Landscape Workshop: Healthy Habitat

Water WISE UP Series

Saturday, April 10th, 2021

Shavonne Turner

Manager of Water Conservation Programs

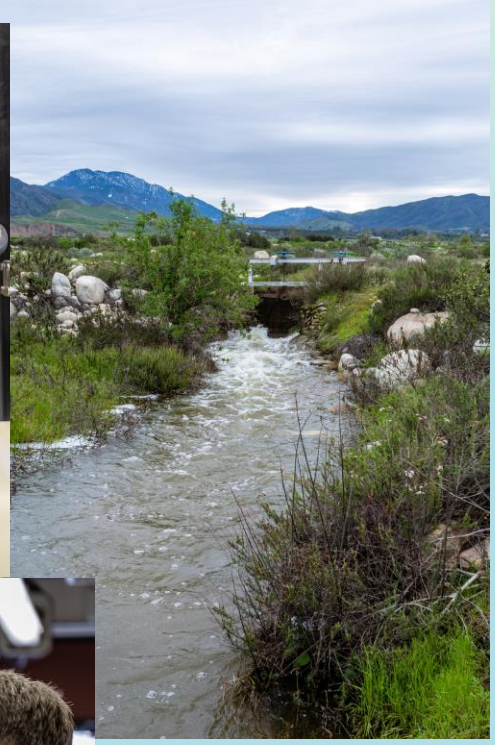
San Bernardino Valley Municipal Water District

Housekeeping

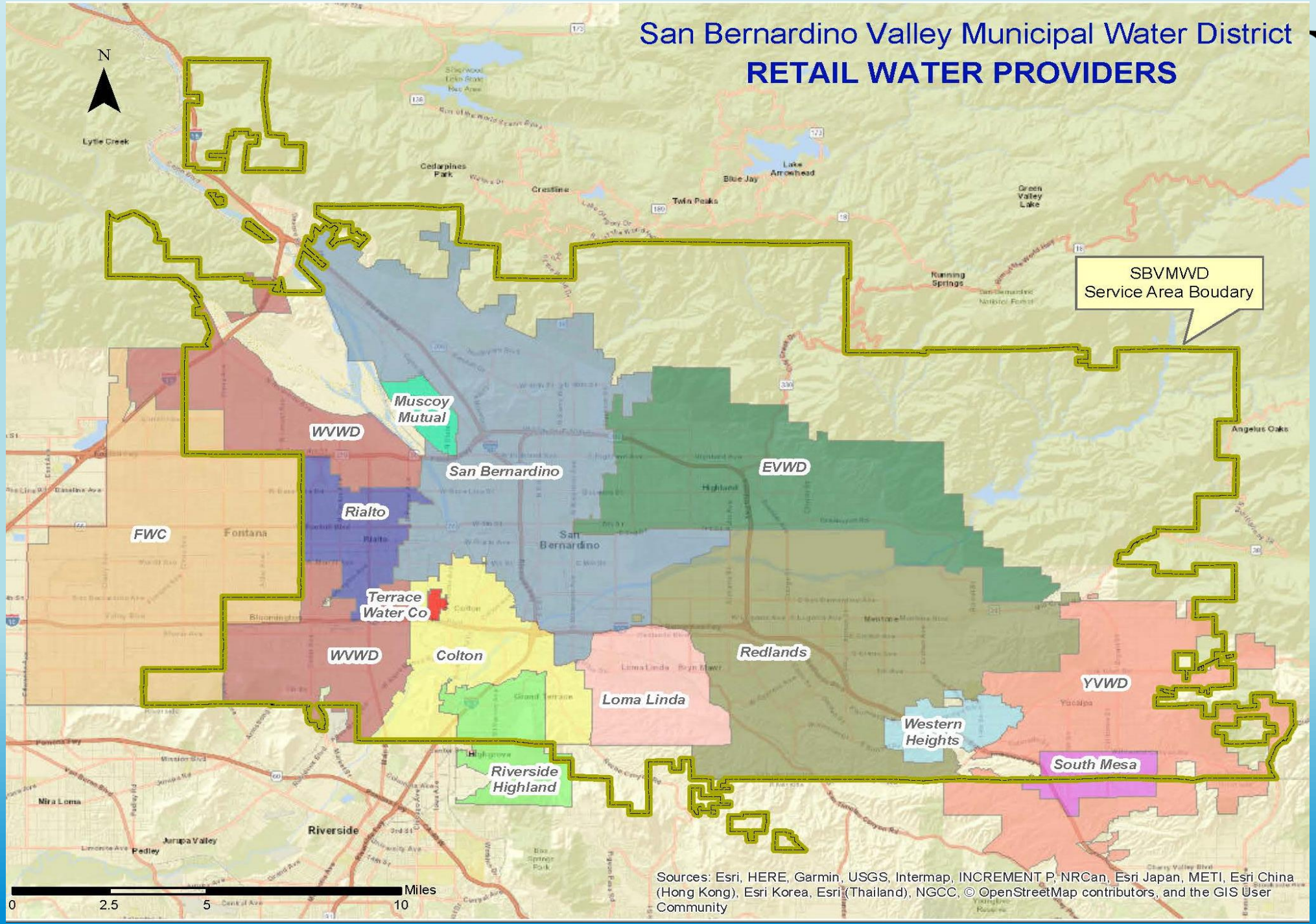
- This webinar is being recorded
- All attendees are on mute
- Use the “chat” or “Q&A” function to ask questions

Who is Valley District?

- A water wholesaler
- Import water from Nor. Cal.
- Manage groundwater
- Plan for the future
- Partner with surrounding agencies



San Bernardino Valley Municipal Water District
RETAIL WATER PROVIDERS



San Bernardino Valley Municipal Water District

Jasmine Orozco Clark

Education Coordinator

Inland Empire Resource Conservation District

Maggie O'Neill

Program Coordinator

UCCE San Bernardino County Master Gardeners and Environmental Education

Executive Director

San Bernardino County Farm Bureau

San Bernardino County Master Gardeners

- Part of Agriculture and Natural Resources Division (UCANR)
- Volunteers educating the public by sharing peer reviewed research done by University of California and other universities on a wide variety of topics including growing food, sustainable landscaping and better living through gardening

Other UCCE Programs in San Bernardino County:

Celebrating 50 years

EFNEP

Expanded Food and Nutrition Education Program

UNIVERSITY OF CALIFORNIA
Agriculture and Natural Resources

UC Master Food Preserver Program

- *EFNEP (Expanded Food and Nutrition Program)*
- *4-H Youth Development Program*
- *Master Food Preservers*
- *Academic Advisors (Natural Resources, Horticulture, Dairy, Urban Ag)*
- *To learn more visit our website:*

  http://cesanbernardino.ucanr.edu/
- **UCCE: University of California Cooperative Extension*

San Bernardino Regional Seed Library(SBRSL)

Share:	Locations:	Free Classes
Share donated and community shared seeds with the public	Seed Library Locations in Montclair and Yucaipa (note: both locations are currently closed due to COVID, but we will be sure to share when they are open again!)	Free monthly Seed Saving Classes on a variety of seed topics

Break from our regularly scheduled program!!!

Citrus Greening Disease: HLB/Huanglongbing

- *Prevent the spread of the disease by:*
- *Do not share stems and leaves when sharing citrus*
- *Do not share cuttings*
- *Keep ants of your trees*

Asian Citrus Psyllid ACP: Insect Vector for Bacterial Infection, Candidatus Liberibacter asiaticus (CLas)

Huanglongbing (HLB) disease: Fatal to all Citrus trees, currently no treatment available

Ant management to prevent pests & help beneficial insects!

http://ipm.ucanr.edu/QT/antscard.html

UNIVERSITY OF CALIFORNIA AGRICULTURE & NATURAL RESOURCES

UC IPM

Statewide Integrated Pest Management Program

Pests in Gardens and Landscapes: Quick Tips

Ants

Published 9/18

Download PDF | Español

Read more and see videos on this topic

Although ants are annoying when they come indoors, they can be beneficial by feeding on fleas, termites, and other pests in the garden. While spraying chemicals inside the house might seem effective, doing so will not prevent more ants from entering. Because most ants live outdoors, focus efforts on keeping ants from entering buildings. Combine several methods such as caulking entryways, cleaning up food sources, and baiting when necessary. Avoid using pyrethroids (e.g., bifenthrin and cypermethrin), especially on hard surfaces such as driveways or sidewalks or around the foundation of buildings. These products pollute waterways.

Argentine ant.

Make your house less attractive to ants.

- Caulk cracks and crevices that provide entry into the house.
- Store food attractive to ants in closed containers.
- Clean up grease and spills.
- Ant-proof kitchen garbage pails with sticky barriers such as petroleum jelly under the lip and place pet dishes in a moat of water.
- Remove or manage sweet food sources next to your house such as aphid-infested bushes and ripened fruit on trees.
- Keep plants, grass, and organic mulch at least a foot away from the foundation of buildings to reduce ant foraging and nesting.

Various types of bait stations are available.

When ants invade your house.

- Sponge up invading ants with soapy water as soon as they enter.
- Plug up ant entryways with caulk.
- Take infested potted plants outdoors and submerge pots in a solution of insecticidal soap and water.
- Clean up food sources by wiping up spills or placing food in tight-fitting containers.
- Rely on outdoor baits to control the ant colony.
- Insecticide sprays shouldn't be necessary.
- If you hire a pest control company, ask them to use baits and spot treatments rather than perimeter treatments or monthly sprays.

Fill ant entryways with caulk.

How ant baits work:

Pesticide baits work by attracting worker ants who then take the product back to the nest where the entire colony, including queens, can be killed. The pesticide must be slow acting so workers won't be killed before they get back to the nest.

How to use baits:

- Place baits near ant trails and nest openings

https://ucanr.edu/sites/ACP/

https://ucanr.edu/sites/ACP/

PRINT | SITE MAP | Enter Search Terms | GIVE

University of California, Division of Agriculture and Natural Resources

Asian Citrus Psyllid Distribution and Management

Home | Growers | Homeowners | Master Gardeners | Map of Psyllids, HLB and Parasites

ACP/HLB Distribution and Management

An Interactive Website for Asian Citrus Psyllid Management

Growers

Commercial Citrus – How will the citrus grower manage the pest and disease?

The deadly huanglongbing is spreading within California residential areas and threatens commercial citrus production. This web site is designed to show citrus growers where the Asian citrus psyllid and the HLB disease are located. Since there is currently no cure for the disease, the best management strategy is reducing the psyllid vector with insecticides and removal of infected trees. This web site will provide a list of the ACP-effective insecticides, information about the best timing of their use, and strategies for treatment.

Homeowners

Residential Citrus – What should I do to protect the citrus in my yard?

https://ucanr.edu/sites/ACP/Master_Gardeners/

PRINT | SITE MAP | Enter Search Terms | GIVE

University of California, Division of Agriculture and Natural Resources

Asian Citrus Psyllid Distribution and Management

Home | Growers | Homeowners | Master Gardeners | Map of Psyllids, HLB and Parasites

- **Home**
- Grower Options
- Homeowner Options
- Master Gardeners

Master Gardeners

NEW Cell phone app - How close is HLB to my home?

Teach homeowners to use the phone app to find out how close HLB is to their home and encourage them to replace citrus trees with other fruit trees if they are within within 5 miles of the disease.

Type ucanr.edu/hlbapp into the search engine of the phone. Bookmark handouts with the phone app url and QR code are available.


Ok, back to our Presentation!!!!

Today's talk:

- Basics of designing a sustainable yard
  - *What makes a yard sustainable?*
  - *Create new spaces & changing old spaces*
  - *Right plant, Right Place, Right Time*
  - *Hydrozoning your plants*

- Tips to help you use water more efficiently: Using water wisely!
  - *Understanding your soil*
  - *Watering plants correctly*
  - *Managing pests to keep plants stress free*

- Best plants for pollinators
  - *Making your house a home for pollinators*
  - *Keeping pollinators and your garden healthy*

Features of a Sustainable Yard

- *Goal or Result Oriented*
- *Factors in many aspects of sustainability to create balanced outcomes*
- *Create a yard that needs fewer inputs (time, fertilizer, money, etc.) for health and beauty over time*
- *Creates a better future for future generations*

What makes a yard sustainable?

- *Think about your goals*
  - What part of the world are your trying to make sustainable and in what way?
- *Do you want to save:*
  - Time?
  - Money?
  - Habitat?
  - Soil, Air, Water?
  - Species?

Creating new spaces:

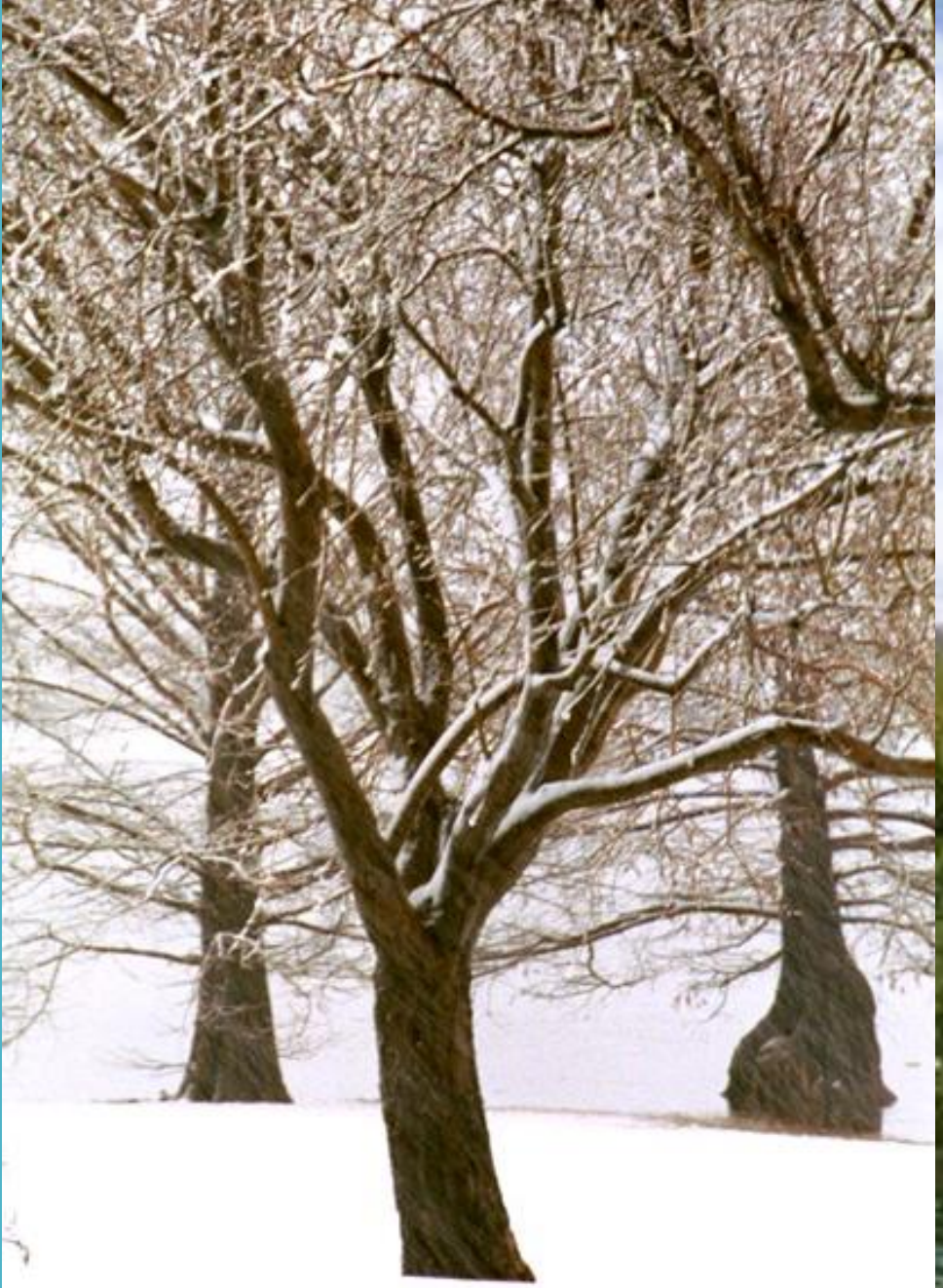
- Once goals are established for new gardens, look at the following factors:
  - *What plants do well in your climate (sunset zone)*
  - *Your budget: Starting Fresh or Upcycling, or a little of both*
  - *Size of area you are working on*
  - *Purchasing new plants; using cuttings and seeds*
  - *Hardscape for "infrastructure"*
- Seasonality of garden
  - *"Foundation" plants (for me it's often herbs)*
  - *Provide habitat, food and shelter throughout the year*
- Map it out and check out great resources available to you!

Changing old spaces:

- Phase out old plants
  - *As plants die remove them*
  - *Relocate plants to more appropriate areas in your yard*
- Slowly create “hydrozones”
- Work in sections
- *Or* go for it and do a make over!

Right Plant….Right Place…Right Time

- Know your “zones”
- Know your Microclimates
- Plant at the right time of year for your plants
  - Often fall and spring are best



Select plants recommended for your *Sunset Zone*

Sunset Zones are More Specific:

San Bernardino County Covers
5 Zones!

Sunset Zones In San Bernardino County

7: Lake Arrowhead
10: Victorville
11: Barstow
18: Chino, Ontario, Redlands
19: Claremont, Pomona

Mountain Areas:

ZONE 7. Oregon's Rogue River Valley, California's High Foothills

Growing season: May to early Oct. Summers are hot and dry; typical winter lows run from 23 degrees to 9 degrees F/-5 degrees to -13 degrees C. The summer-winter contrast suits plants that need dry, hot summers and moist, only moderately cold winters

https://www.sunsetwesterngardencollection.com/climate-zones/zone/central-california

High Deserts:

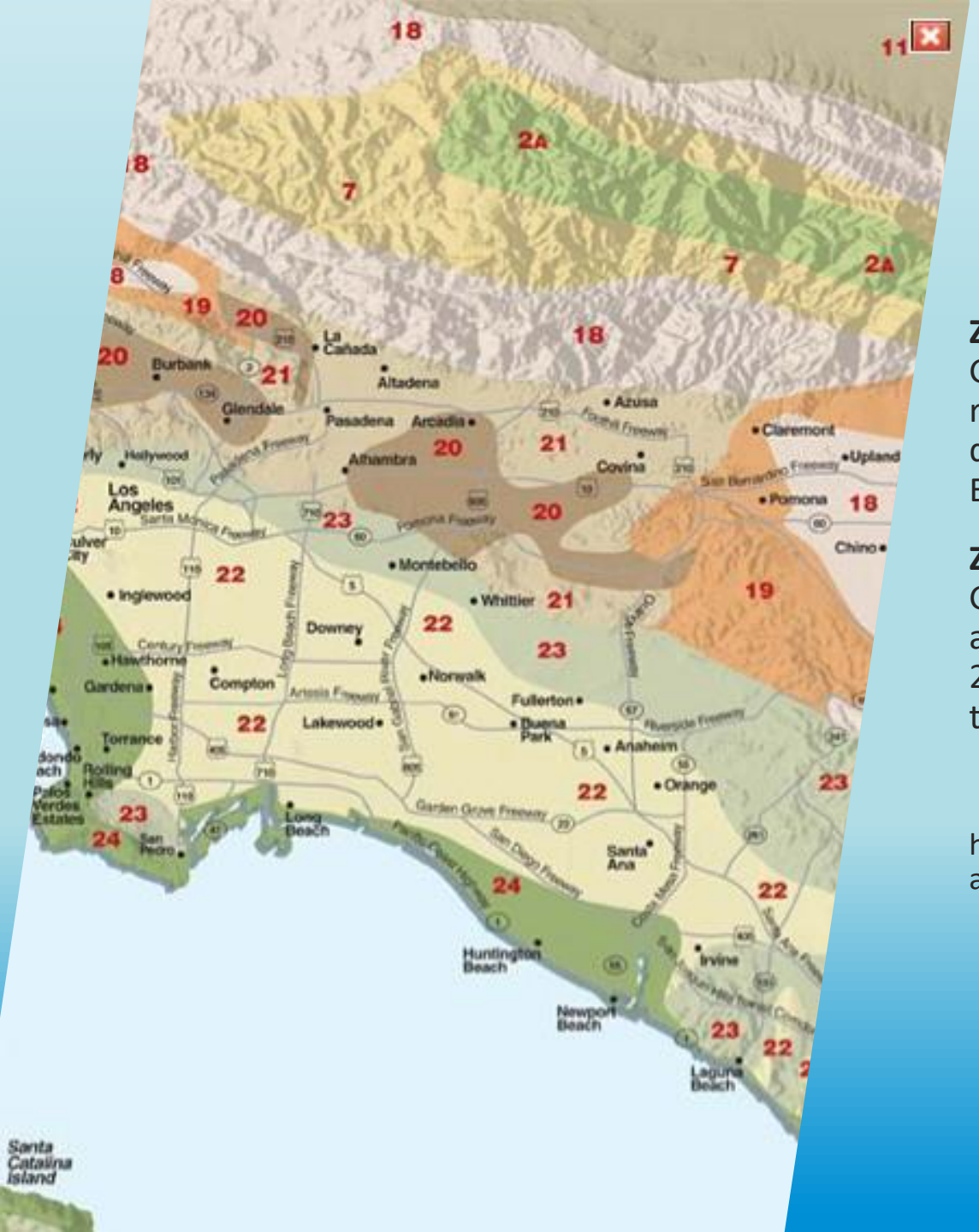
ZONE 10. High Desert Areas of Arizona, New Mexico, West Texas, Oklahoma Panhandle, and Southwest Kansas

Growing season: April to early Nov. Chilly (even snow-dusted) weather rules from late Nov. through Feb., with lows from 31 degrees to 24 degrees F/-1 degree to -4 degrees C. Rain comes in summer as well as in the cooler seasons.

ZONE 11. Medium to High Desert of California and Southern Nevada

Growing season: early April to late Oct. Summers are sizzling, with 110 days above 90 degrees F/32 degrees C. Balancing this is a 3 1/2-month winter, with 85 nights below freezing and lows from 11 degrees to 0 degrees F/-12 degrees to -18 degrees C. Scant rainfall comes in winter

https://www.sunsetwesterngardencollection.com/climate-zones/zone/southern-california-desert

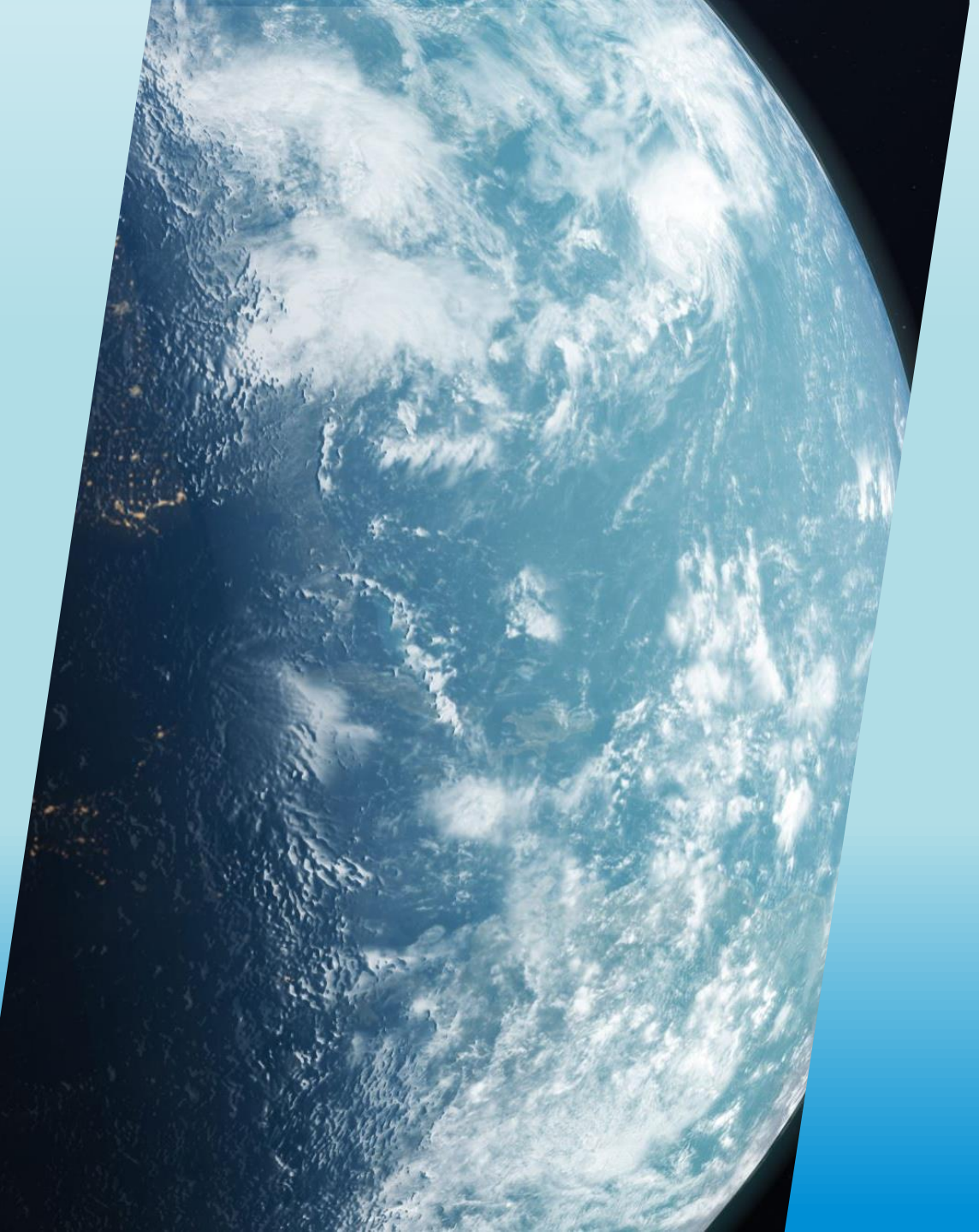


Valleys:

ZONE 18. Hilltops and Valley Floors of Interior Southern California
Growing season: mid-Mar. through late Nov. Summers are hot and dry; rain comes in winter, when lows reach 28 degrees to 10 degrees F/-2 degrees to -12 degrees C. Plants from the Mediterranean and Near Eastern regions thrive here.

ZONE 19. Thermal Belts around Southern California's Interior Valleys
Growing season: early Mar. through Nov. As in Zone 18, rainy winters and hot, dry summers are the norm—but here, winter lows dip only to 27 degrees to 22 degrees F/-3 degrees to -6 degrees C, allowing some tender evergreen plants to grow outdoors with protection

https://www.sunsetwesterngardencollection.com/climate-zones/zone/los-angeles-region



Knowing your *Microclimate*:

What are some things that impact your microclimate?

Orientation towards sun (eastern exposure, western exposure)

Wind patterns in your area

Heat islands around your garden area

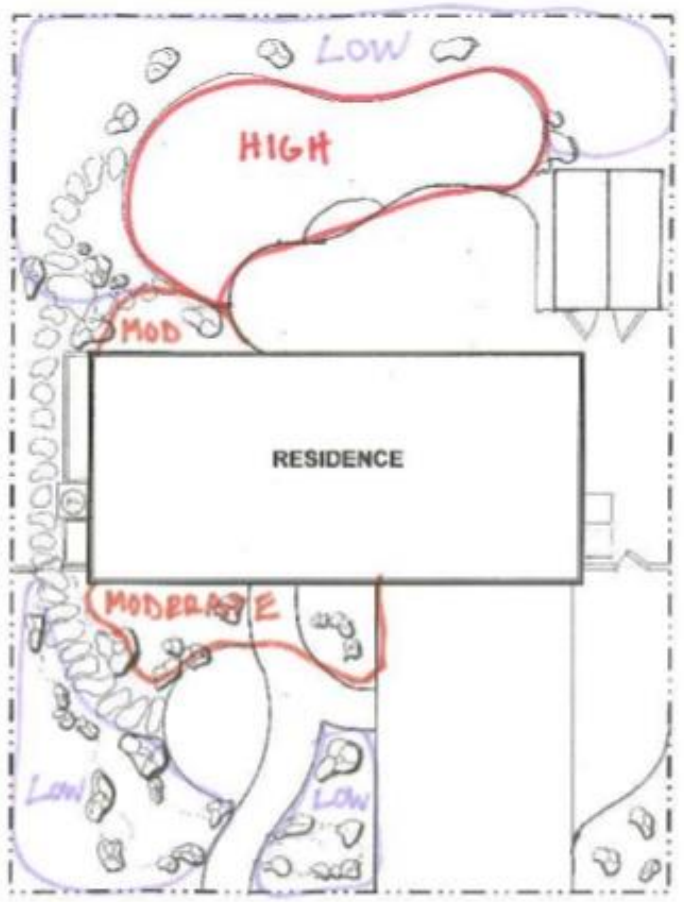
Dips and Hills on Property

Shading caused by houses, fences, large trees, etc

Hydrozone: Plant Species With Similar Water Needs Together

Hydrozone

Planting design should take plant watering requirements into account and group plants who like the same conditions in the same areas.




Low
Moderate
Low
Low
Low
Low
Moderate
Moderate
Low
Moderate
Moderate
Low


2.6 gal / wk
4.2 gal / wk
2.6 gal / wk
1.7 gal / wk
.95 gal / wk
.95 gal / wk
1.0 gal / wk
4.2 gal / wk
.95 gal / wk
2.4 gal / wk
2.4 gal / wk
.4 gal / wk

Few other factors to consider in design:

- Use the height zones of your growing plants to create vertical layers, if safe (creating fuel ladders)!
- Consider viewpoint in your space, looking out and looking in (do you want a hidden space, or a view?)
- Natural slopes, low areas, wind movement, remembering your microclimates!
- Look at natural drainage on your property and use to your advantage, possibly creating swales, or dry riverbeds

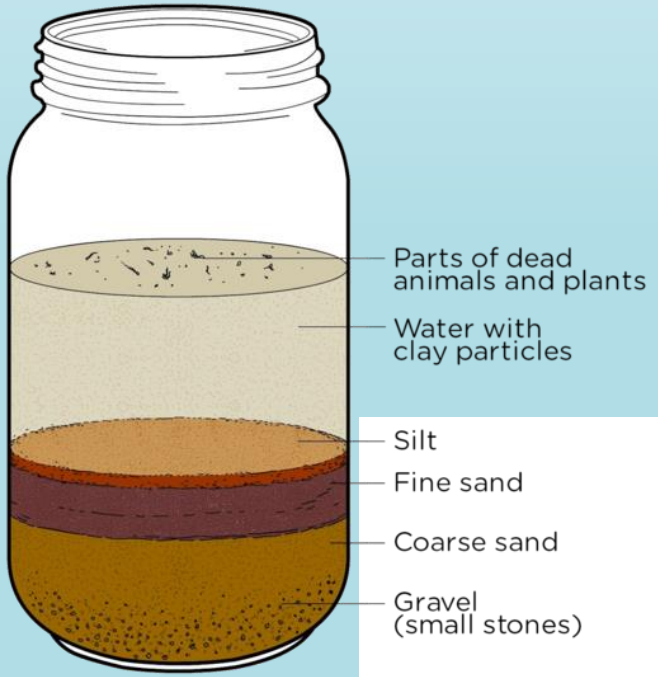
Using Water Wisely!

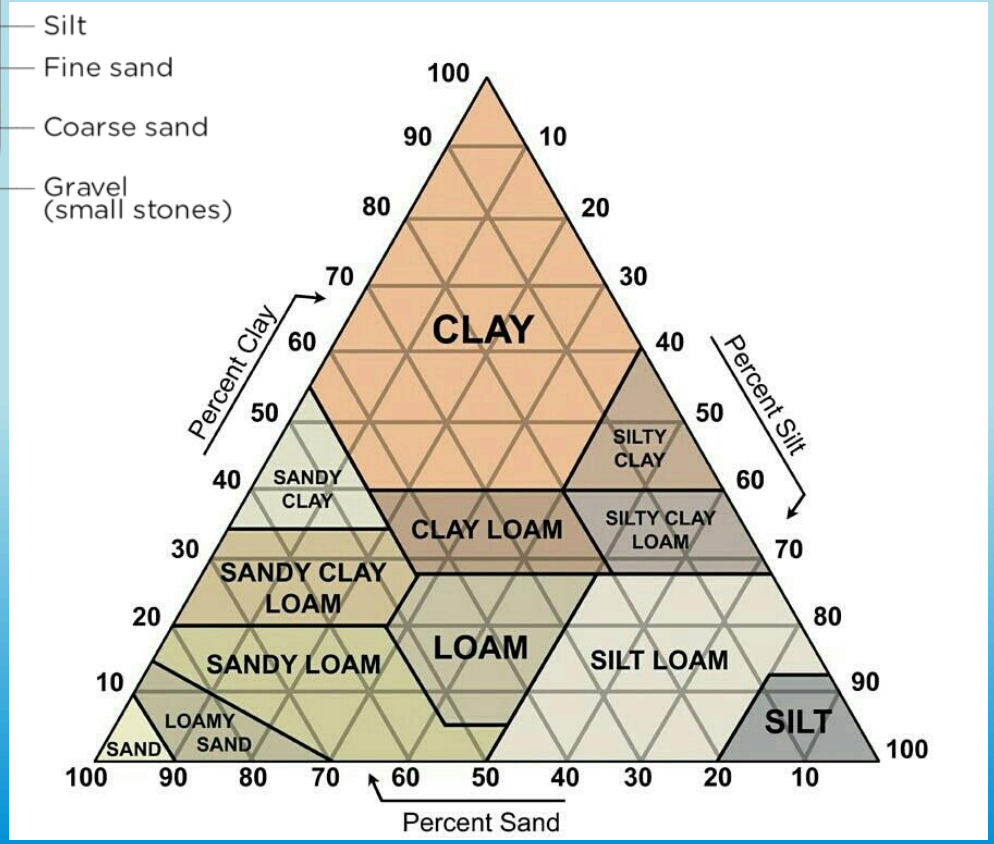
- *Plants that are suited for your climate (most of the time!)*
- *Watering efficiently*
- *Designing gardens with water use in mind*
- ***Water spent wisely in your yard to create habitat is water well spent!***

Knowing your Soil:

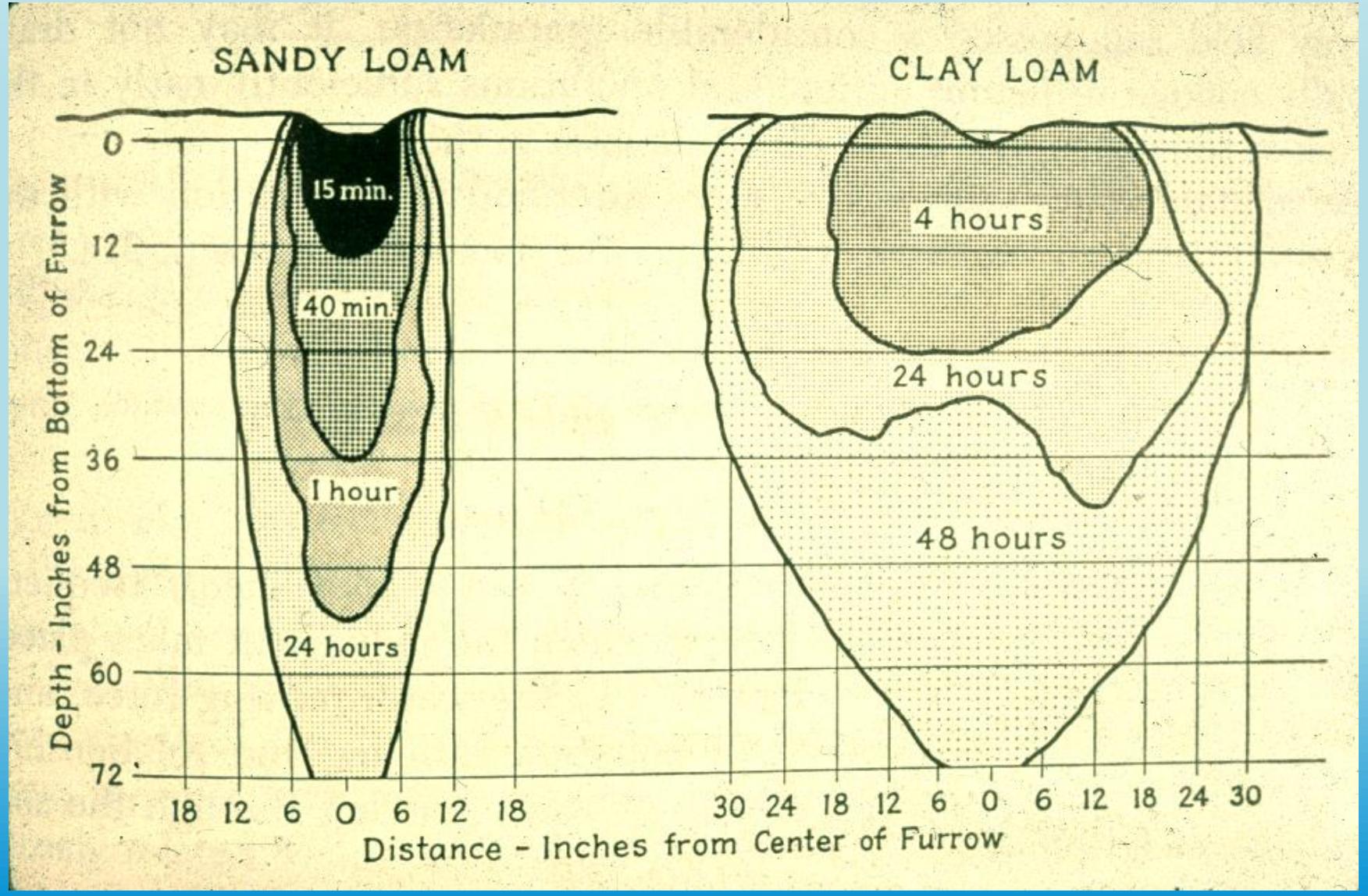
Soil jar test

- Amend heavy clay like soil with compost to improve drainage
- Amend sandy soil with compost to improve water retention



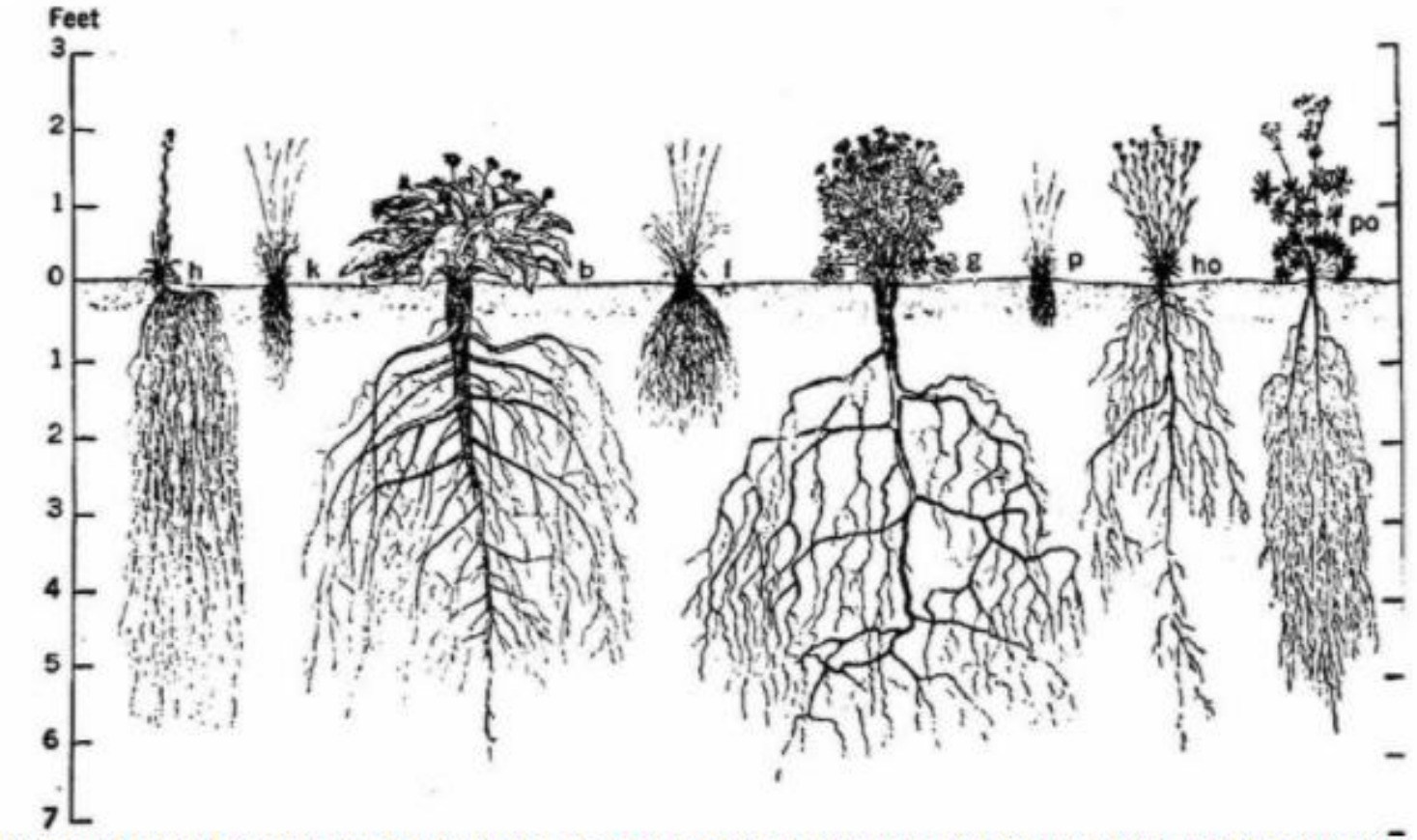


Determine Soil Water Holding Capacity



Water plants to the right depth

Water deeply to encourage downward root growth



Taproot and fibrous root systems in comparison (from: http://bugs.bio.usyd.edu.au/learning/resources/plant_form_function1/plant_form/primary_roots.html).

California Gardening

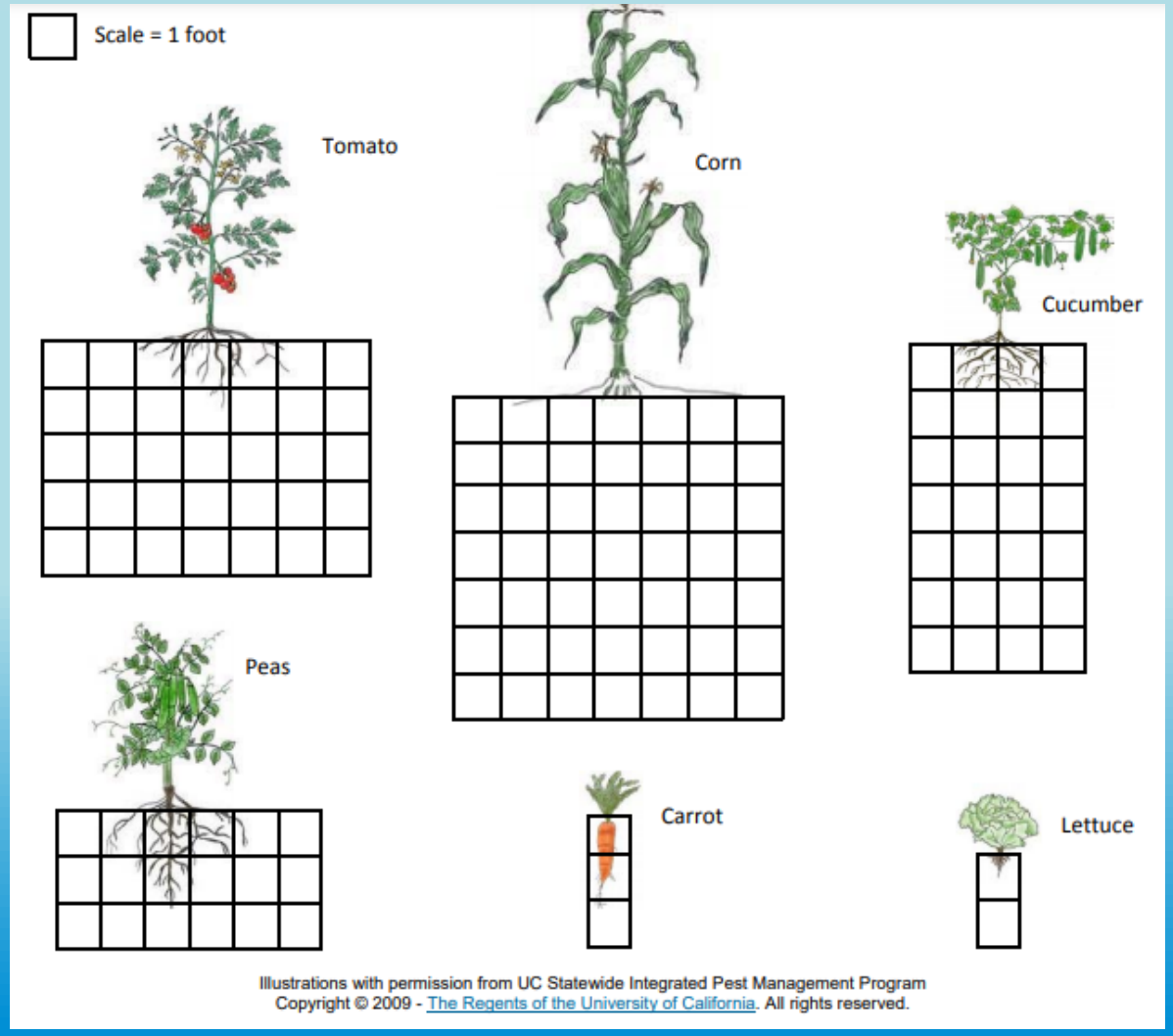
http://cagardenweb.ucdavis.edu

Vegetables | How do I water my vegetable garden? | Rooting depths

Comparative Rooting Depths of Common Garden Vegetables – Pam Geisel

These drawings illustrate the approximate rooting depth of different types of vegetables. The more squares, the larger the rooting depth and rooting area. These vegetables will do best with longer, less frequent and slow irrigation so that the root zone is entirely filled with water. Those plants with fewer squares typically have a much smaller root zone and will require more frequent but shallower irrigation.

These are only approximate rooting depths. Heavy soils, soils that are compacted, have hard pan, or clay layers may limit rooting depth significantly. Adjust irrigation accordingly. Use a shovel or soil probe to determine if water is penetrating deep enough after you have completed an irrigation cycle.



Water frequency

- Varies by:
  - *Soil type*
  - *Slope of ground*
  - *Season*
  - *Weather: humidity, wind, intensity of sun, length of day, time of year, marine layer*
- Check soil before hand watering & keep an eye on soil with automatic and manual sprinkler systems (Moss? Mushroom? Standing water?)
- Dig down to check soil

Established plants:

- Trees: deeply and infrequently
- Bushes/Shrubs: deeply and infrequently
- Annual and perineal flowers: keep well watered, but not soggy
- Natives: provide supplemental water as needed (don't be *shocked* by summer dormancy)
- Fruits and Veggies: need consistent water for quality produce

Newly planted plants:

- Trees: well at planting, and then frequency depends on canopy and tree type until established
- Bushes/Shrubs: well at planting and until established
- Annual and perineal flowers: keep well watered, but not soggy
- Natives: water in well to establish, but do not drown
- Fruits and Veggies: water in well to establish, but do not over water

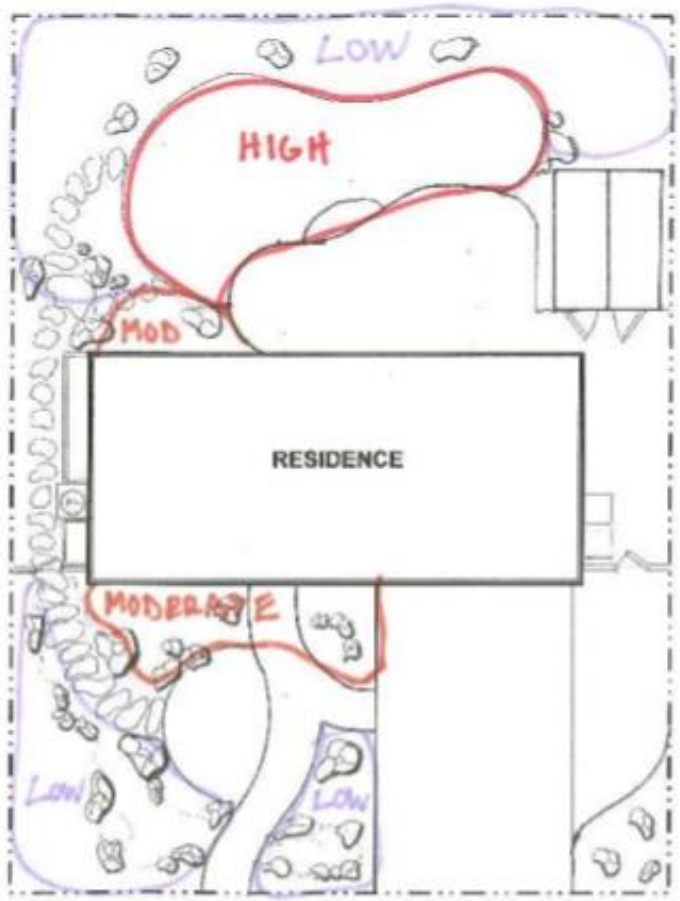
Most common mistakes with watering:

- Overwatering established plants
- Underwatering new plantings
- Watering just because a plant is wilted without checking…too much love!
- Watering too long (may need to water cycle) to the point of runoff
- Plants in soil that is not right for them, leading to watering related issues
- Too much water on the leaves

Hydrozone: Plant Species With Similar Water Needs Together

Hydrozone

Planting design should take plant watering requirements into account and group plants who like the same conditions in the same areas.



Newly planted plants will initially take more water, than similar established plants

Fertilizer Activities Contributing to Water Quality Issues & Wasted Water

Off-target application

- Poor equipment
- Poor technique

Improper timing

- Leaching/Runoff

Excess application

- Leaching/Runoff
- Poor equipment calibration

Avoid Over-fertilizing!

Too much nitrogen and phosphorus can lead to water pollution

- Most landscapes are over-fertilized
- Ornamentals require much less fertilizer than edibles
- Correcting soils with excess salts requires more water

Benefits of Mulches

- Reduce weed seed germination when applied 3-4 inches thick
- Add organic matter to soil slowly over time
- Helps retain soil moisture
- Buffer soil temperature
- Prevent ‘lawn mower blight’ and string-trimmer damage to trees
- May reduce severity of diseases from some plant pathogens

Apply 3-4 Inches of Mulch (organic preferred!)

- Keep it several inches away from tree trunk
- Remember to water beneath the mulch
- Replace mulch as needed, do not dig into soil
- Can be used on fruits and veggies too!

Keeping your plants healthy:

- Provide plants with appropriate amount of light:
  - *Fruit trees and Ornamental Trees*
  - *Sun or shade loving plants*
  - *Fruits and Veggies*
  - *Relocate plants to more appropriate areas in your yard*
- Water properly
- Keep plants pest free and encourage beneficial predators

NOTE: all the effective insecticidal sprays kill bees and other beneficial insects. Do not spray while trees are in bloom.

http://ipm.ucanr.edu/PMG/menu.homegarden.html

UNIVERSITY OF CALIFORNIA AGRICULTURE & NATURAL RESOURCES

UC IPM

Statewide Integrated Pest Management Program

What is IPM? | Identify & Manage Pests | Research | Publications | Training & Events | Links | About Us | Contact Us | Subscribe

HOME

ON THIS SITE

- What is IPM?
- Home & landscape pests
- Agricultural pests
- Natural environment pests
- Exotic & invasive pests
- Weed gallery
- Natural enemies gallery
- Weather, models & degree-days
- Pesticide information
- Research
- Publications

PRINT

Home, garden, turf, and landscape pests

University of California's official guidelines for managing pests with environmentally sound methods. (More...)

Pests of homes, structures, people, and pets

Household pests

- Pests that sting, bite, or injure
- Wood-destroying, food, fabric, and nuisance pests
- Vertebrate pests: birds, mammals, and reptiles

Pests in gardens and landscapes

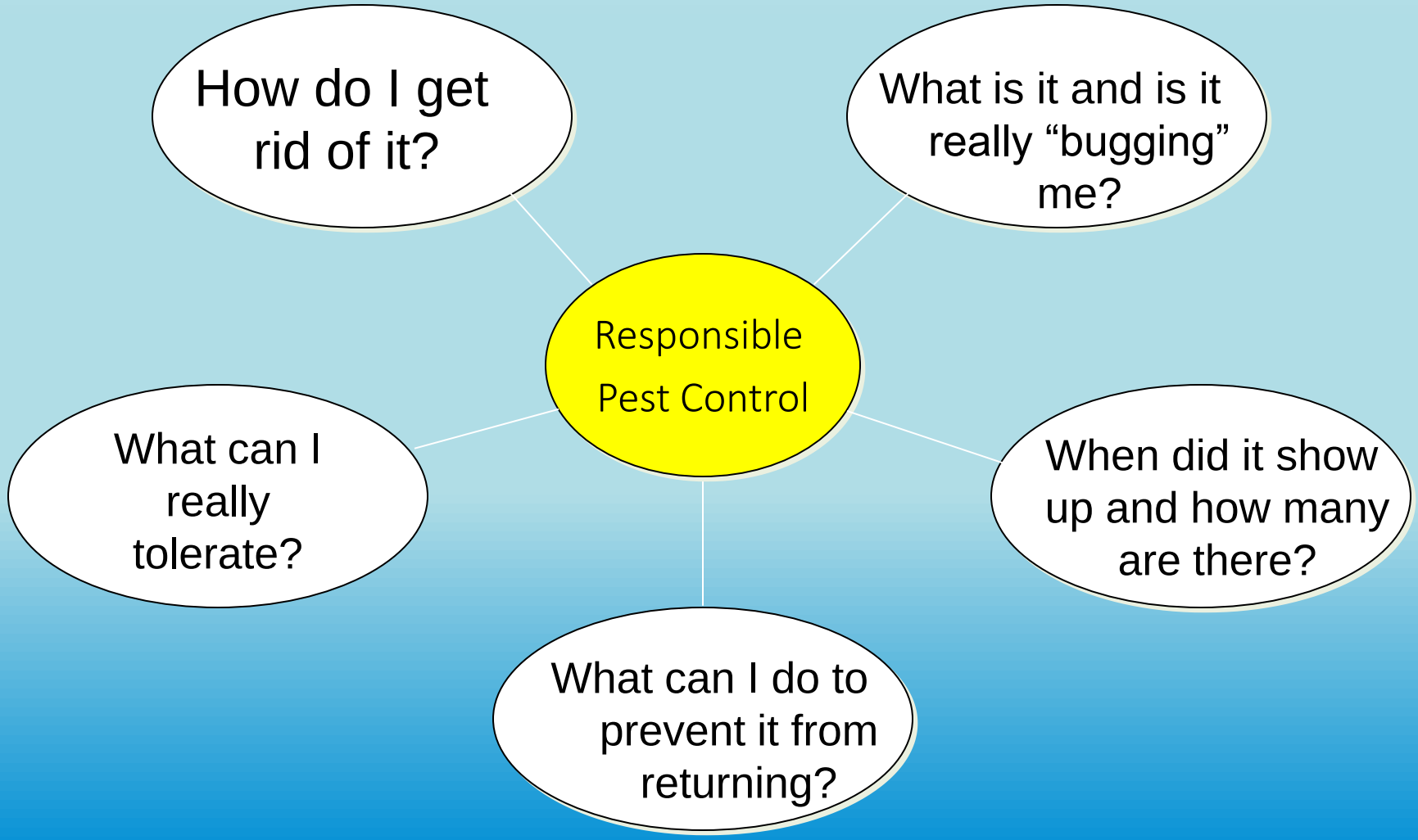
Choose a plant to find the most likely source of your pest problem

- Flowers
- Fruit trees, nuts, berries, and grapevines
- Lawns and turf (including comprehensive lawn guide)

QUICK LINKS

- Pest Notes library
- Quick Tips library
- Video library
- Seasonal Landscape IPM Checklist
- Pests in the Urban Landscape Blog
- Plant problem diagnostic tool

What is Responsible Pest Control?



Implement Sound Integrated Pest Management (IPM) Practices

Integrated Pest Management - a strategy to prevent and suppress pest problems with minimum adverse impacts on human health, the environment, and non-target organisms.

Principles of IPM

- Always start by using proper planting and maintenance techniques in your landscape and garden

- Use of a pesticide should be a last resort (pesticides can harm the environment and kill off beneficials)

Characteristics of Least-Toxic Pesticides

- Effective against target pest
- Low acute and chronic mammalian toxicity
- Degrade rapidly
- Kill a narrow range of target pests
- Little or no impact on non-target organisms

http://www.pestproducts.com/antbaits.htm

Types of Least-Toxic Pesticides

- Pheromones and other attractants
- Insect growth regulators
- Repellents
- Desiccating dusts
- Soaps and oils
- Some botanical pesticides

To Review:

- Basics of designing a sustainable yard
  - *What makes a yard sustainable?*
  - *Create new spaces & changing old spaces*
  - *Right plant, Right Place, Right Time*
  - *Hydrozoning your plants*

- Tips to help you use water more efficiently: Using water wisely!
  - *Understanding your soil*
  - *Watering and fertilizing plants correctly*
  - *Apply mulch*
  - *Managing pests to keep plants stress free*

Let's take a break & Go outside!

- What might you add to or change in your yard?
- Did you see any pollinators?
- Do you have plants that provide year-round habitat?

Planting and Gardening for Pollinators
(and other beneficial insects too!)

- *Making your house a home for pollinators*
- *Keeping pollinators and your garden healthy*
- *Selecting plants for your pollinators*

Making your House a Home for Pollinators & Beneficial's:

- *Making your house a home for pollinators*
- *Provide for basic needs of pollinators and beneficial insects*
- *Keeping pollinators and your garden healthy*

Keeping your Pollinators Healthy *&* your Plants too!

- Select plants that will do well in your yard
  - Right Plant
  - Right Place
  - Right Time
- Keep your plants:
  - *Properly watered*
  - *Properly fed*
- Do you want to treat that pest in your yard? On your veggies?
  - *Is it something you can tolerate*
  - *Can it be selectively managed*
  - *Could it have been more easily managed if caught early*

What's a pollinator & why do you want them? Think about yard Goals!

- Pollinators carry pollen from one plant to another
- To pollinate your plants (know what type of plants you want pollinated, and what their pollination method is)
- To create a healthy ecosystem
- To provide habitat to wildlife
- ….all of the above

Pollination

- Polle(i)nize: To supply with pollen
- Pollinate: To convey pollen to a stigma and so allow fertilization
- Polle(i)nizer: Another variety planted or grafted nearby to provide pollen (and fruit)
- Pollinator: An insect that pollenizes
- Fertilization: The act of initiating biological reproduction by pollination; union of male and female gametes (cells) to form a zygote

Note: slide curtesy of Janet Hartin and Chuck Ingles

Pollination and Fruitfulness

- Self-fruitful = The pollen from one flower will pollinate the pistil of the same flower
  - A nearby pollinizer may still enhance pollination
- Partially self-fruitful = Will set some fruit, but set far more with pollinizer

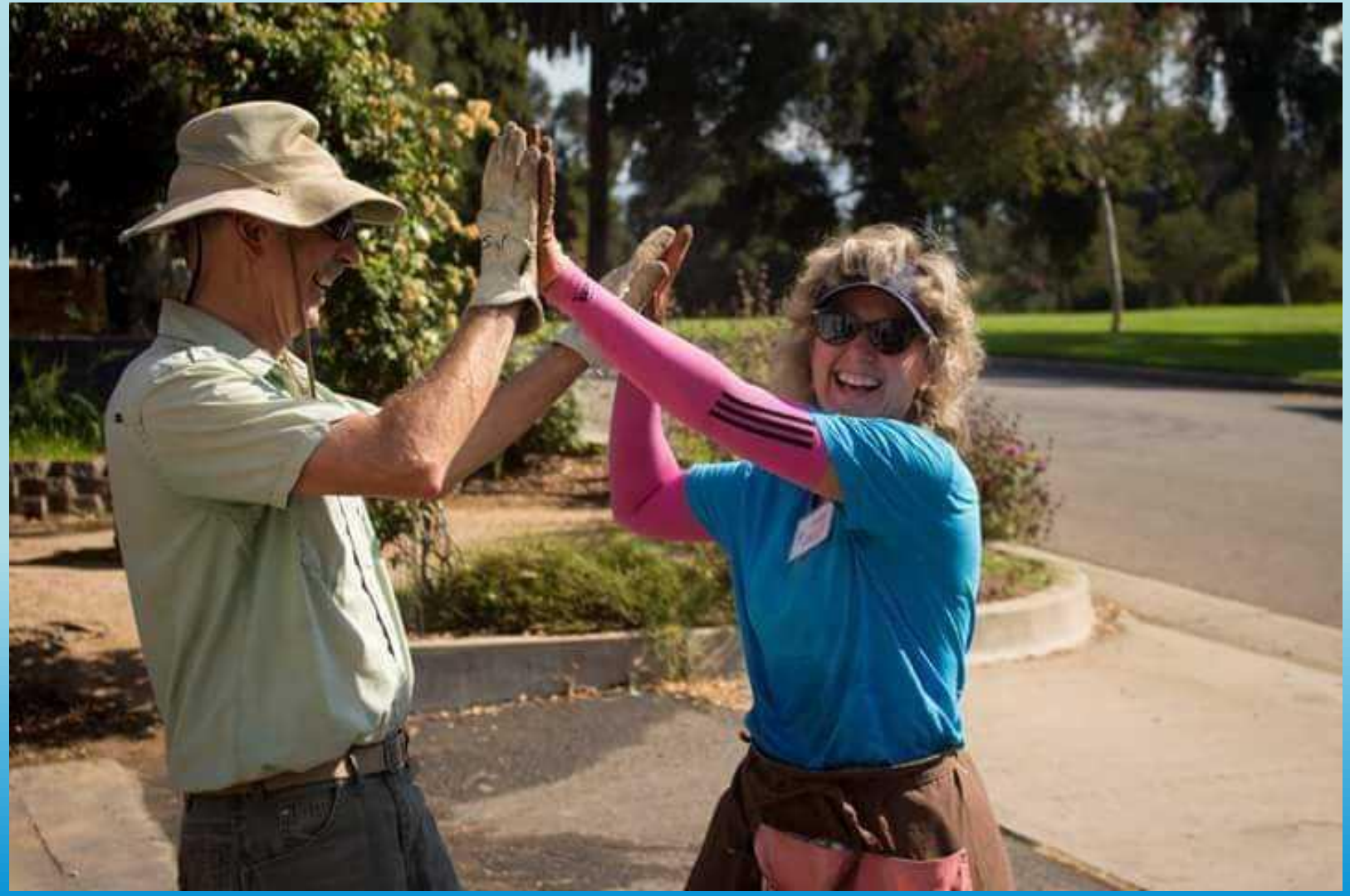
Note: slide curtesy of Janet Hartin and Chuck Ingles

Pollination and Fruitfulness

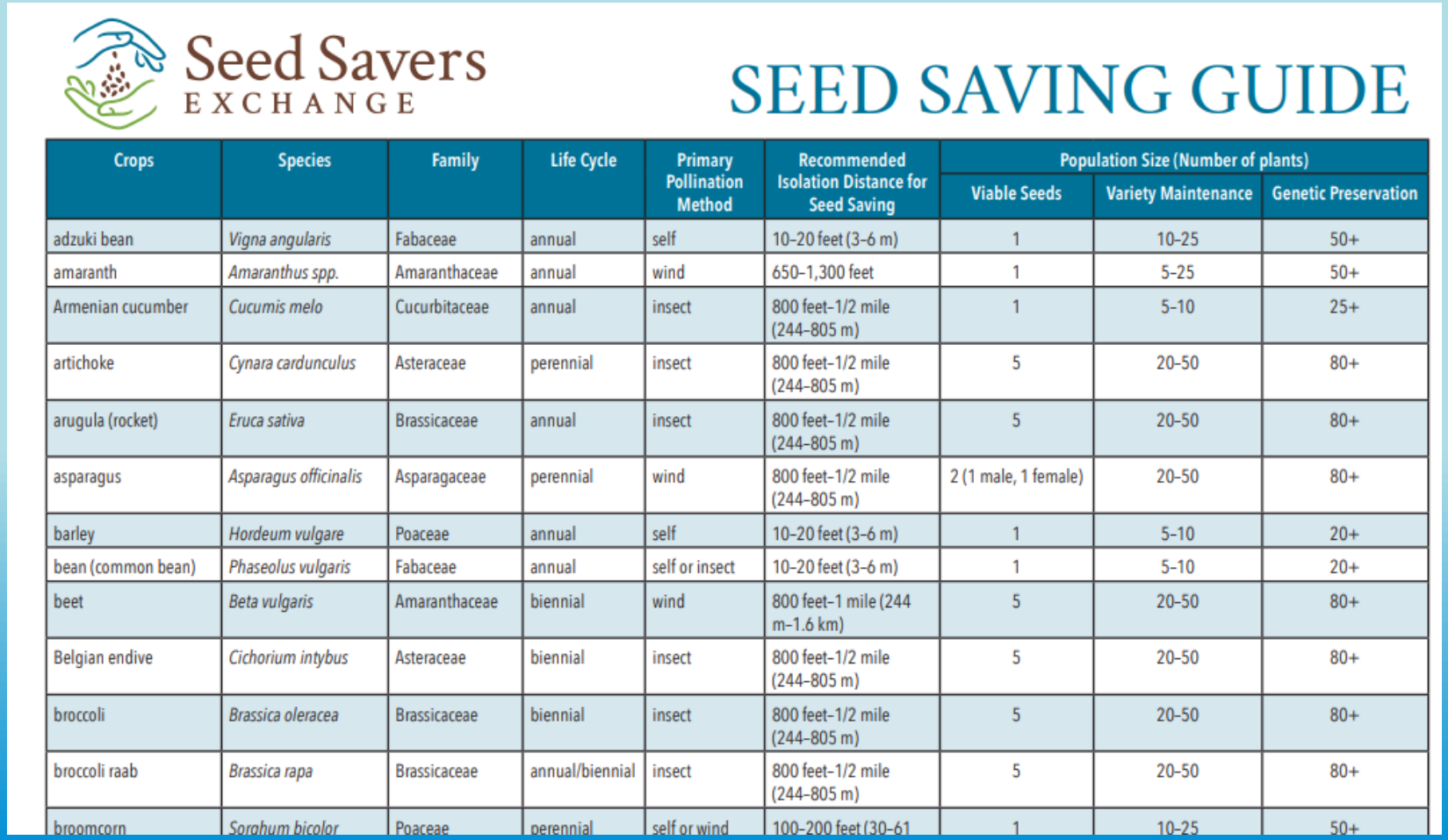
- Self-unfruitful / Self-sterile: Use another variety
  - Many pome fruit, cherry, plum (& hybrid) varieties
  - The closer the better for pollinizer
  - Bloom timing must overlap (they often don’t, so more than one pollinizer variety is best)

Note: slide curtesy of Janet Hartin and Chuck Ingles

Us!



Know how your plant is pollinated, if that's one of the goals!



Seed Savers EXCHANGE

SEED SAVING GUIDE

Crops	Species	Family	Life Cycle	Primary Pollination Method	Recommended Isolation Distance for Seed Saving	Population Size (Number of plants)		
						Viable Seeds	Variety Maintenance	Genetic Preservation
adzuki bean	*Vigna angularis*	Fabaceae	annual	self	10–20 feet (3–6 m)	1	10–25	50+
amaranth	*Amaranthus spp.*	Amaranthaceae	annual	wind	650–1,300 feet	1	5–25	50+
Armenian cucumber	*Cucumis melo*	Cucurbitaceae	annual	insect	800 feet–1/2 mile (244–805 m)	1	5–10	25+
artichoke	*Cynara cardunculus*	Asteraceae	perennial	insect	800 feet–1/2 mile (244–805 m)	5	20–50	80+
arugula (rocket)	*Eruca sativa*	Brassicaceae	annual	insect	800 feet–1/2 mile (244–805 m)	5	20–50	80+
asparagus	*Asparagus officinalis*	Asparagaceae	perennial	wind	800 feet–1/2 mile (244–805 m)	2 (1 male, 1 female)	20–50	80+
barley	*Hordeum vulgare*	Poaceae	annual	self	10–20 feet (3–6 m)	1	5–10	20+
bean (common bean)	*Phaseolus vulgaris*	Fabaceae	annual	self or insect	10–20 feet (3–6 m)	1	5–10	20+
beet	*Beta vulgaris*	Amaranthaceae	biennial	wind	800 feet–1 mile (244 m–1.6 km)	5	20–50	80+
Belgian endive	*Cichorium intybus*	Asteraceae	biennial	insect	800 feet–1/2 mile (244–805 m)	5	20–50	80+
broccoli	*Brassica oleracea*	Brassicaceae	biennial	insect	800 feet–1/2 mile (244–805 m)	5	20–50	80+
broccoli raab	*Brassica rapa*	Brassicaceae	annual/biennial	insect	800 feet–1/2 mile (244–805 m)	5	20–50	80+
broomcorn	*Sorghum bicolor*	Poaceae	perennial	self or wind	100–200 feet (30–61	1	10–25	50+

How to make your house a home

All life needs these things

Access to water

Access to food

Access to shelter

Way to reproduce

…are you wanting to attract all pollinators, or specific ones?

Provide food & water

Important to keep them clean

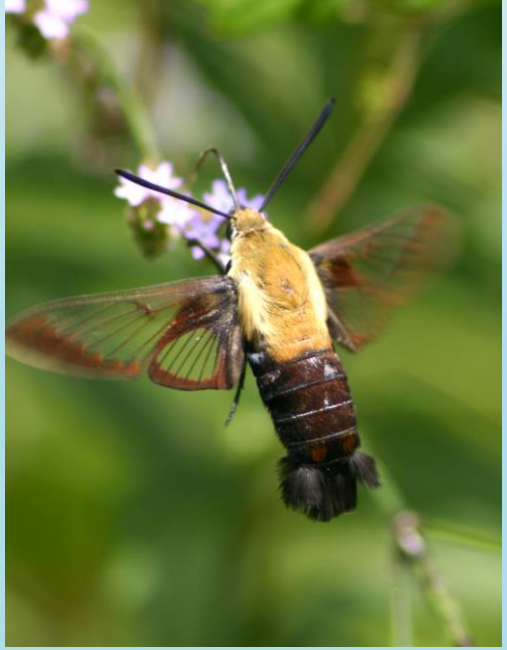
Create natural opportunities if possible

Food for all!

Create food sources that are a variety of colors and flower types

Create food sources that are available all year round, with nectar in the fall being important

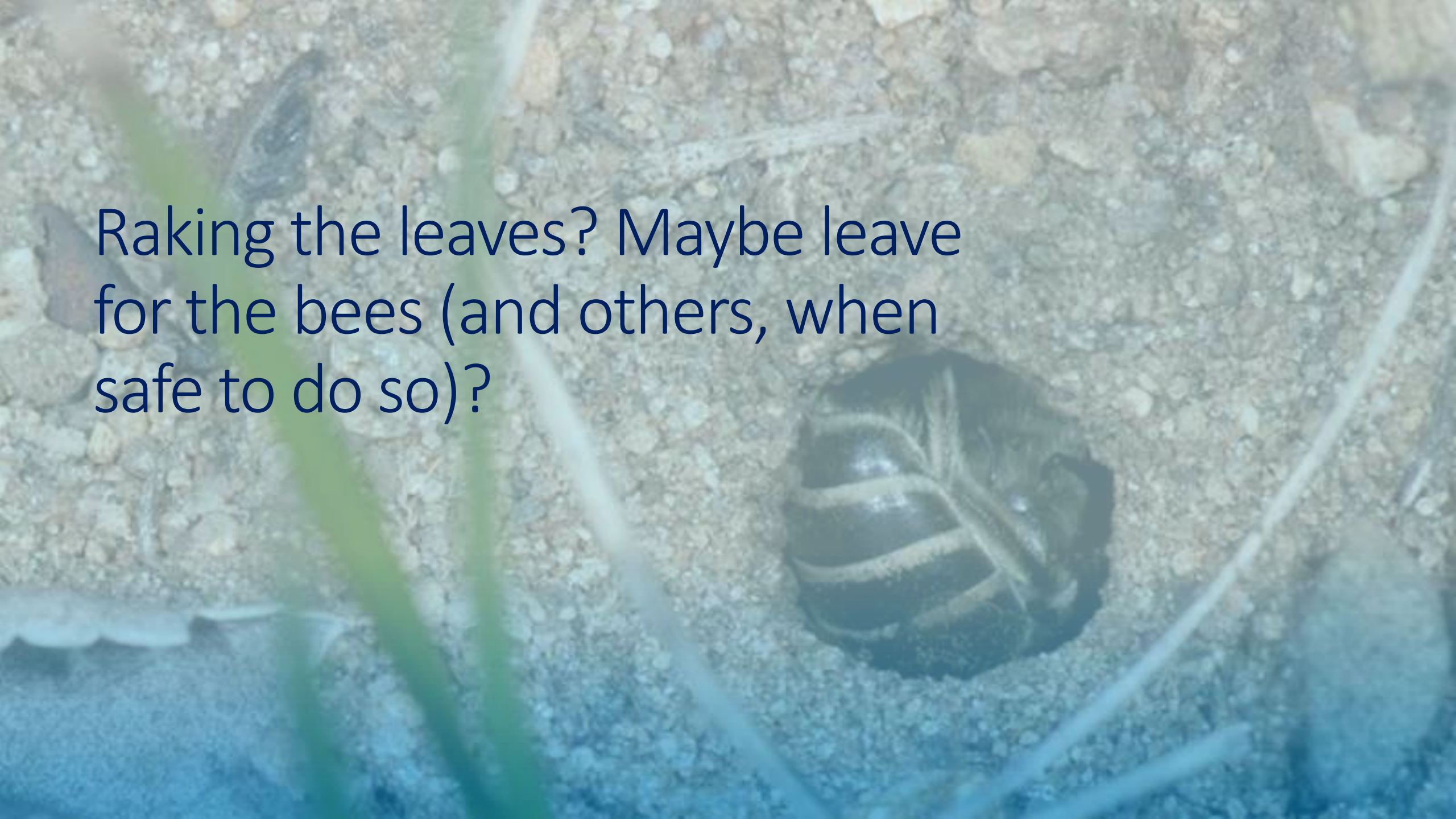
Remember the kids! They will need leaves to much for butterflies and moths; for beneficial predators they will need a few “pests” to munch as well!



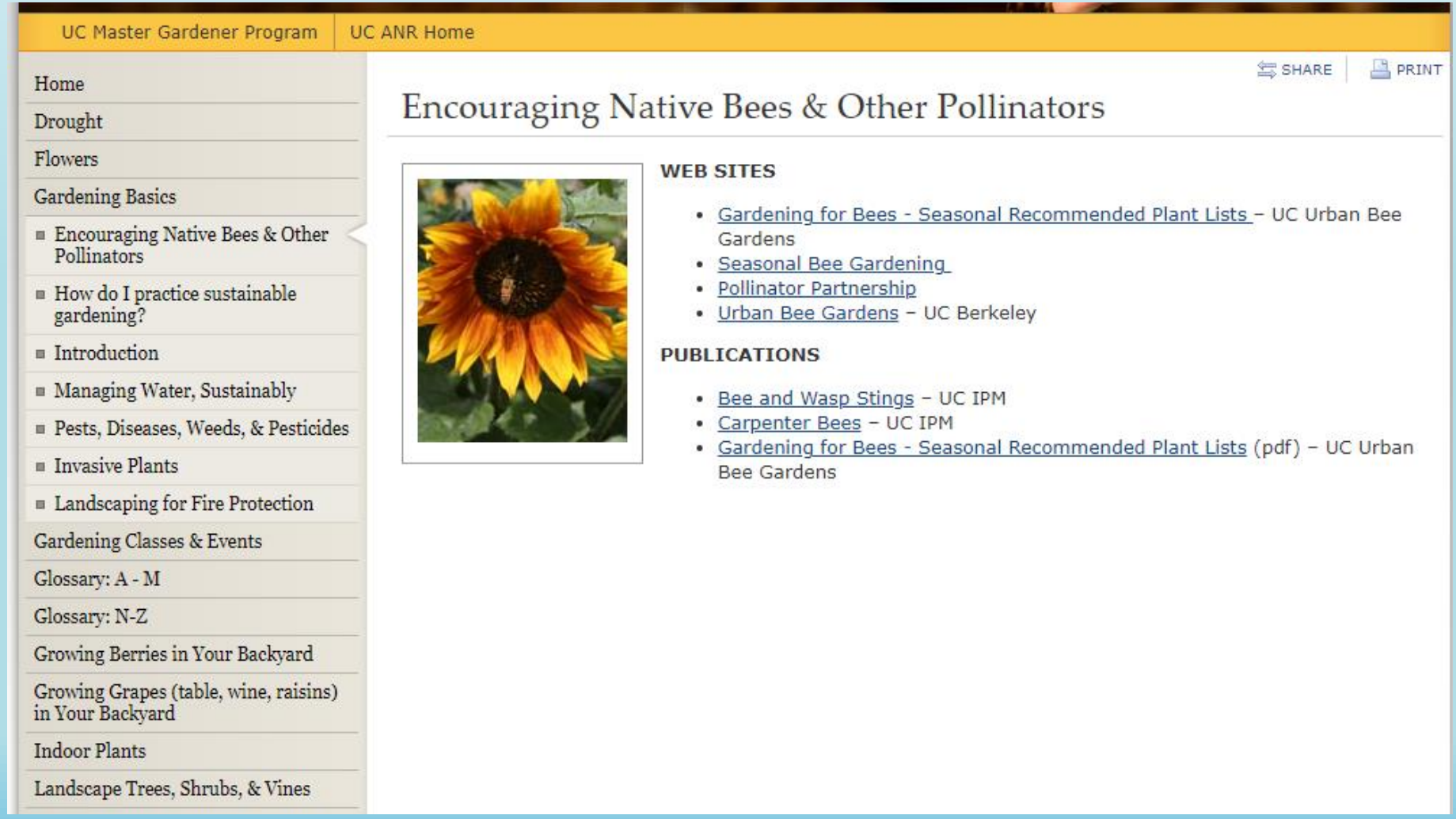
Really important to provide for adults ***and*** juveniles

Provide shelter for all phases of life

- Unraked leaves, and branches
- Unpruned trees and shrubs (at least in spring)
- Keeping your yard vary tidy leaves less places for your pollinators to hide, so keep that in mind when you are doing yard chores and treating for pests



Raking the leaves? Maybe leave for the bees (and others, when safe to do so)?



http://cagardenweb.ucanr.edu/General/Encouraging_Native_Bees_-_Other_Pollinators/

Access to reproduction opportunities

- Your house needs to be a home year round
  - Are you knowledgeable about time of year the pollinators you want reproduce, and in what type of environment?

Tip for success:

- Balance your desire for pollinators with your need for a pest free garden
- Pollinator and veggie garden *can* coexist

Stage 1: Egg

- This is where our little butterflies begin their journey
- If you look closely, you can often see the caterpillar inside developing
- Can be in many shapes depending on the species

Stage 2: Larvae (caterpillar)

- Primary goal: eat eat and eat!
- Will shed exoskeleton as they grow since their skin does not stretch

Stage 3: Pupae (Chrysalis)

- When caterpillar undergoes metamorphosis
- If you look closely at pupae, you can see midline of digestive system, future wing and antennae lines and more!

Stage 4: Adult Butterfly

- Emerge with soft, folded wings that they need to pump up with a substance called **Meconium**
- Primary focus of this stage is reproduction

Species Common to the Inland Empire

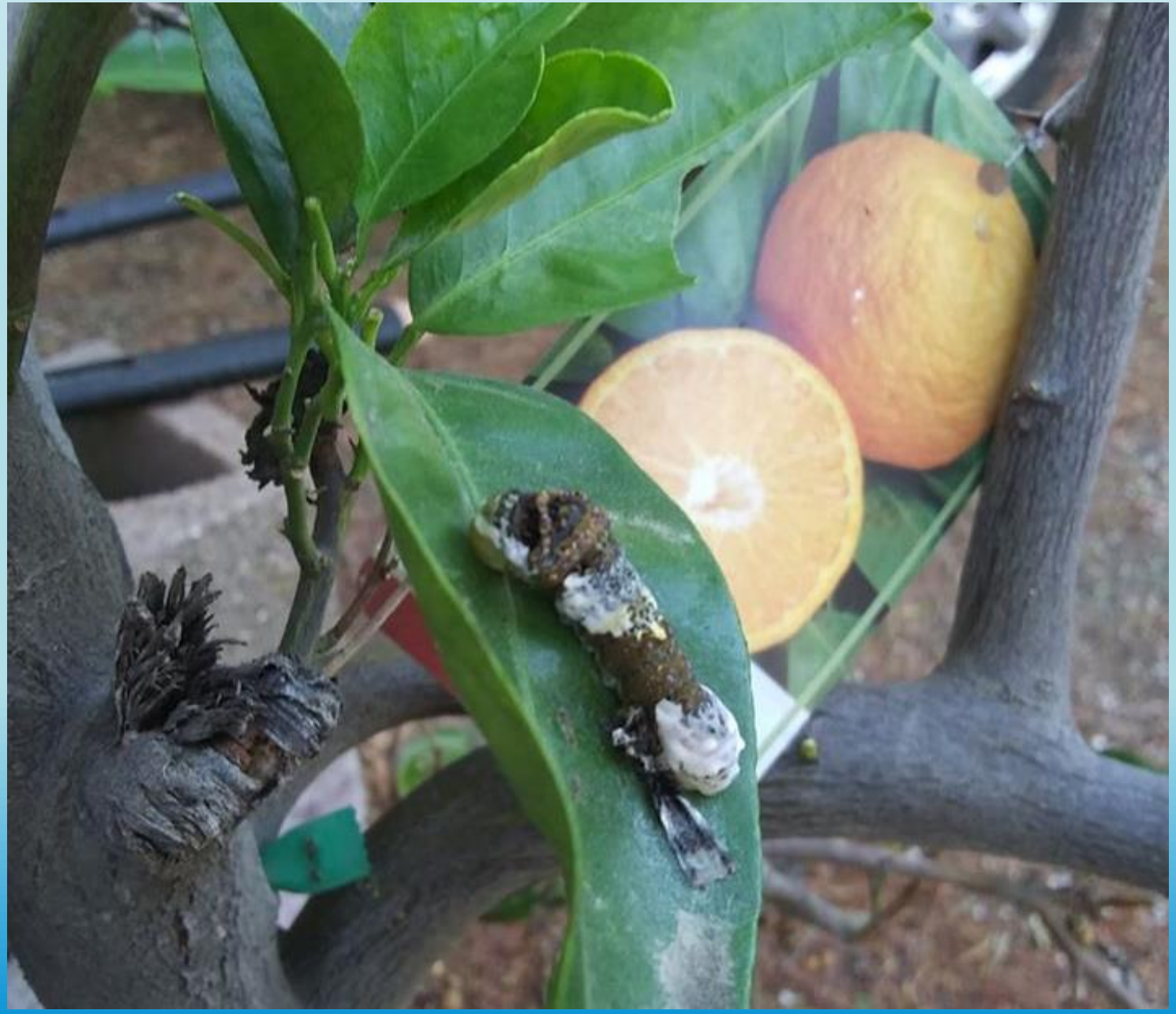
Monarch

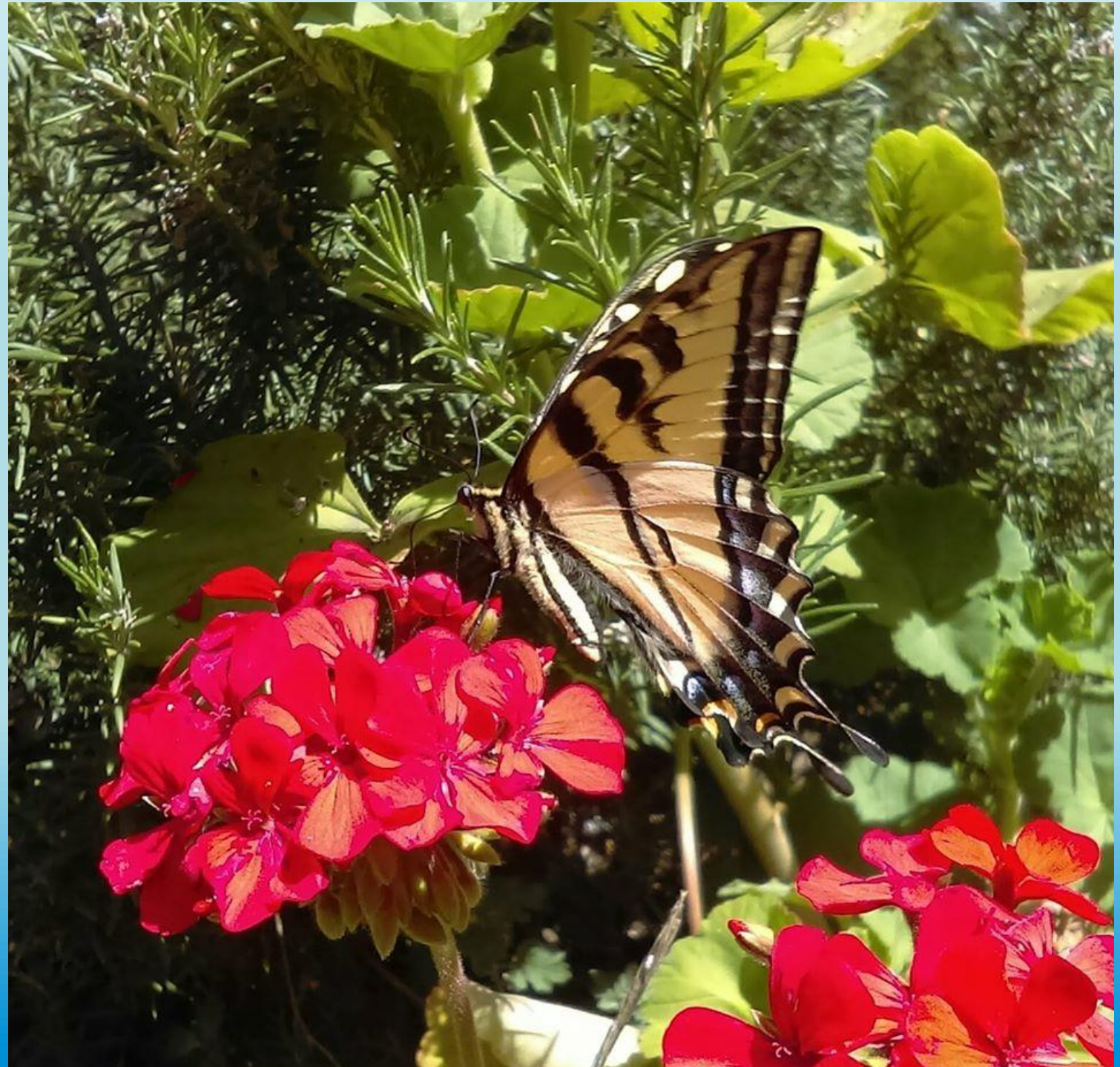

(c) Kathy Keatley Garvey


(c) Kathy Keatley Garvey

Habitat for Monarchs:

- Egg Laying, Catepillars, Chrysalis, Nectar: Milkweeds, *Asclepias*
- ***Note: be careful with nonnative (tropical) milkweeds!!***



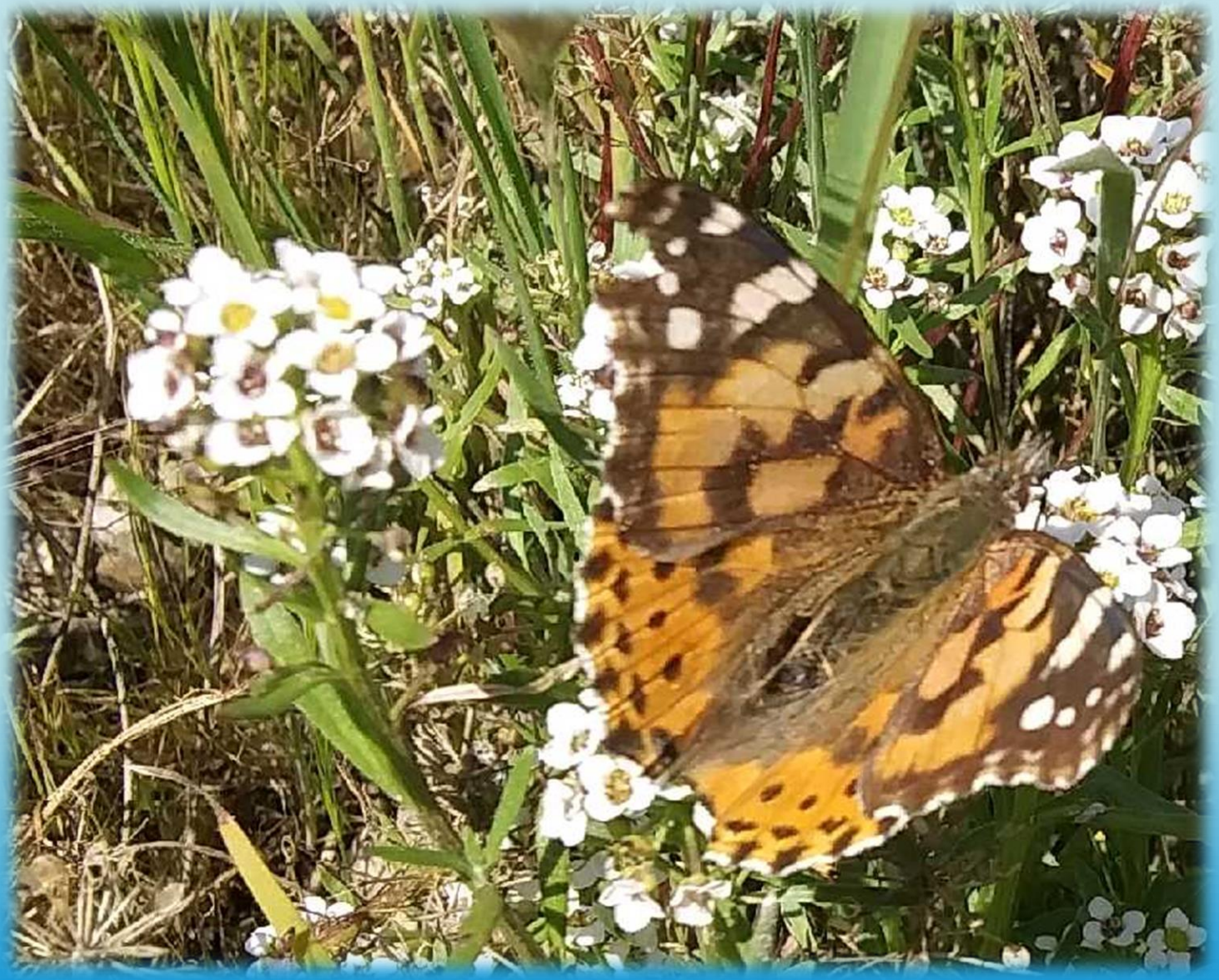


Painted Ladies are common in our area, especially in March and April when they migrate north from Mexico.

West Coast Lady is a close relative of the Painted Lady. Notice the orange bar on the front edge of the forewing.

Caterpillars of both ladies eat nettle , cheeseweed, and other plants.
They nectar on many flowers including mint, lantana, and native buckwheat.

Booklet created by Barbara Layer
Photos by Jennifer Sita Whitaker
Except cover (Barbara Layer)



April 10, 2021

Booklet created by Barbara Layer
Photos by Jennifer Sita Whitaker
Except cover (Barbara Layer)

This small Fiery Skipper is nectaring on native buckwheat . It also likes Lantana .Its caterpillars eat grass.

The Gulf Fritillary is native to Mexico but is found here where its larval food, passionvine grows. This one is nectaring on a zinnia .

https://www.butterflyidentification.com

University of Florida
http://entnemdept.ufl.edu/creatures/bfly/gulf_fritillary.htm

Gray Hairstreak on mint blossom. Notice the tails that look like antenna and the red dot that looks like an eye -to lead predators away from the head.

Marine Blue on alfalfa. The upper side of the wings are brown and blue. The caterpillars eat plumbago.

The Cabbage White is not a native butterfly. The caterpillars eat mustard, cabbage and other plants. This is a female. The male has only one dot on the forewing.

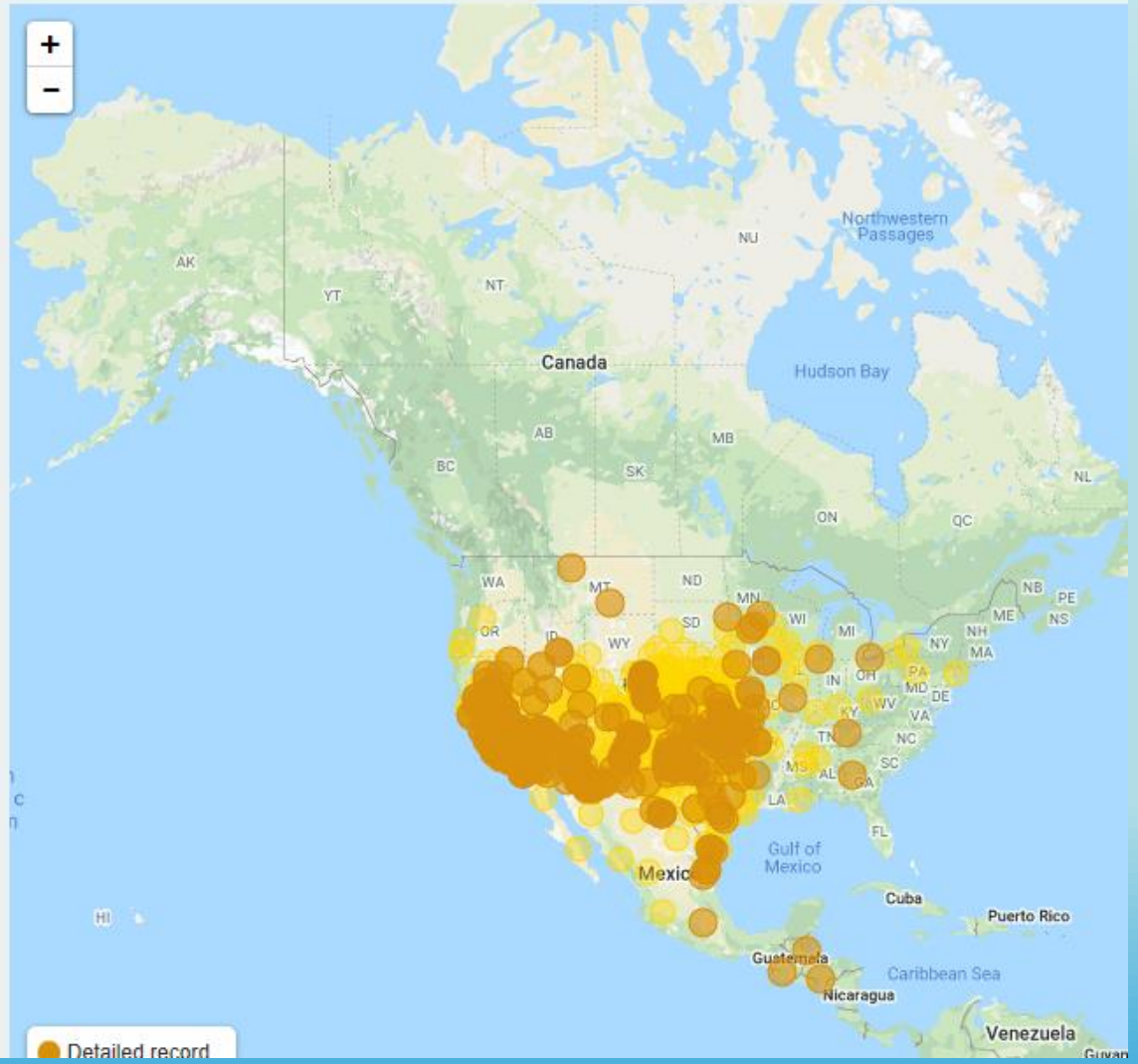
Booklet created by Barbara Layer
Photos by Jennifer Sita Whitaker
Except cover (Barbara Layer)

Gray Hairstreak
Caterpillar

Gray Hairstreak
Butterfly Caterpillar

https://www.butterflyidentification.com/gray-hairstreak.htm

Family: Lycaenidae
Subfamily: Polyommatinae
Identification: Upperside blue; male with purple tinge, female with no white. Underside of forewing with unbroken pale brown bands from costa to inner margin.
Wing Span: 7/8 - 1 1/8 inches (2.2 - 2.9 cm).
Life History: Males patrol to find females. Eggs are laid singly on flower buds of the host plant; caterpillars eat flowers and seedpods.
Flight: April-September in the north, all through the year in South Texas and southern California.
Caterpillar Hosts: Leadwort (Plumbago) and many legumes including alfalfa (Medicago sativa), milkvetch (Astragalus), and mesquite (Prosopis).
Adult Food: Flower nectar.



https://www.butterfliesandmoths.org/species/Leptotes-marina

spring and the summer months. Though smaller by size, the species is often confused with the large white because of the similarity in appearance.

Cabbage White Butterfly

Description and Identification

Caterpillar

The mature larva has a green to bluish-green coloration, with a black ring and small black pints around the spiracles. It also has a lateral row of dashes and a yellow mid-dorsal line, both in yellow. As an adaptation for camouflage, their green coloration makes them almost

Cabbage White Butterfly Larvae

Cabbage White Caterpillar

NEWLY ADDED BUTTERFLIES »

- MONARCH *(DANAUS PLEXIPPUS)*
- EDITH'S CHECKERSPOT *(EUPHYDRYAS EDITHA)*
- PAINTED LADY *(VANESSA CARDUI)*
- MILBERT'S TORTOISESHELL *(AGLAIS MILBERTI)*
- EASTERN BLACK SWALLOWTAIL *(PAPILIO POLYXENES ASTERIUS)*

https://www.butterflyidentification.com/cabbage-white.htm

This White lined Sphinx Moth can be found at dusk hovering while drinking nectar from flowers– like hummingbirds.

Mournful Duskywing on lavender lantana

Booklet created by Barbara Layer
Photos by Jennifer Sita Whitaker
Except cover (Barbara Layer)

San Bernardino Valley Municipal Water District

Inland Empire Resource Conservation District

Hornworm pupa.

Whitelined sphinx, a common "hummingbird" moth.

https://extension.colostate.edu/topic-areas/insects/hornworms-and-hummingbird-moths-5-517/

https://www.hummingbirdsplus.org/hummingbird-moth-facts/

collecting and sharing data about Lepidoptera

Mournful Duskywing
Erynnis tristis (Boisduval, 1852)

Family: Hesperiidae
Subfamily: Pyrginae
Identification: Male has a costal fold containing yellow scent scales; female has a patch of scent scales on the

More Tips for success:

- Don’t spray just because you see a pest, all pesticides, including organic will harm any insect it comes in contact with
- Keeping your yard too tidy is not always the best way to go!
- Understand the life cycle of the pollinator you want to bring to your yard
- Natives are great additions to your yard, but you can have a great pollinator friendly yard with nonnatives as well
- Avoid invasive (CALIPC website)

Right plant, right place

- SBVMWD Water Saving. Garden Friendly for the Inland Empire http://www.ie.watersavingplants.com/
- CalFlora (California Native Plant Society search engine)/ https://www.calflora.org/
- SelecTree (Urban Forest Ecosystem/Cal Poly collaboration)/ https://selectree.calpoly.edu/search/
- Inland Valley Garden Planner (Bob Perry, retired Cal Poly Professor of Landscape Architecture)/ /
- Water Use Classification of Landscape Species IV (WUCOLS) (UC Davis)/ https://ucanr.edu/sites/WUCOLS/

ie.watersavingplants.com

Home Landscapes Plants My List Fact Sheets Resources Irrigation Guide

ie.watersavingplants.com/plants.php


Attracts Butterflies


Attracts Birds


Attracts Hummingbirds


Erosion Control Plants


Deer Resistant Plants


Low Maintenance Shrubs

SUPPORT CAL-IPC

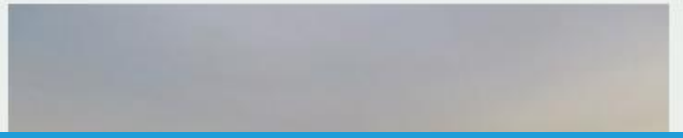
CAL IPC
CALIFORNIA
INVASIVE PLANT
COUNCIL

Protecting California's environment and economy from invasive plants

Home | About | Plants | Resources | Solutions | Join, Renew or Donate

Cal-IPC works to stop the spread of invasive plants across California...





Waterwise Community Center | INLAND VALLEY GARDEN PLANNER

Home Plant Finder Garden Styles

Hedges and Screens

Lawn Alternatives

Low Maintenance Plants

Plants for Small Spaces

Plants for Shade

Colorful Foliage Plants

Bird and Wildlife Plants

Butterfly Plants

Container Plants

Plants for Dry Streambeds, Infiltration Basins, and Swales

Las Pilitas Nursery

California Native Plants are all we grow!

search for plants | Search

3232 Las Pilitas Rd
Santa Margarita, CA 93453

This website is dedicated to Bert Wilson. His genius continues to inspire us.

California Wildlife

If you like looking at birds and butterflies, hiking in the wilds, or even a neat and clean garden, you should love native plants and a California Garden. Gardening and landscaping should be FUN! Instead of a dirty motel or sleeping bag, vacation in your own yard knowing you are making a home for wildlife. Wildlife conservation begins at home and the birds, butterflies and other wildlife in the urban interfaces are at risk.

Bird gardening, help with design and identifying.

Bird plants, or native plants that attract birds.

Birds and Butterflies a Class

Browse plants for deer, horse, cattle, sheep and goats

Be a big game hunter in your own yard. Try to take a photo of your own butterflies visiting your nature

Plant Guides

We've developed guidance and lists to help you find a native plant for your specific needs. Below are printable PDF guides to help you select native plants for your site.

NEW TO NATIVES

- About California Native Plants
- Getting Started with Native Plants
- Easy Native Plants
- Your Native Garden's First Year
- Planting Guide
- Sowing California Native Wildflowers

GARDENING FOR (AND WITH) ANIMALS

- Gardening With Dogs
- Gardening with Tortoises
- Native Plants for Bees
- Native Plants For Birds
- Native Plants for Butterflies and Moths
- Native Plants for Hummingbirds

1

2

Books

Bringing Nature Home, Douglas Tallamy, Timber Press, Revised Edition 2009
Caterpillars in the Field and Garden, Thomas J. Allen, James P. Brock and Jeffrey Glassberg, Oxford University Press, 2005
Butterflies of North America, James P. Brock and Kenn Kauffman, Houghton Mifflin Harcourt, 2006
An Introduction to Southern California Butterflies, Fred Heath and Herbert Clark, Mountain Press 2004
Insects of the Los Angeles Basin, Charles L. Hogue, Natural History Museum of Los Angeles County, 1993

Websites

Butterflies and Moths of North America, butterfliesandmoths.org
Monarch Watch, monarchwatch.org
North American Butterfly Association, naba.org
The Xerces Society for Invertebrate Conservation, xerces.org

(over)

This plant:	**is food for:**	**and nectar for:**
Acmispon glaber, deerweed	many species	blues
Achillea millefolium and cvs., yarrow		many species
Adenostoma spp., chamise, redshanks	grey hairstreak	
Aesculus californica, CA buckeye	echo blue, spring azure	
Agave spp., agave	giant skipper	
Alnus rhombifolia, white alder	western tiger swallowtail	
Amorpha californica, false indigo	grey hairstreak, CA dogface	
Arctostaphylos spp. and cvs., manzanita	ceanothus silk moth	monarch
Arbutus menziesii, madrone	western brown elfin, Doudoroff's hairstreak, ceanothus silk moth	
Asclepias spp., milkweed	monarch, striated queen, Acmon blue	monarch, striated queen, West Coast lady
Asteraceae, daisy family, composites		many species
Astragalus spp., locoweed	many species	

Papilionidae: Swallowtails

Subfamily Papilioninae — Swallowtails

Link	Butterfly and host plant
	*Battus philenor philenor* - Pipevine Swallowtail Pipevine (*Aristolochia* spp.) inc. *watsonii*
	*Papilio machaon bairdii* - Baird's Swallowtail Wild tarragon (*Artemisia dracunculus*)
	*Papilio polyxenes coloro* - 'Desert' Black Swallowtail Usually Turpentine Broom (*Thamnosma montana*)
	*Papilio zelicaon* - Anise Swallowtail

ABOUT CALSCAPE | CONTACT CALSCAPE | PLANTING GUIDE | NURSERIES | MY PLANT LISTS | BUTTERFLIES | CALSCAPE SIGN IN

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

California

7988 plants native to California


All Plants
7988


Trees
216


Shrubs
1451


Perennials
3700


Annuals
2216


Grasses
646


Succulents
188


Vines
92


Ferns
113


Sun
2844


Shade
586

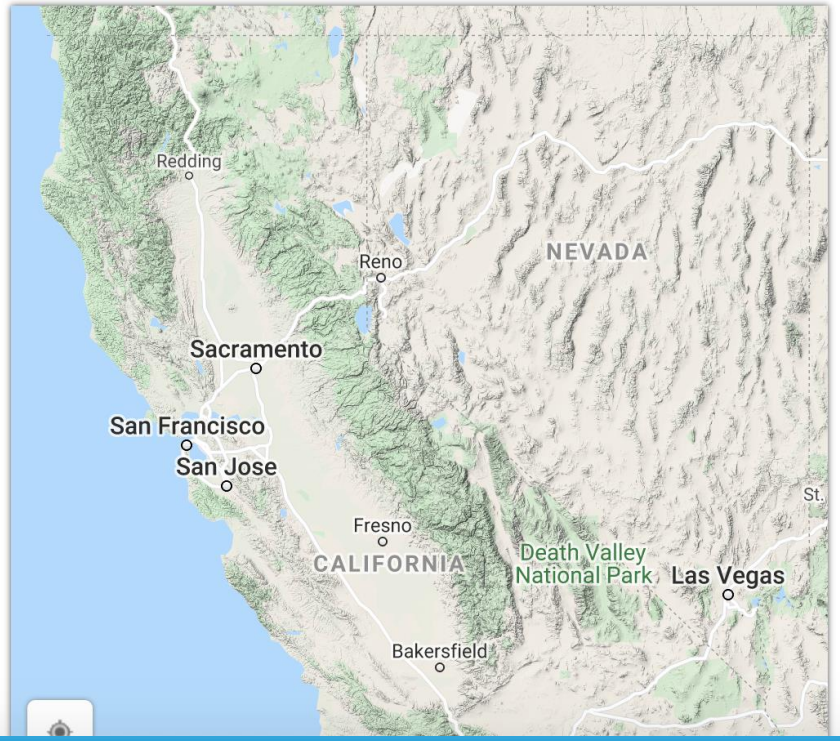

Part Shade
2278


Groundcovers


Butterfly Hosts


Hedges


Bank Stabilization




Icterina

Pollinator Success tips:

- Reduce the use of pesticides in your yard
- Include a diverse mix of plants that can include native and nonnatives
- Provide water (in a shallow dish or add pebbles to prevent drowning)
- Can create feeding stations, but limited use is better for overall health
- Keep plants healthy throughout the year
- Provide a selection of plants and trees that flower throughout the year
- If focusing on specific species attraction research those species
- Diversity diversity diversity!!!!! Did I say that already?!?!

Butterfly Resource List:

Insect order connect:

https://ucanr.edu/sites/insectconnect/Identification_information/Identify_to_Order/

Bug Guide:

https://bugguide.net/node/view/57

UC IPM Natural Enemies Gallery:

http://ipm.ucanr.edu/PMG/NE/index.html

UCANR butterflies and pollinators:

https://ucanr.edu/sites/PollenNation/Meet_The_Pollinators/Butterflies/

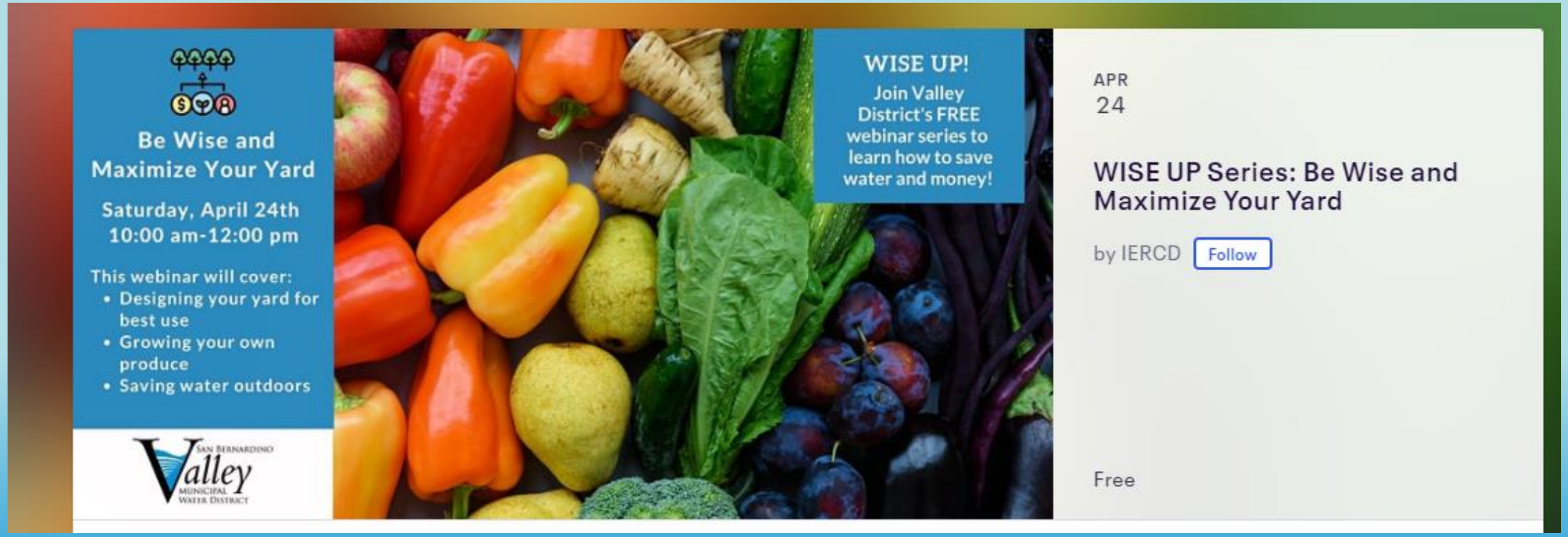
Theodore Payne Foundation:

http://theodorepayne.org/learn/guides/

Great guide to find plants and more!

http://socalbutterflies.com/resources.htm

Check out the next WISE up Workshop!



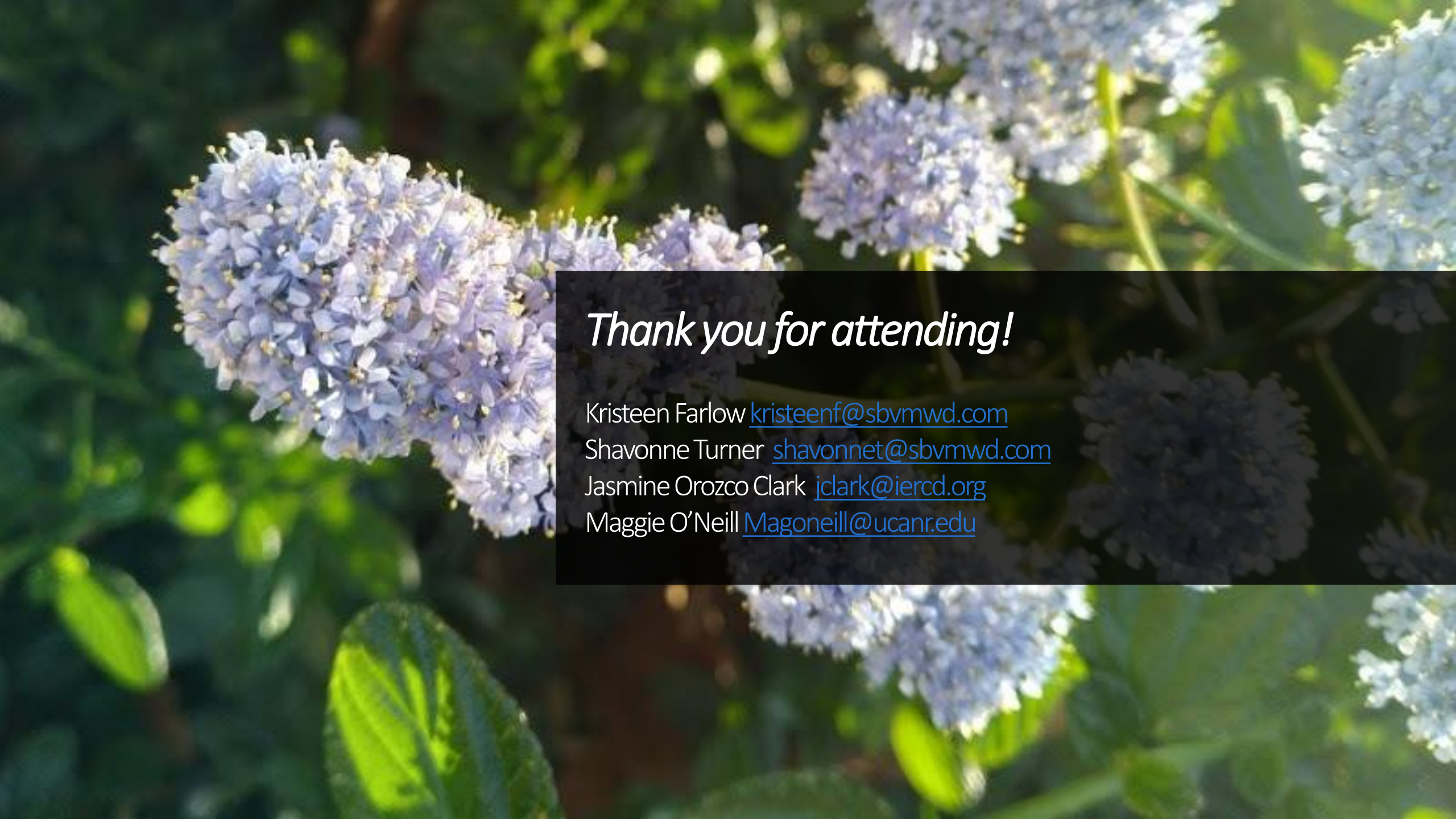
San Bernardino Valley Municipal Water District

Questions?

Use the chat feature to ask any questions

Master Gardener

Inland Empire Resource Conservation District



Thank you for attending!

Kristeen Farlow kristeenf@sbvmwd.com
Shavonne Turner shavonnet@sbvmwd.com
Jasmine Orozco Clark jclark@iercd.org
Maggie O'Neill Magoneill@ucanr.edu