

# Sierra Club NCG

## At-Home Climate Actions



Build Resilience, Reduce Emissions at home



# Plant and Grow Trees





Why trees?

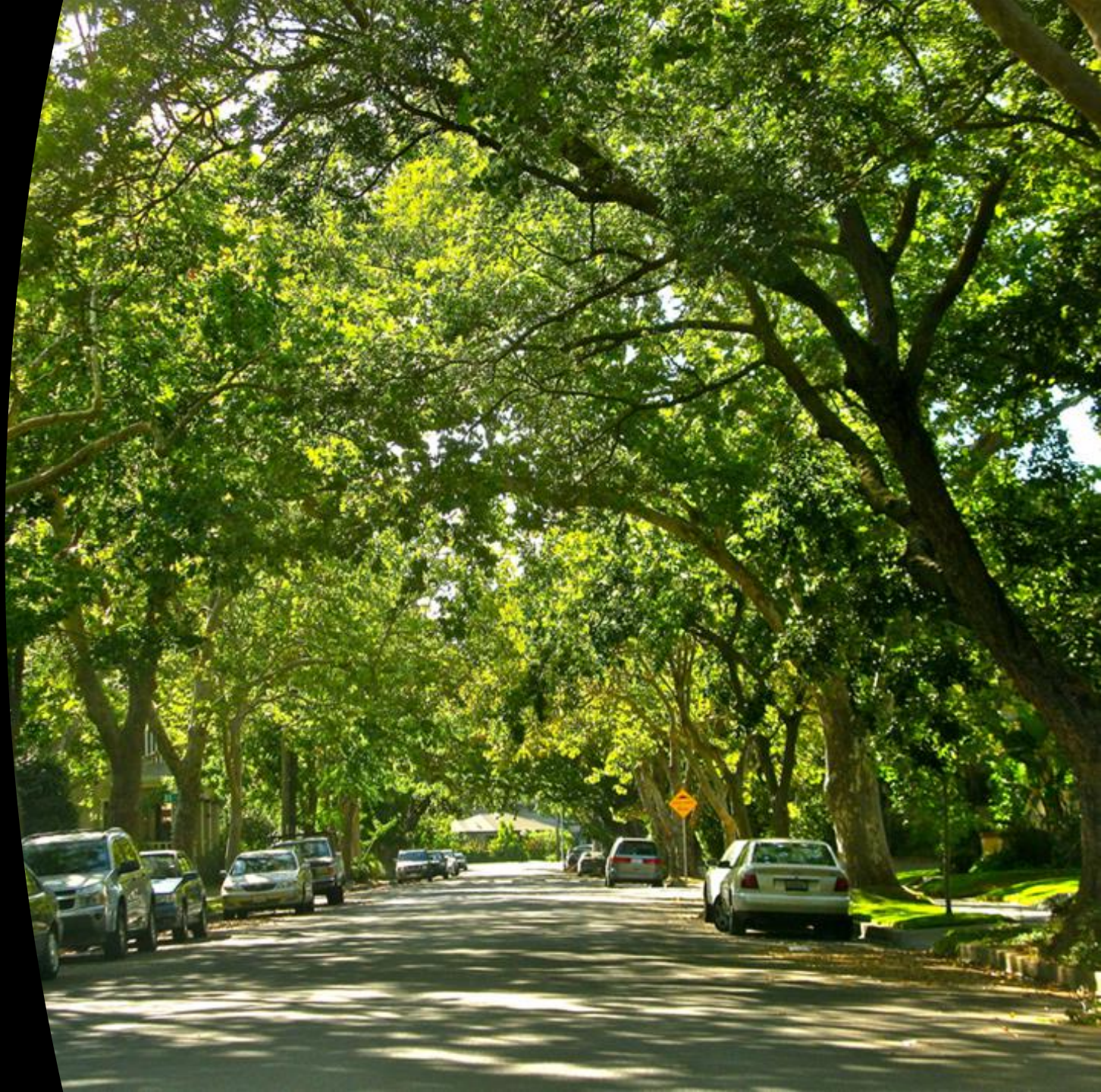
**Because everyone is healthier with access to trees and green spaces.**



# Why Trees?

## Trees Benefit:

- Climate
- Health
- Quality of Life
- Habitat
- Water
- Air
- Economic benefit



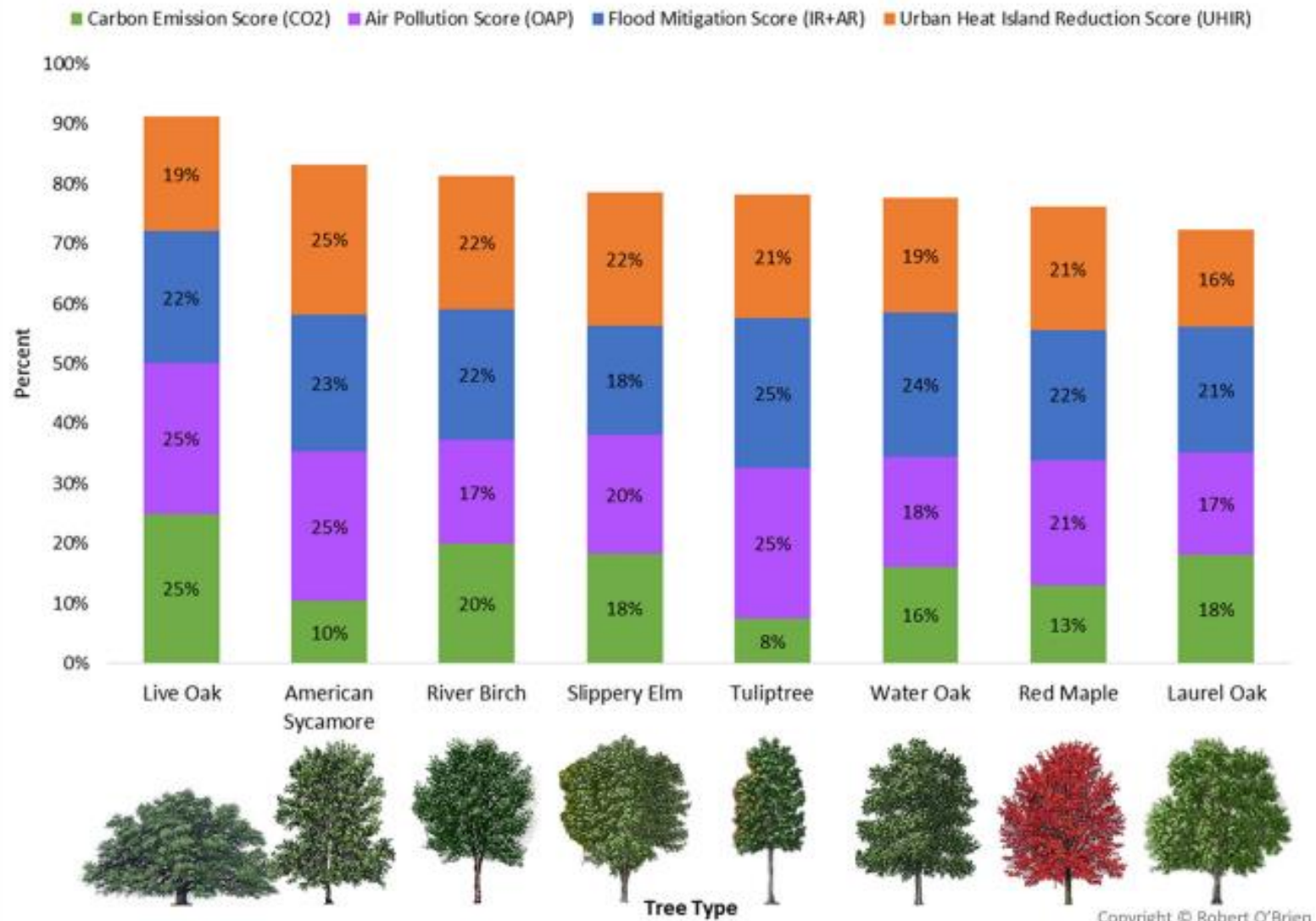


# Super Trees

Sequester Carbon, Clean Water, Clean Air

- A single mature tree **sequesters 40-80lbs of carbon per year**
- For Escondido's urban forest (50k trees) this is up to **2,000 tons per year**.
- Trees retain soil and stormwater, as much as **1000 gal/year per mature tree**
- Absorbs GHG and air pollutants

## Houston 'Super Trees'



Maximum Climate Change Mitigation and Adaptation (ESM<sub>n</sub>) Variable values for Houston-native tree species

CO<sub>2</sub> Sequestered calculated from CUFR for ~10-year variable DBH:  
Live Oak, 268 lbs./tree/year

Other Air Pollutant Absorption (OAP) from i-Tree for ~10-year variable DBH:  
Live Oak, American Sycamore, Tuliptree, Black Walnut, 1.9 lbs./tree/year

Flood Mitigation (IR+AR) from i-Tree for ~10-year variable DBH:  
Tuliptree, 3,006 gallons/tree/year

Total Climate Change Score for a Red Maple Tree

$$CO_2 \text{ Sequestered: } \frac{139}{268} = 0.52$$

$$Flood \text{ Mitigation: } \frac{2592}{3006} = 0.86$$

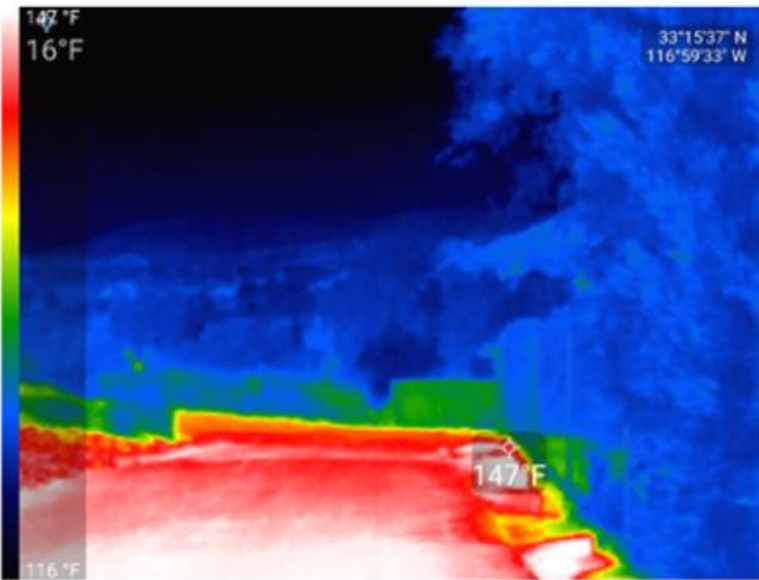
$$Other \text{ Air Pollutant Absorption: } \frac{1.6}{1.9} = 0.84$$

$$Urban \text{ Heat Island Reduction: } \frac{14}{17} = 0.82$$

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# Cooling Benefits

## Under Small Oak Tree



Temp Range 116 (dark) to 147 (White)



A tree can reduce ground temperatures heat by 25 degrees.

The cooling effect of a single healthy tree can be equal to 10 room-sized air conditioners.

Trees reduce heat island effects by as much as 10-15 degrees via the shading & "evapo-transpiration"

Groundcovers planted under trees support tree growth, reduce heat, and support wildlife.

**31** degree difference

# Health Benefits of Urban Nature

After 20 minutes walking in a park setting, children with ADHD concentrated better and their attention performance was improved. Effect sizes were substantial,

Exposure to trees and vegetation

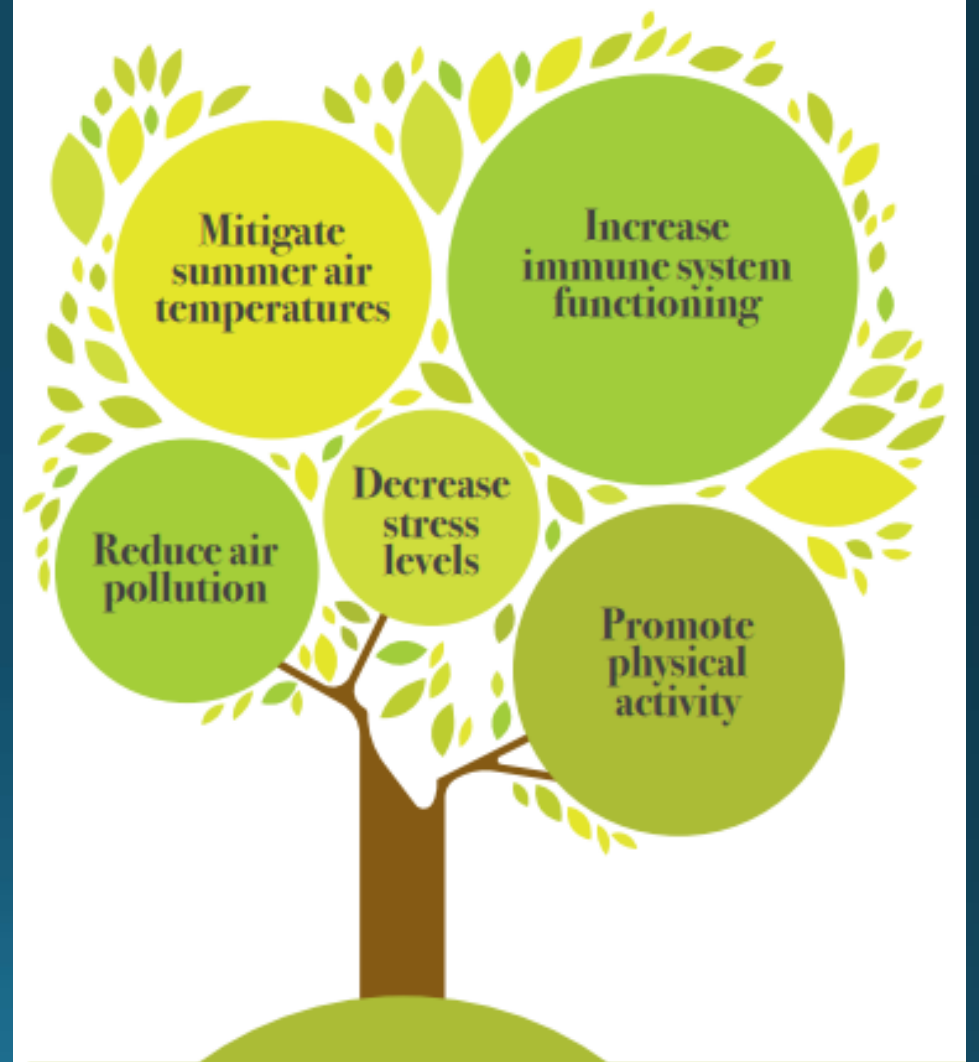
## **Reduces:**

- Rates of mortality,
- Cardiovascular disease,
- Stress, and
- Depression.

## **Increases:**

- Higher levels of happiness,
- Cognitive development,
- Learning outcomes
- Physical activity

## Health Benefits of Urban Nature





# Wildlife Benefits



## Wildlife

Native trees are major habitat and food sources for many species of insects, birds, and mammal.

Groundcovers planted under trees support tree growth, reduce heat, and support wildlife.

Native trees support local wildlife diversity

Important for pollinators





# The Climate & Health Benefits of Trees

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A single mature tree **sequesters 40-80lbs of carbon** per year, or 1-2,000 tons/yr for Escondido's 52k forest

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The cooling effect of a single healthy tree equates to 10 room-sized AC units

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Trees allow for soil & **stormwater retention** - 1000gal/y per mature tree

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Trees are **critical for wildlife** habitat to thrive

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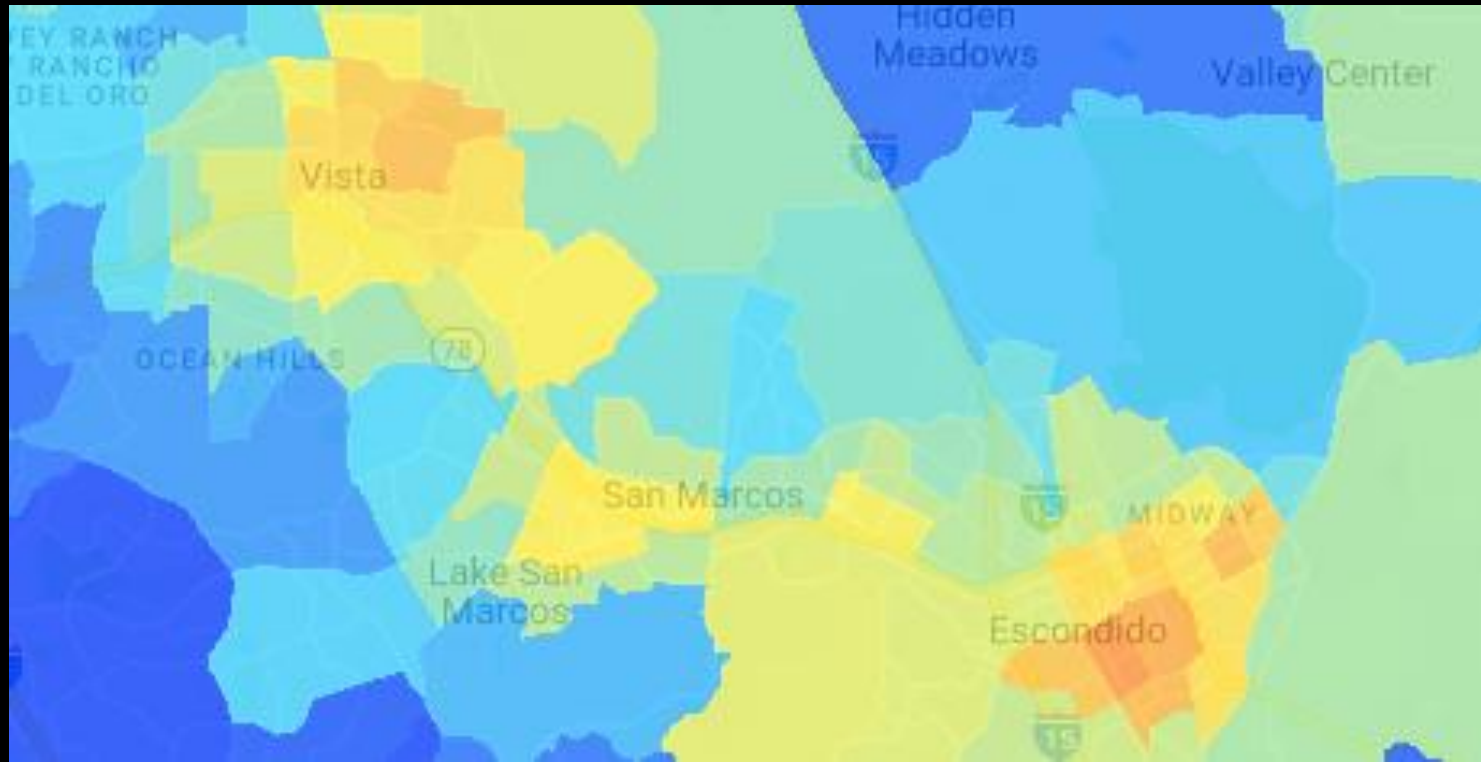
Trees **reduce heat island effects** by as much as 10-15 degrees F via the shading & "evapo-transpiration" they provide.

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Trees **absorb** additional GHG's & **air pollutants**

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Trees **improve well-being** of communities



Areas with less Tree Canopy have higher heat exposure





# Native Plants are Better for the Environment

- 
- Support local birds, insects, pollinators
- Exotic trees have little to no ecological benefit.
- Better support migrating and resident species
- Evolved with and support local insects and animals
- Are culturally important
- More likely to survive
- Provide diversity and habitat benefits

Sierra Club NCG Nurture Nature North County

# Tree Issues/Solutions



## ISSUES

**Roots impact sidewalks and streets**

**Can fall in extreme weather**

**Need trimming**

**Can generate maintenance needs**

**Need water**

**Viewed as fire hazard**

## SOLUTIONS

**Right tree in the right place**

**Plant trees correctly**

**Plant small groves of trees so roots interlock and are more stable, like in a forest.**

**Use large shrubs that grow quickly and provide shade**

**Mulch themselves**

**Plant native trees and shrubs**

**Hydrated, healthy native trees are fire resistant**





Small Native Trees



- Desert Olive
- Western Redbud





# Desert Willow and Chitalpa





# California Ash

- 25 feet tall
- Sweetly scented flowers
- 35 species





Native Cherry -76-144 species

Palo Verde- many birds, insects, and pollinators



# Oak Trees

- Highest ecological benefit
- Many sizes
- Plant in groves to reduce size
- Over 150 species





# Honey Mesquite

- Thornless variety





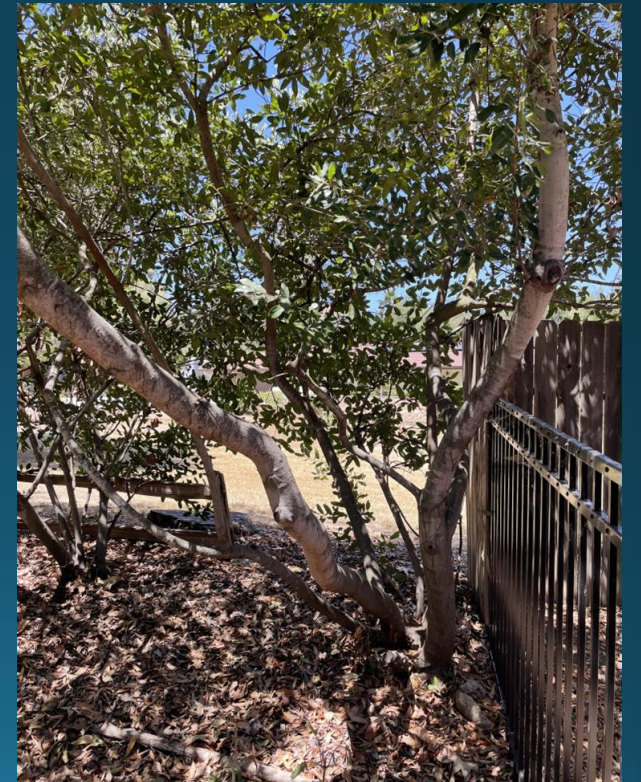
# Big Leaf Maple



- If you have room
- 87 species of butterflies and moths

## Large Shrubs provide shade and grow faster

- Toyon
- Lemonade Berry
- Manzanita
- Ceonothus (wild lilac)





Tree of Life Nursery  
Amazing info and source  
for Native Plants

Moosa Creek Nursery  
Local wholesale native  
nursery

Native Grown Nursery  
Escondido plant source

Calscape.org



## Sage Advice from the Roundhouse....

### NATIVE T R E E S

Looking for an appropriate street tree, an attractive shade tree, a flowering patio tree, a stately specimen tree? There's a California native tree for the job! Planted small at the onset of the winter rains, a native tree will become established and begin growing promptly, and surpass the growth and size of a larger (box) tree. Mostly fast-growing, drought tolerant and pest resistant, native trees provide the landscape with a unique look that truly beautifies the region. Long before Eucalyptus invaded the canyons and hills of California, the natives had established their niche in the delicate ecosystems of this region and developed a natural interdependence with the other native species. Today, we can celebrate the natural magnificence of this bioregion by choosing to plant our landscapes with the native trees that truly belong here:

**F L O W E R I N G T R E E S**  
*Aesculus californica*, California Buckeye  
*Arctostaphylos refugioensis*, Refugio Manzanita  
*Ceanothus arboreus*, Island Ceanothus  
*Cercis occidentalis*, Western Redbud (deciduous)  
*Chilopsis linearis*, Desert Willow  
*Parkinsonia aculeata*, Mexican Palo Verde  
*Tecoma stans*, Yellow Bells



**S M A L L T R E E S ( U N D E R 2 0 ' )**  
*Ceanothus 'Ray Hartman'*  
*Arctostaphylos 'Lester Rowntree'*  
*Pinus edulis*, Pinon Pine  
*Cercocarpus betuloides*, Mountain Mahogany  
*Betula fontinalis*, Water Birch  
*Heteromeles arbutifolia*, Toyon  
*Myrica californica*, Pacific Wax Myrtle  
*Prunus ilicifolia*, Hollyleaf Cherry  
*Cercidium floridum*, Blue Palo Verde  
*Acacia farnesiana*, Sweet Acacia  
*Ornithostaphylos oppositifolia*, Baja Bird Bush



**L A R G E D E C I D U O U S T R E E S**  
*Acer macrophyllum*, Big Leaf Maple  
*Acer negundo*, Black Maple  
*Aesculus californica*, California Buckeye  
*Alnus rhombifolia*, White Alder  
*Chilopsis linearis*, Desert Willow  
*Juglans californica*, California Black Walnut  
*Platanus racemosa*, Western Sycamore  
*Populus fremontii*, Fremont Cottonwood  
*Quercus kelloggii*, Black Oak  
*Quercus lobata*, Valley Oak



**L A R G E E V E R G R E E N T R E E S**  
*Calocedrus decurrens*, Incense Cedar  
*Lyonothamnus florib. aspl.*, Catalina Ironwood  
*Quercus agrifolia*, Coast Live Oak  
*Quercus kelloggii*, Black Oak  
*Pinus coulteri*, Coulter Pine  
*Pinus sabiniana*, Foothill pine  
*Pinus torreyana*, Torrey Pine  
*Prunus lyonii*, Catalina Cherry  
*Umbellularia californica*, California Bay

PLANTS OF EL CAMINO REAL  
33201 ORTEGA HWY. • P.O. BOX 635 • SAN JUAN CAPISTRANO, CA 92693 • (949) 728-0685





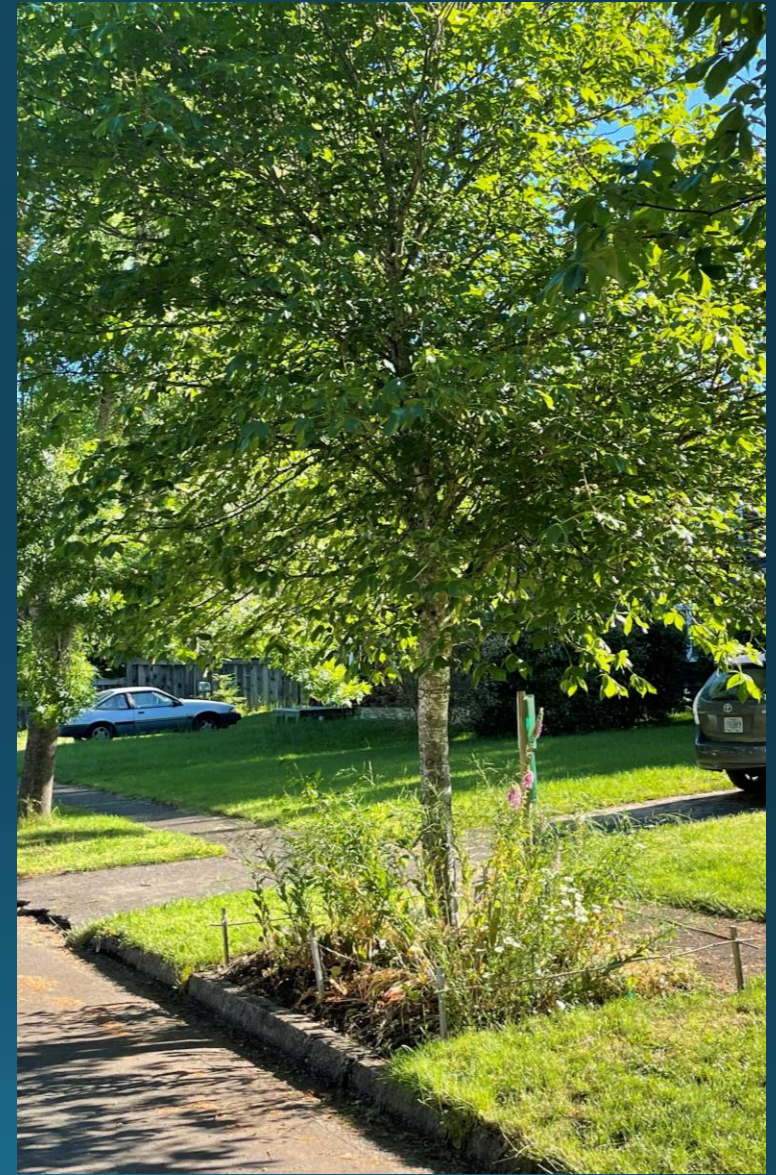
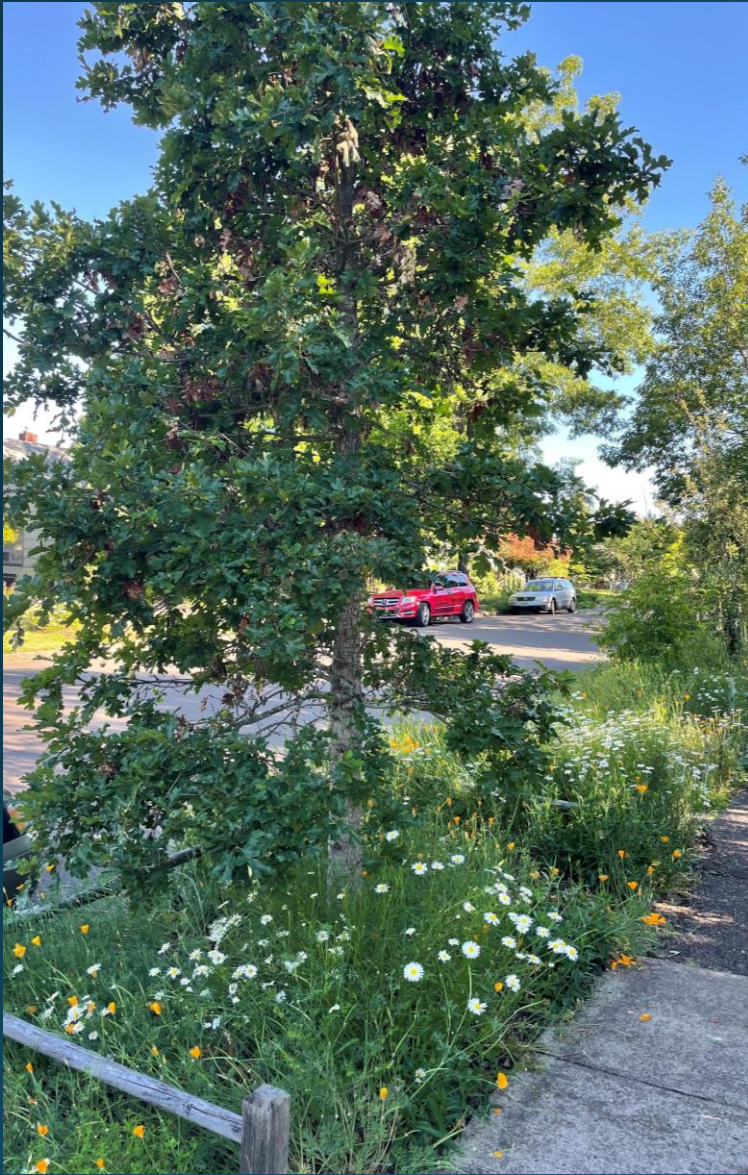
Tree work in  
pots  
and  
on patios too





## Best understory for native trees

- Supports tree
- Conserves water
- Builds soil
- Habitat for insects
- **Pupation Stations!**





- Leaves are perfect mulch.
- Foundation of healthy soil
- Return nutrients
- Protect root systems
- Preserve water
- Support web of micro-organisms trees need.



Leave the  
leaves



# Get Started

- **Read:** our Plant and Grow Trees Guide
- **Plan:** Assess your area and goals
- **Watch:** How to plant trees video
- **Gather:** Materials you need
- **TREE PLANTING DAY**
- **Mulch**
- **Water**
- **Repeat**



## GROW TREES

### Expand the urban tree canopy

As the climate crisis worsens, extreme heat events will continue to threaten our health. People in areas with little tree shade canopy will suffer more. Trees and large shrubs are an important and easy way to reduce these 'heat-island' effects. Trees are an affordable way to shade and cool your home.

#### CONSIDER THAT TREES:

- When mature, can sequester 40-80lbs of carbon per year
- Provide cooling equal to up to 10 room-sized AC units
- Reduce a city's heat island effect by as much as 10-15 degrees
- Are critical for wildlife and biodiversity
- Prevent erosion and retain water, 1000 gallons/year per mature tree
- Absorb air pollutants
- Improve well-being, offer other health benefits and are beautiful

Native trees and large shrubs are better for biodiversity and are adapted to our region. Native plants support local birds, insects, and pollinators. They better support migrating and resident birds, are culturally important, and are likely to survive. Which tree is the best for you? If you have room, the very best tree to plant is a native oak tree. If not, there are many small and medium trees that will work well. Trees and large shrubs planted on the south and west side of buildings will provide the best shade from the hottest sun. Always avoid planting near power lines.

The best source of information on native plants is [www.calscape.org](http://www.calscape.org). Type in your address to get a list of suitable options including: Oaks (come in many sizes) / Native Cherry / Desert Willow / Toyon / Lemonade Berry / Redbud / Wild Lilacs (Ceanothus) / Manzanita / Velvet Ash / Ironwood

#### Take Action

- 1 Purchase native trees/shrubs at a native plant nursery like Moosa Creek and Tree of Life. 1-5 gallon size is best.
- 2 Look for native plant sales in October and plant from November-January, the best time to plant.
- 3 If you live in Escondido, you can apply for a free native tree: [www.escondido.org/request-a-free-tree](http://www.escondido.org/request-a-free-tree)
- 4 SDGE Rebate tree program: [www.sdge.com/trees/community-tree-programs/community-tree-rebate-program](http://www.sdge.com/trees/community-tree-programs/community-tree-rebate-program)
- 5 Kate's Trees: [www.katestrees.org](http://www.katestrees.org)
- 6 If you don't have room for a tree or want to help others, join our Sierra Club Tree Team to volunteer and help others plant trees. <https://forms.gle/DeGbSwiR6hNZxdC9>

For more information visit our website: [www.sierraclubnbcg.org/home/sierra-club-at-home-resilience-project/](http://www.sierraclubnbcg.org/home/sierra-club-at-home-resilience-project/)



# Join the Sierra Club Tree Team

Sign up here

[https://docs.google.com/forms/d/1qP4gxUL1mIn3PiKihaz2f7Q6DByu0Ix8WjwIbLxoq\\_A/edit](https://docs.google.com/forms/d/1qP4gxUL1mIn3PiKihaz2f7Q6DByu0Ix8WjwIbLxoq_A/edit)

Or, for more information contact [conservation@sierraclubncg.org](mailto:conservation@sierraclubncg.org)

For more on At-Home Climate Actions visit

<https://sierraclubncg.org/home/sierra-club-at-home-resilience-project/>