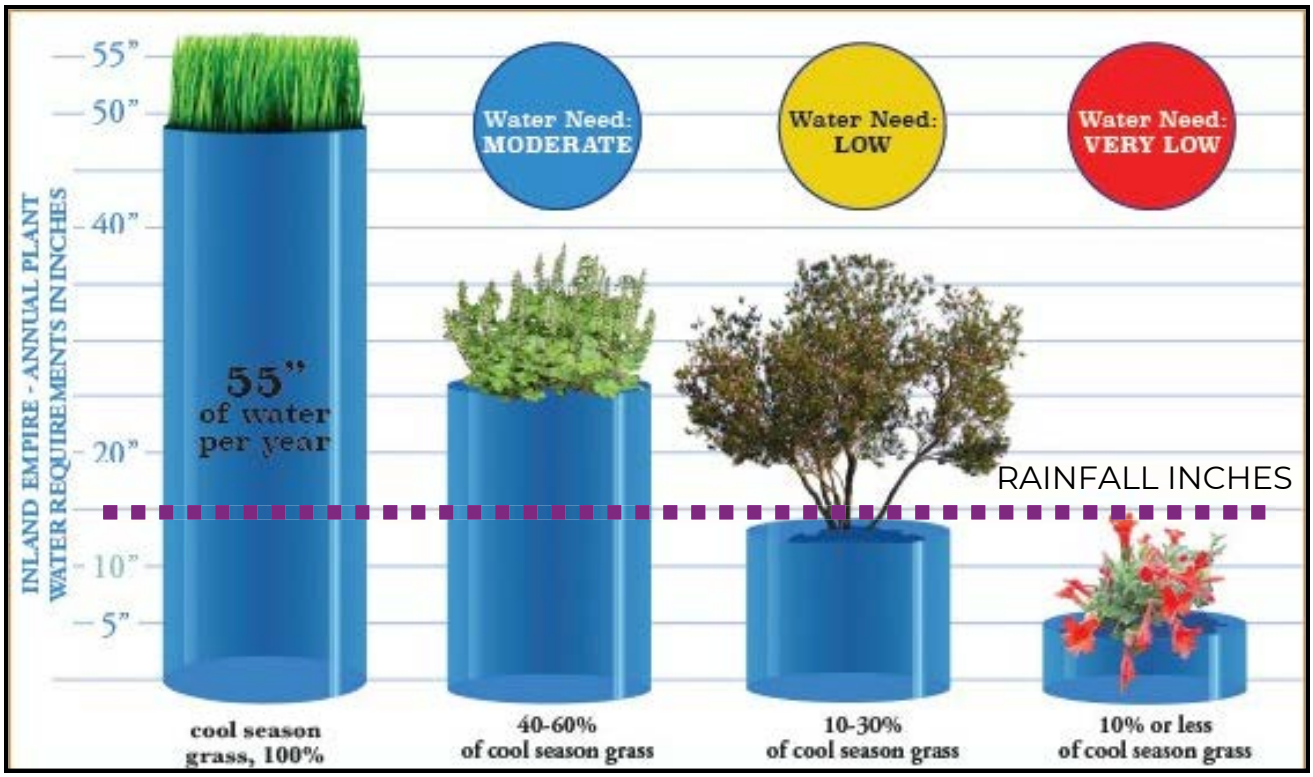


The amount of water lost from an uncovered soil surface and transferred to the atmosphere **(EVAPORATION)**

+

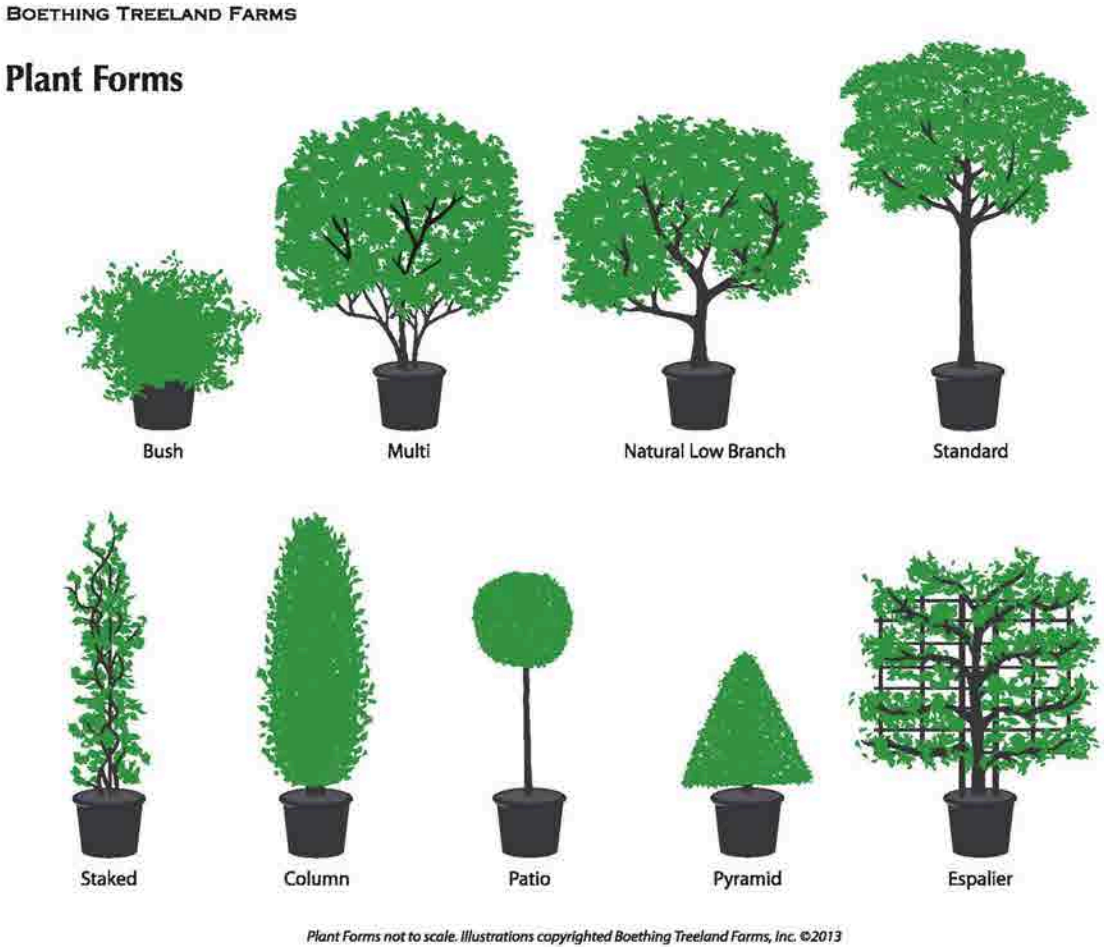
The amount of water plants take from the soil through their roots and transfer to the atmosphere through their leaves (**TRANSPIRATION)**

ET is expressed in INCHES of water per time period (Daily, Weekly, Monthly, Annually)



Plants can be identified by how much they evapotranspire in inches over a year and compared with cool season grass. This allows us to designate them with Moderate, Low or Very Low water needs as compared with grass. Note the LOW and VERY LOW require less water than typical annual rainfall.

Plant Form and Function



While we can change some forms with pruning and some growth habits with irrigation, it is best to select the correct form from the start and limit the manipulation required to obtain the desired shape or size.

There is a Lot to Think About with Forms and Plant Types

Trees

- Standard
- Multi-trunk
- Low-branched
- Large shrub pruned as tree
- Columnar/Pyramidical
- Umbrella
- Evergreen
- Deciduous

Groundcover

- Shrub
- Trailing perennial
- Clumping/Matting
- Walkable

Vine

- Vining shrub
- Espalier
- Staked

Shrub

- Bushy/Mounded
- Columnar
- Pruned as a tree
- Groundcover
- Grassy/Spiky
- Vining

What Functions Do Plants Fulfill in Your Garden?

Functions may be determined by form:

Screening - Plant height and width and shape
Low Water Needs - Annual or Perennial/Woody or Grassy
Shade - Dormancy creates shade at different times of year
Walkable Groundcover - Matting or trailing perennials
Not Walkable Groundcover - Shrub form
Colorful Garden - Blooms or foliage or both
Stormwater/Flood Control - Likes wet feet

What are the Functions You Want in Your Garden?

- Shade
- Screening
- Erosion Control
- Sound Buffer
- Enclosure
- Walable
- Edible
- Colorful
- Scent
- Pleasure!

Dormancy Creates Seasonality

Cercis occidentalis (Western Redbud) in three different seasons

Select plants that rest at different times of the year.

Plants may be Winter Deciduous:
These plants rest during winter months, usually as a result of cooler temperatures and shorter days. They may lose leaves and some may disappear altogether only to re-emerge in the spring.

Plants may be Summer Deciduous:
These plants are typically called **Summer-Dry** plants because they rest in the heat of the summer by dropping leaves, awaiting the fall and winter cool weather and rainy season to grow the next year's growth. Many CA Native plants are summer deciduous.

Learn to appreciate the summer-dry season.

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The Power of Community

All Plants Speak Latin: Species variety 'Cultivar'

Salvia species
clevelandii variety

Salvia clevelandii
'Winifred Gilman' cultivar

Species are the naturally ocurring, interbreeding plants. Sometimes (sp) is found after the name and they are Capitalized.

Varieties are the botanical varieties with stable traits passed through seeds. Sometimes (var) is found after the name and they are lower case.

Cultivars are man-made varieties that are selected for specific traits and that are propogated through cuttings. These are usually Capitalized and found within open 'quotes.'

Latin or Scientific Names are used when selecting plants because common names can be misleading, with plants from different species often having similar common names. If you want to be sure you're getting the plant you want, write down and use the Latin name to research and order it.

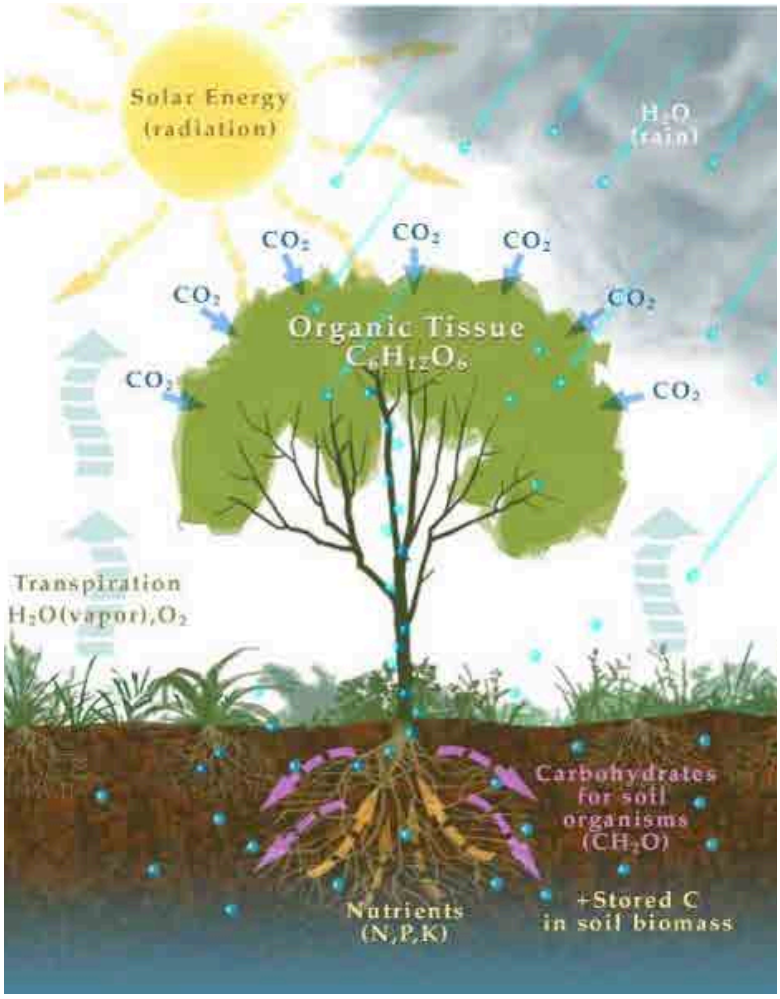
Keep Track of Your Plant Research

Form, Latin Name, Common Name, Height x Width, Sun Exposure, Water Needs & Flower Colors are the min.

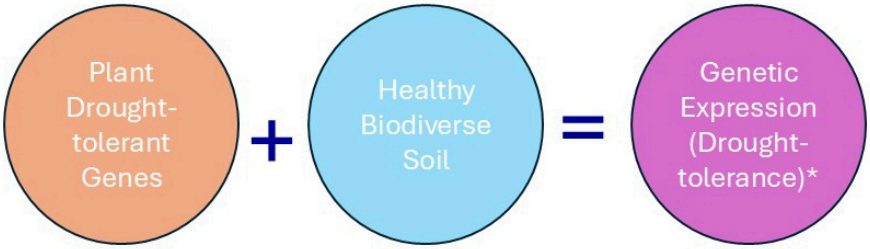
Form	Botanical (Latin) Name	Common Name	Height	Width	Sun	Water Need	Flower Color
Grass	Bouteloua gracilis 'Blonde Ambition'	Blonde Ambition blue grama	2.0'	2.0'	Full Sun	Low/Very Low	wheat
Shrub	Salvia leucophylla 'Bee's Bliss'	Bee's Bliss sage	2.0'	8.0'	Full Sun	Low	purple
Tree	Punica granatum 'Nana'	Dwarf pomegranate	3.0'	5.0'	Full Sun	Low	orange
Vine	Vitis 'Rogers Red'	Rogers Red grape	x	30.0'	Part/ Full/Shade	Low	white
Perennial	Juncus patens	CA gray rush			Full Sun/ Shade	Moderate	brown
Perennial	Epilobium canum var. latifolium 'Everett's Choice'	Everett's CA fuchsia	0.5'	5.0'	Full Sun	Very Low	red

Plant Soil Relationship

- Plants and soil are one organism: **Symbiotic, Mutualistic, Cooperative, and Inseparable.**
- Some carbon that plants sequester during photosynthesis goes for body and seed building, but much is fed to a microbial community as root exudates in exchange for goods and services such as mining nutrients or providing water.
- The soil microbes not only feed the plant, they also re-engineer the soil to make it a sponge that holds on to water in dry times.
- Soil microbes in a healthy, diverse soil microbiome also edit the genes of plants to express beneficial behaviors for the community.



Epigenetics occurs only with highly abundant and diversely planted gardens.

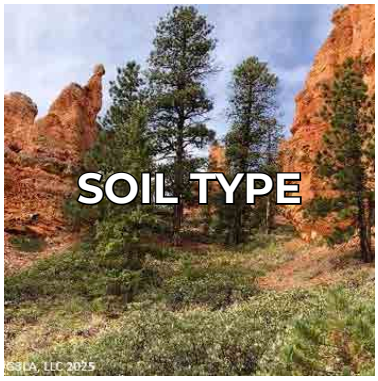


Healthy soil = Drought-tolerant Plants
Unhealthy soil = No Drought-tolerance

The soil microbiome edits the plant genes to make the plant express drought-tolerant behavior.

This is called **Epigenetics**.

Nature groups plants into communities by:



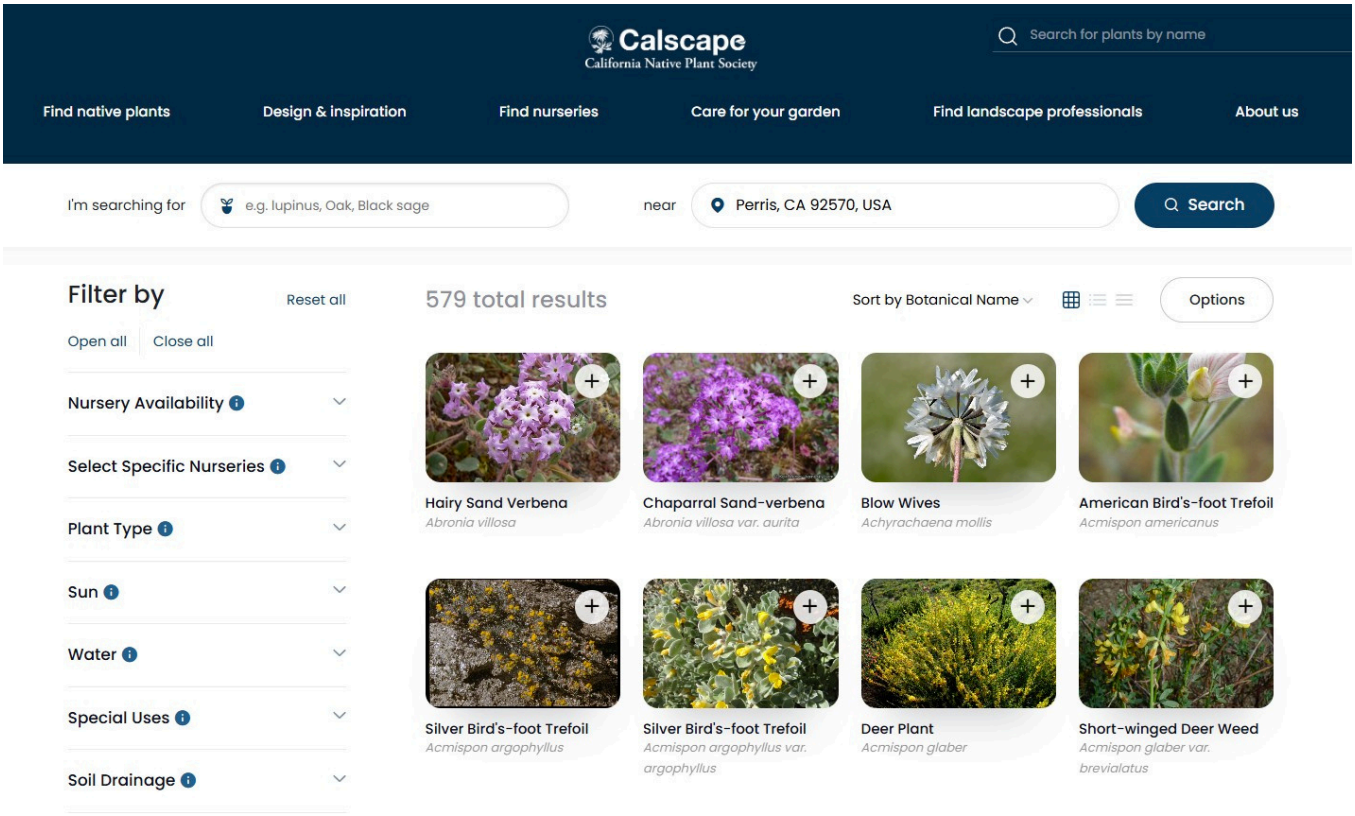
Select plants that are friends and group them together.

Group plants into communities according to their similar characteristics. Water Needs are particularly important to consider if you are irrigating the garden.

These are Riparian Community Plants

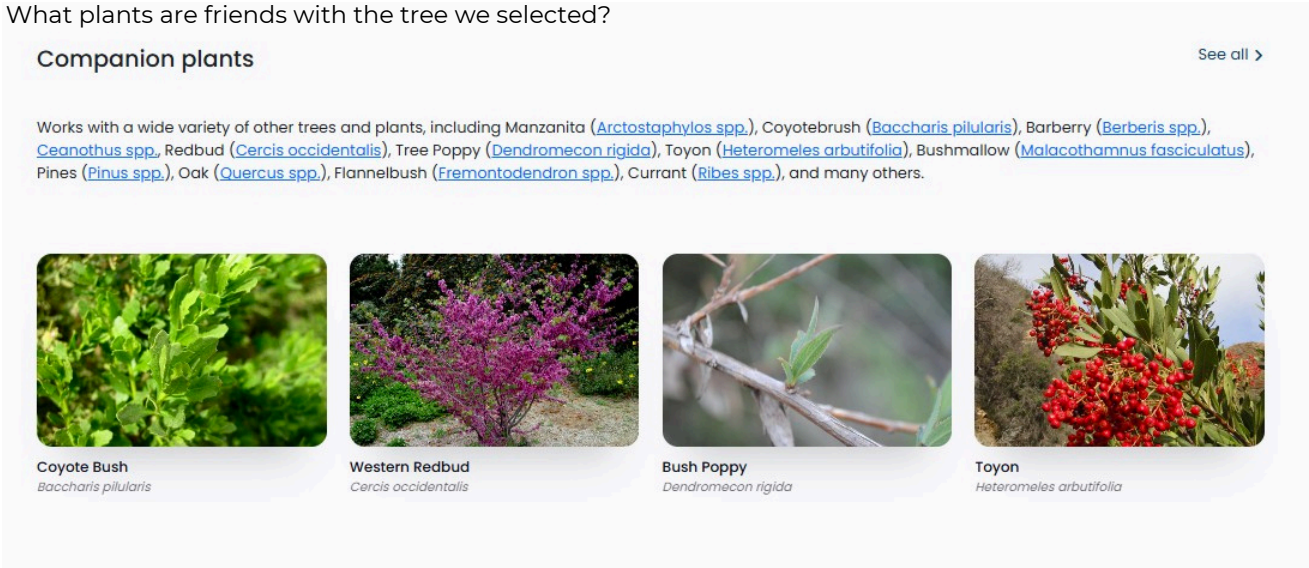
These are Chaparral Community Plants

Create a Plant List Using Calscape.org



Choose Companion Plants to Build Your Plant Palette

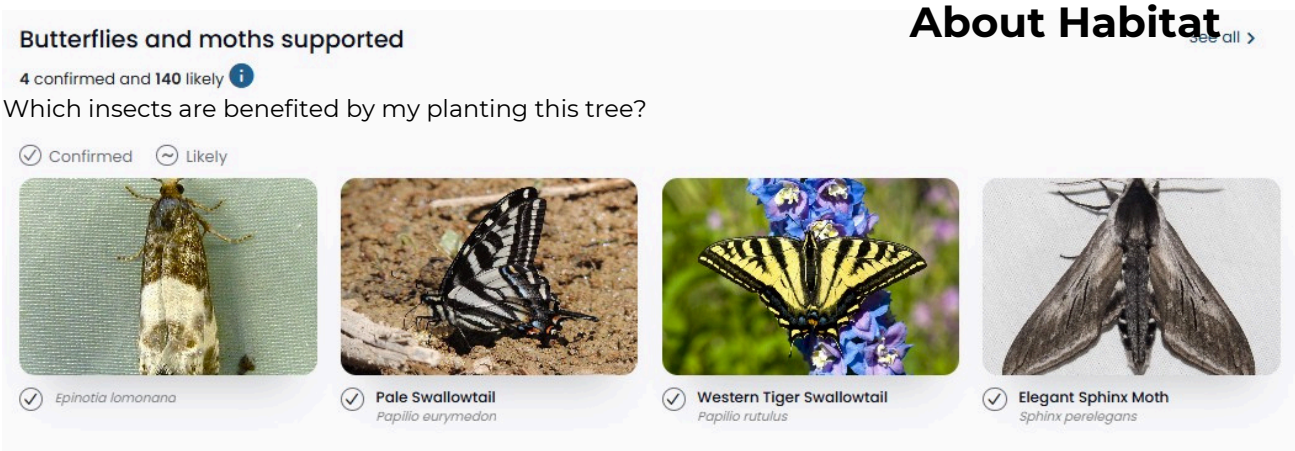
Companion plants are plants from the same or similar plant communities that naturally would grow together. Selecting plants from the same communities enhances habitat value and creates a unified aesthetic.



Select Plants for Habitat Value

- 80% of pollination is performed by insects and other animals.
- Flowering plants and insects (pollinators especially) have coevolved. These insect and plant species have a mutualistic relationship.
- Some insects require particular plants for their entire life cycle or for particular periods of their lives and cannot substitute species. Others have relationships with many different types of plants.
- Plants provide shelter, food, nesting material, and much much more to other creatures.

Calscape.org Provides Information About Habitat



Different Plant Families = Different Insect/Animal Relationships

Asteracea

- Daisy Family
- Compound flowers including daisies, sunflowers, and yarrow
- Bloom over a long season

Lamiacea

- Mint Family
- Bi-lobed flowers attract primarily bees
- Flower size affects which insect visits
- Includes many herbs and sages

Polygonaceae

- Buckwheat Family
- Small flowers attract small bees, parasitic wasps, and flies
- Very important family for pollinators
- Prone to drought-tolerance

Rhamnaceae

- Buckthorn Family
- Many plants from the CA chaparral communities are included
- Important habitat plants for Western gardens

Poaceae

Insects provide VITAL soft bodies that birds and other animals rely on to feed their young or supply energy at critical times of the year (migration).

Don't Forget the Grasses

- Grasses provide early season pollen
- Perennial grasses are important habitat for ground-dwelling predators such as beetles and spiders
- Ground-nesting bees like to nest near the base of grasses

Consider monarch butterflies that can get energy from any flowering plant during their migration, but rely solely on **Asclepias** species to lay their eggs.

More Trees, Please!

Which Benefits Do You Want in Your Garden?

- Shade
- Beauty - Brain stimulation
- Habitat
- Water holding
- Architecture
- Color/Seasonal interest
- Fruit
- Hillside holding
- Climbing

Excellent Large Landscape Trees

Other Special Considerations

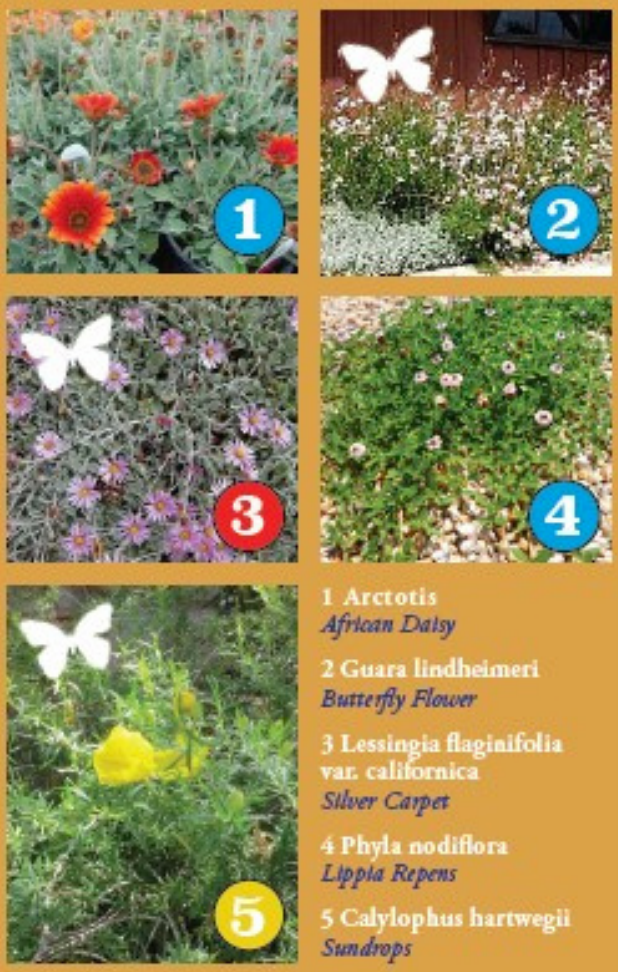
Don't Plant Pests Like These!

PlantRight.org maintains information about invasive and soon-to-be invasive plants in California. Use this resource to check whether a plant you have selected is on the list, and if so, remove it from your palette. In every case there are CA native plants that look the same and contribute positively to environmental benefits.

Plants for Small Spaces

Plants for Fire Zone One & Two

Parkway Plants



1 Arctotis
African Daisy

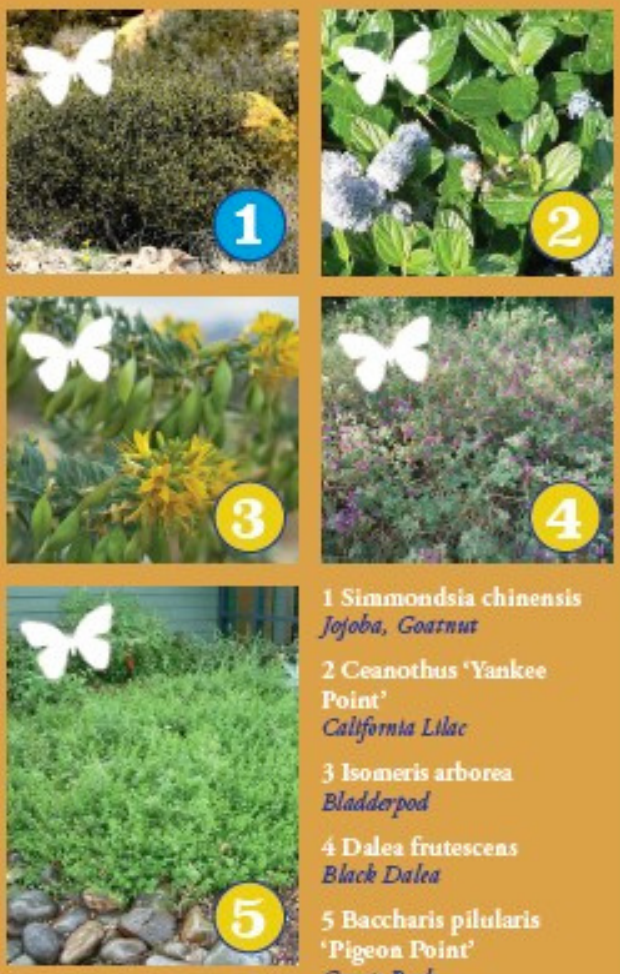
2 Guara lindheimeri
Butterfly Flower

3 Lessingia flaginifolia var. californica
Silver Carpet

4 Phyla nodiflora
Lippia Repens

5 Calylophus hartwegii
Sundrops

Hardy Hillside Holders



1 Simmondsia chinensis
Jojoba, Goatnut

2 Ceanothus 'Yankee Point'
California Lilac

3 Isomeris arborea
Bladderpod

4 Dalea frutescens
Black Dalea

5 Baccharis pilularis 'Pigeon Point'
Coyote Bush

Low-growing plants suitable for parkways are also great plants for **Zone One (5' - 30')** creating defensible space around structures. Plants with demonstrated hillside holding capacity work well for **Zone Two (30' - 100')** away from structures, completing the fire defensible zone transitioning to the Wildland Interface.

Stunning Focal Point Succulents

1 Agave victoriae-reginae
Queen Victoria Agave

2 Agave vilmoriniana
Octopus Agave

3 Kalanchoe beharensis
Felt Plant

Succulents are great choices for all landscaping situations. These provide architectural focal points, but many smaller varieties can blend seamlessly into the rest of the plant palette when planted along footpaths or under other plant combinations.

What About Succulents?

There are many great reasons to incorporate succulents into your planting plan.

- Architectural
- Focal points
- Colorful
- Hillsides
- Fire breaks
- Small spaces
- Containers

Succulents are a broad group of plants with thick, fleshy tissues (leaves, stems, trunks) adapted to living in deserts or semiarid regions. Some succulents like Agave store water mainly in the leaves.

Cacti store water ONLY in the stem and have no leaves (or very small leaves). Cacti are a family of succulents that often have spines.

All succulents require well **draining soils** to thrive, which is why you often see them in planter beds conditioned with gravel.

Not all succulents like sun. Depending upon where you live, **many succulents appreciate shade**. Dry shady spots in the garden benefit from being planted with succulents.

Take Notes Here

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