

UCCE

El Dorado Master Gardeners



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Visit us at 311 Fair Lane, Placerville

UCCE Master Gardening Program Mission Statement

- “To extend research based knowledge and information on home horticulture, pest management, and sustainable landscape practices to the residents of California and be guided by our core values and strategic initiatives.”





Gardening for the Future

Deborah Nicolls

January 2024

Today's Topic

- Why should we garden for the future and who's future are we gardening for?
- How you can practice sustainable gardening.
- What is being done “out there” to help preserve our future?

What's going on that makes our future so problematic?

- Climate change, climate warming, or climate weirding – things are changing.
- Weather has become more extreme everywhere, i.e. last winter and atmospheric rivers.
- NOAA has announced that 2023 was the hottest year on record.
- Record droughts, record heatwaves, record amounts of rainfall and snow around the world.

The predictions for California's climate?

- Not necessarily less rain, but more extreme fluctuations such as more rain all at once, longer dry spells in winter, longer and more frequent droughts.
- Warmer winters - could affect the chill factor for fruit trees and control of pests.
- Warmer summer nights.
- More fires.

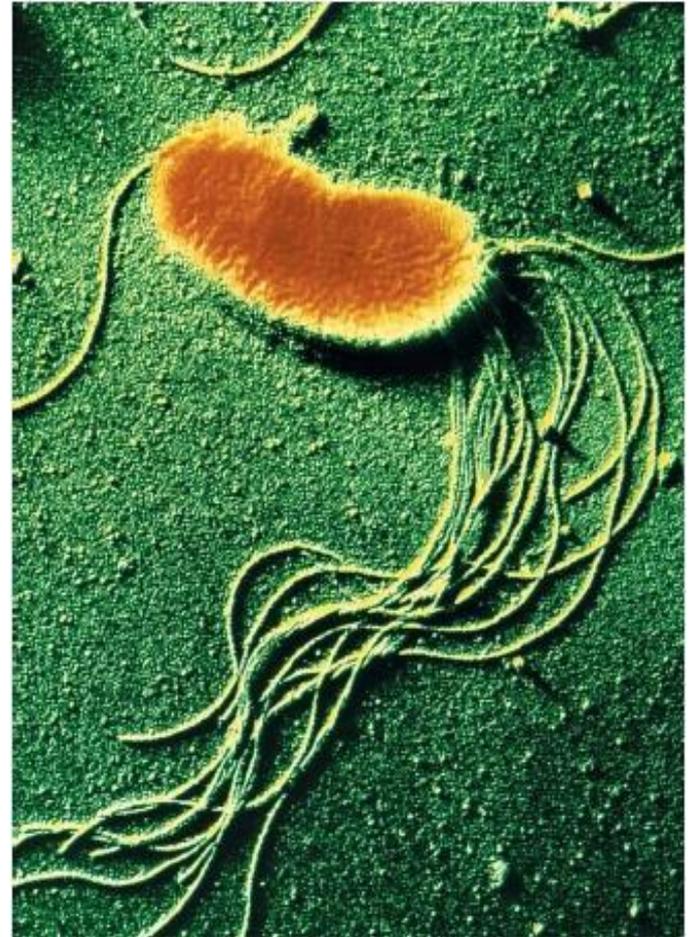
Other Environmental Concerns

- Preserving soil and soil biodiversity -
 - 75 billion tons of soil lost to erosion each year.
 - Pesticides and herbicides are wiping out soil life forms.
 - Soil is the most biologically diverse part of Earth.
 - Soil biodiversity represents the variety of life belowground whose interaction with plants and small animals forms a web of biological activity.
 - Plants cannot live without the life in the soil. We cannot live without plants.

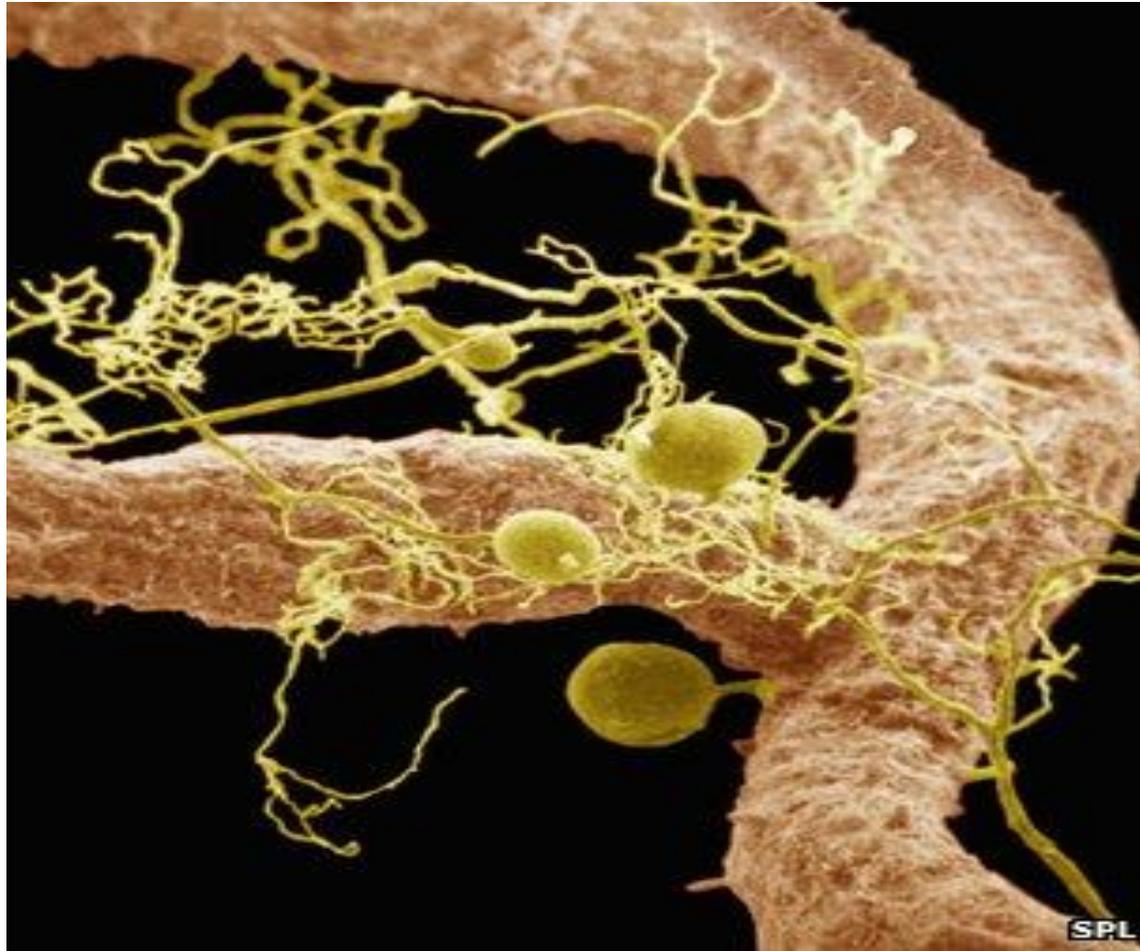
Soil Biodiversity

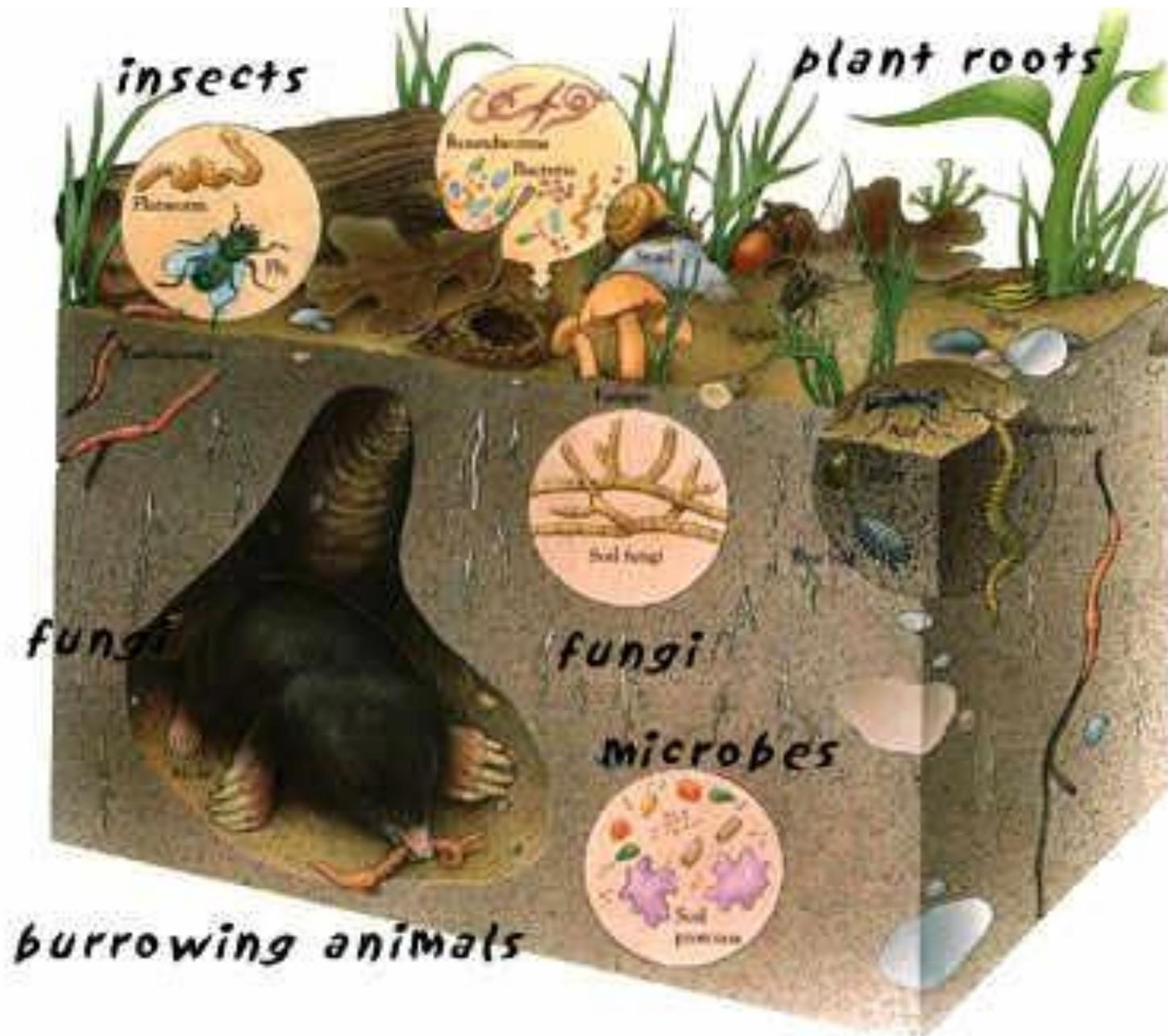
- Under 1 acre of soil - 7240+ pounds of life
 - Several pounds of mammals
 - 133 pounds of protozoa
 - 900 pounds of earthworms
 - 900 pounds of arthropods
 - 900 pounds of algae
 - 2000 pounds of bacteria
 - 2400 pounds of fungi

Source: *Teaming with Microbes*, Lowenfels and Lewis, from Elaine Ingham's research.
7240+ pounds



Mycorrhizae (on a soybean root)





Soil Biodiversity's Value

- Improves the entry and storage of water.
- Improves resistance to soil erosion.
- Improves plant nutrition.
- Controls soil pests and disease.
- Facilitates recycling of organic matter in the soil.
- Soil biodiversity is therefore the driver of healthy soil for sustainable crop production

- **Tend to your soil first!**

Insect Apocalypse

- Insect populations have dropped by 40% in the last 15 years in California.
- Insect diversity and populations have declined worldwide.
- Why does this matter?
 - Almost every living things depend on insects to survive, either by eating them directly, or eating what eats them, and through pollination of plants that everything eats.
- Caused by climate change, pollution and loss of habitat, pesticides and herbicides.

Bird Population Loss -

- More than 50% of bird species are in decline.
- More than 3 billion birds in the last 50 years.
- Birds eat insects, pollinate, and grow forests for us.
- Habitat loss, pollution, herbicides and pesticides, light pollution, windows, cats.
- Warming planet puts birds out of sync with their food sources.

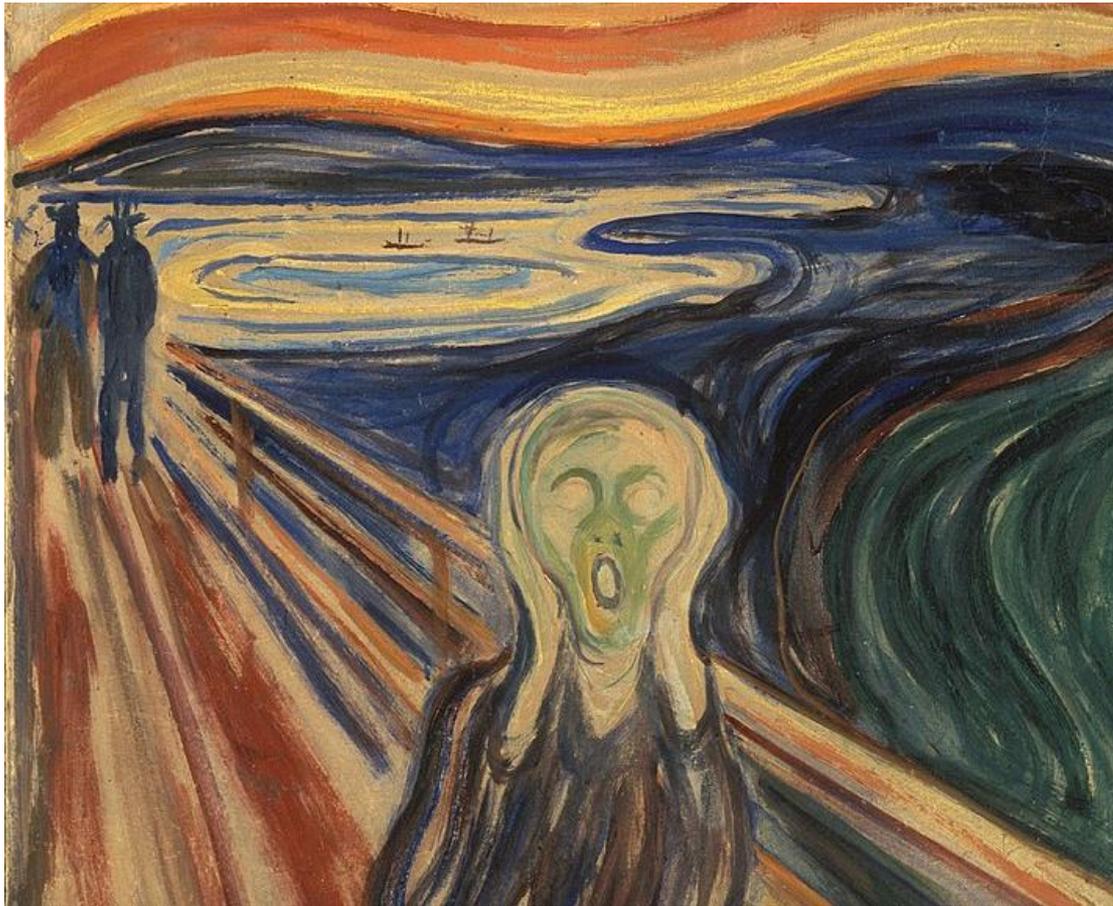
Why does any of this matter?

- Earth is a closed system.
- We are a part of it, we evolved with it and we need all of the other parts to thrive. And they need one another.
- There is no Earth 2.



What are we experiencing as a result?

- Psychologists have begun treating people who are experiencing some newly identified conditions:
 - Eco-anxiety – existential turmoil we feel when we witness the environmental deterioration of our habitats and homes.
 - Climate grief – when we notice or anticipate the loss of “species, ecosystems and meaningful landscapes due to acute or chronic environmental changes.”



So is there anything we can do?
Should we panic now or later?

We do not have to feel helpless.

We can start by gardening for the future, using sustainable gardening practices.

- Design and maintenance practices that
 - reduce demand for all types of resource inputs
 - makes use of renewable resources
 - protects environmental quality
 - And maybe restores a bit of our environment.

Sustainable Gardening Practices

Ideally -

- Uses resources at the rate and quantity they are generated.
- Uses local resources.
- Ensures that the ecological functions of a site are not adversely affected.

- Photo from [pexels-maria-orlava-4906521](#)



Sustainable Gardening is ...

- Resource efficient using reduced amounts of
 - water
 - fertilizer
 - pesticides
 - labor
 - energy
- Has minimal negative impacts on the environment.
- Plantings ideally can be maintained in perpetuity.

Other reasons to garden sustainably?

- Saves **your** money, time and energy.
- Should not generate garbage and fill up landfills - so reduce/reuse/recycle!
- Because planetary resources are limited.



Photo from pexels-tom-fiske-3186574

So how can you start gardening for the future?

- First steps
 - Change your attitude away from a desire for perfection.

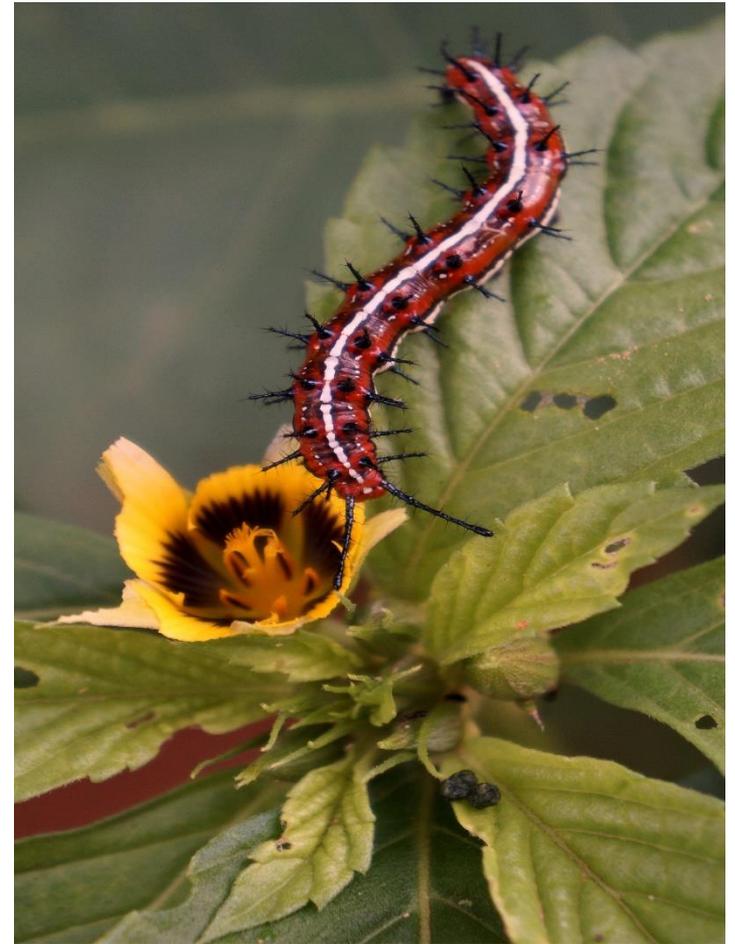
“Out of perfection, nothing can be made”
(J. Campbell)

Photo from pixels-pixabay-280222



To start gardening for the future -

- Keep in mind that you probably only use your garden 10-20% of the time, so why not make it hospitable to wildlife also?
- Learn to tolerate loss and damage. Holes in your plants' leaves indicate you have life in your garden.
- Relax and enjoy the garden you've created and the wildlife it attracts.



- Photo by pexels-gleive-marcio-Rodrigues-de-souza-11665370

Next step to gardening sustainably is -

- Plant the right plant, in the right place.
- Your plants will be healthier and require less energy, water, fertilizer, herbicides and pesticides to keep alive.
- To know the right place for a plant you need to know the place it will go.

Know Your Climate

Central California Climate is unique to the US -

- Mediterranean
 - long, hot, dry summers
 - Wet, cool winters

Plants that are not suited to this climate need life support (lots of energy and input) to thrive.



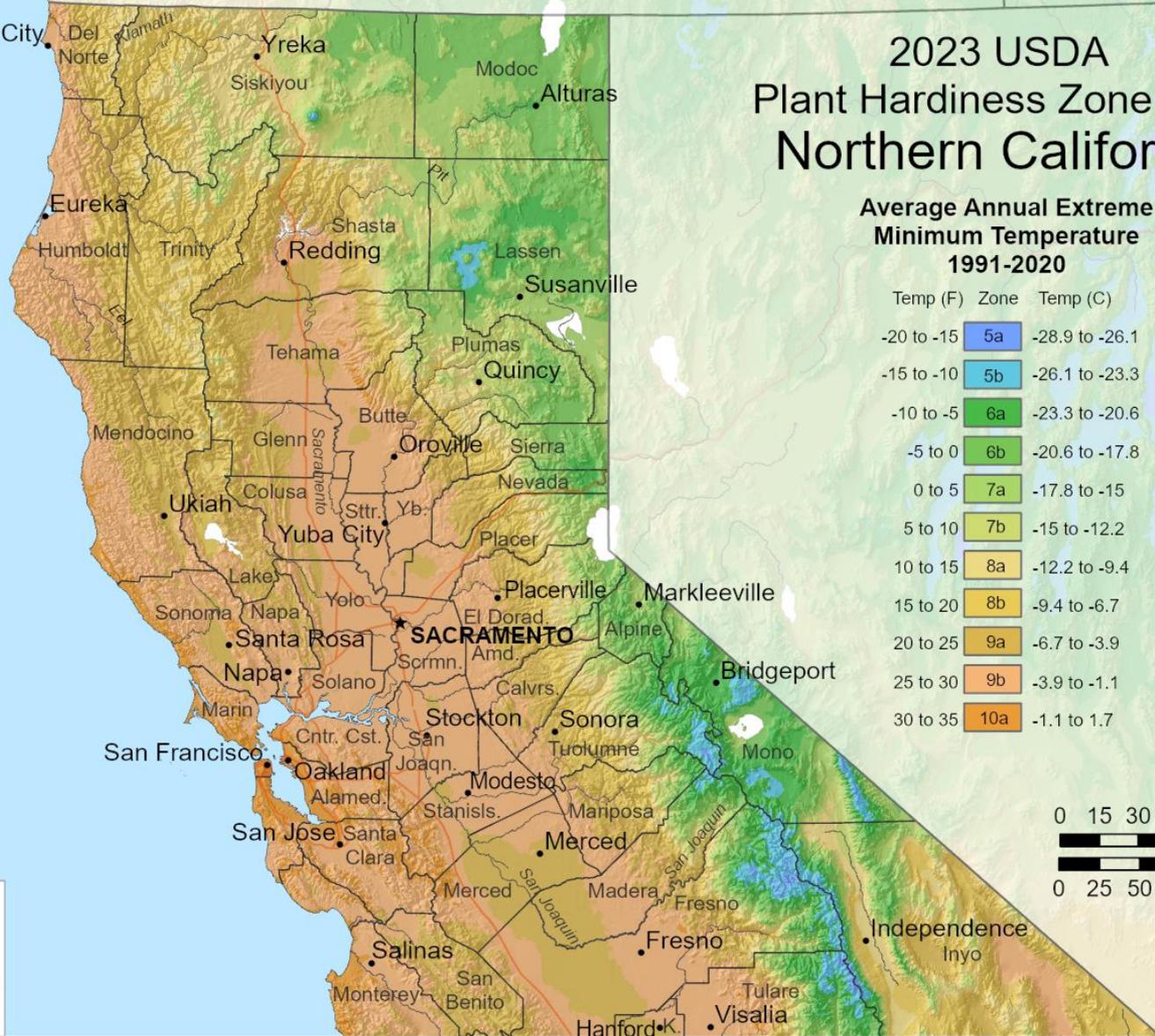
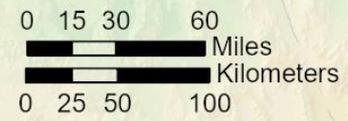
Know your climate zone -

- For purchasing plants
- USDA Cold Hardiness Zone – Based only on coldest average temperature over 30 years.
EDH, CP, Lower Placerville are 9b (25-30 deg);
Upper Placerville, Camino are 9a (20-25); Pollock Pines is 8b (15-20).
- Sunset Zone –
EDH and CP zone 9; Rescue and up is zone 7

2023 USDA Plant Hardiness Zone Map Northern California

**Average Annual Extreme
Minimum Temperature
1991-2020**

Temp (F)	Zone	Temp (C)
-20 to -15	5a	-28.9 to -26.1
-15 to -10	5b	-26.1 to -23.3
-10 to -5	6a	-23.3 to -20.6
-5 to 0	6b	-20.6 to -17.8
0 to 5	7a	-17.8 to -15
5 to 10	7b	-15 to -12.2
10 to 15	8a	-12.2 to -9.4
15 to 20	8b	-9.4 to -6.7
20 to 25	9a	-6.7 to -3.9
25 to 30	9b	-3.9 to -1.1
30 to 35	10a	-1.1 to 1.7



Know your microclimates -

A small, specific place within an area as contrasted with the climate of the entire area.

- Sunny or shady for how much of the day?
- Sloped, flat, windy, exposed?
- Are you in a cold air drainage area or on a hill?
- How much hard surface is there, and how exposed to the sun?

Microclimates can be used to grow plants slightly outside of their zone

- The southside of a house, where citrus and succulents can be overwintered, with care.



Know your soil

3 Main Types

- Clay – dense and drains slowly. Nutritious. Easy to overwater in clay soil.
- Sandy – loose and drains quickly. Fewer nutrients and must be watered in pulses.
- Loam – between clay and sand. Ideal.

When the right plant is in the right place -

- Suitable to our environment and the conditions it will be living in (microclimate).
- Natives and Mediterraneans do best here.
- Avoid exotic plants, non-native annuals, or anything that needs heavy inputs of water and fertilizer.
- Avoid invasive plants.
 - Cal-ipc.org



Right plant, right place – cont.

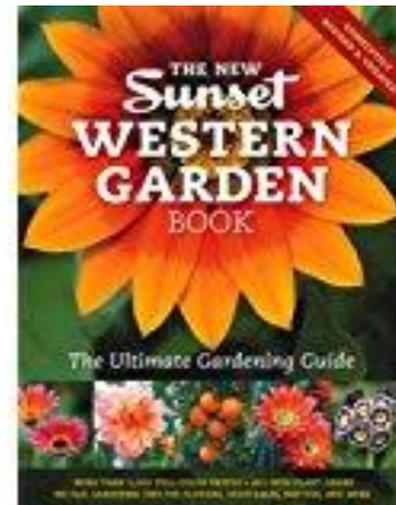
- Know mature plant size – from the label.
- Avoid planting in the summer.
 - Stresses plants
 - Needs greater input of water to establish
- Plant in fall if possible.
 - ground is still warm so roots grow
 - rain is expected

Do Your Research

- Sunset Western Garden Book
 - Most nurseries have a copy

Online -

- Water Use Classification of Landscape Species
 - <http://ucanr.edu/sites/WUCOLS/>
- For natives –
 - <http://calscape.org/> or
 - <https://cnps.org>



At the nursery

Read the plant label

- It should include information on cold hardiness and whether it needs sun or shade, how often to water, and how large the plant will get.



For more information scan the code with our free app **OR** visit [lowes.com/plants](https://www.lowes.com/plants) and enter the plant code: **L9636**

CARE & MAINTENANCE

WATER Low, once established		AGUA Poca, ya establecidos
AVERAGE SIZE 20" H x 18" W		TAMAÑO PROMEDIO 51cm Al x 46cm An
SPACING 15-18"		ESPACIAMIENTO 38-45cm
GROWTH RATE Medium		CRECIMIENTO Medio
COLD HARDINESS -30 to -40°F Non-hardy in zones 1-2	ZONE 3	TOLERANCIA AL FRÍO -35 a -40°C No resisten en las zonas 1-2
PRUNING Little pruning required		PODA Poca poda requerida
FERTILIZATION Monthly		FERTILIZACION Mensualmente

Performs better with regular water during hot summer months.

Water well until established

maturity late fall to winter

madurez finales de otoño y invierno

care remove shoots below the graft

cultivo remueva los brotes que salgan por debajo de la zona del injerto

size 8-10' t x 8-10' w

tamaño 2.5-3 m al x 2.5-3 m an

space 8-10'

espaciado 2.5-3 m

habit rounded

hábito redondo

water weekly during dry spells; more often until roots established

riego cada semana durante los periodos de sequía; con más frecuencia hasta que se establezcan las raíces

hardiness 30°F

resistencia -1°C

- Dig hole twice as wide and as deep as the pot.
- Remove root ball and place in hole so that the top is even with the ground surface.
- Refill with half soil amendment and half native soil; water thoroughly. Fertilize upon planting.

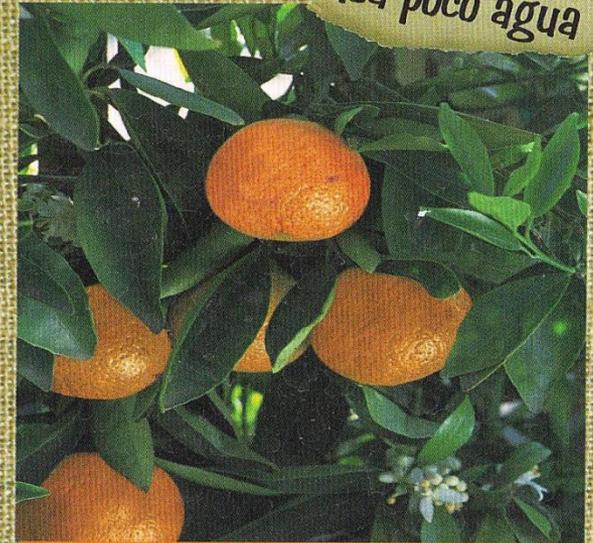
Pollination Requirements:

- Self-pollinating; this plant will bear fruit without another variety nearby.

sun / sol

FRUIT
TREE

low water use
usa poco agua



DWARF MANDARIN
'CLEMENTINE'
Citrus reticulata

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GET TIPS ONLINE USE PLANT CODE THDD9589

Try to buy neonicotinoid free plants

- Because neonics are systemic pesticides, all parts of the plant, including the nectar and pollen, become toxic to bees and other insects.
- These pesticides linger in the soil and the plant itself, affecting pollinators even many weeks or months after their application. Residues have been found in woody plants up to 6 years after application!
- Neonicotinoids have been found in waterways and wetlands downstream from where they were applied.

If you plant the right plant in the right place -

- It will require less time, energy and resources than something that does not belong there.
- You will avoid spending money on a plant that will either die or cost more money for water, fertilizer or pesticide to keep alive.
- The wrong plant could even spread disease or pests among your other plants as it struggles to survive.

Always consider native and Mediterranean plants first!

- Need little in the way of soil amendments or fertilizers.
- Need less supplemental water once established.
- Need little pruning, except for shape.
- Natives encourage beneficial native insects and spiders and critters such as bird, frogs, lizards.
- Mainly natives in your garden will help create a wildlife corridor and provide a habitat for wildlife. This will be your part of a Homegrown National Park.

Why Choose Native Plants for Your Landscape?

(Because plants are much more than just decorations.)



BIODIVERSITY



CARBON SEQUESTRATION



DECORATIVE VALUE



ABSORB STORM RUN-OFF



SAVE WATER



EROSION CONTROL



INSPIRE OTHERS



CLIMATE RESILIENCE
DROUGHT, FLOOD,
WIND, EXTREME HEAT



LOWER STRESS



**CULTURAL USES,
FOOD, MEDICINE**



FIRE SAFETY

SacValleyCNPS.org/HH

Practice Integrated Pest Management - IPM

A strategy that centers on long-term suppression or prevention of pest problems through a combination of techniques including

- cultural practices
- habitat suppression
- use of resistant varieties
- use of biological controls
- use of pesticides ONLY when careful monitoring indicates they are needed

Recognize Beneficial Insects



- Only about 5% of described insects are harmful to us.



Mulch

- 3-4” – on top of soil
- Keep away from trunks of plants
- Bark, wood chips, pine needles, straw, leaves
- Benefits
 - Preserves moisture
 - Attracts beneficial organisms
 - Improves the soil in the long run
 - Helps suppress weeds
- But be fire safe!

Compost

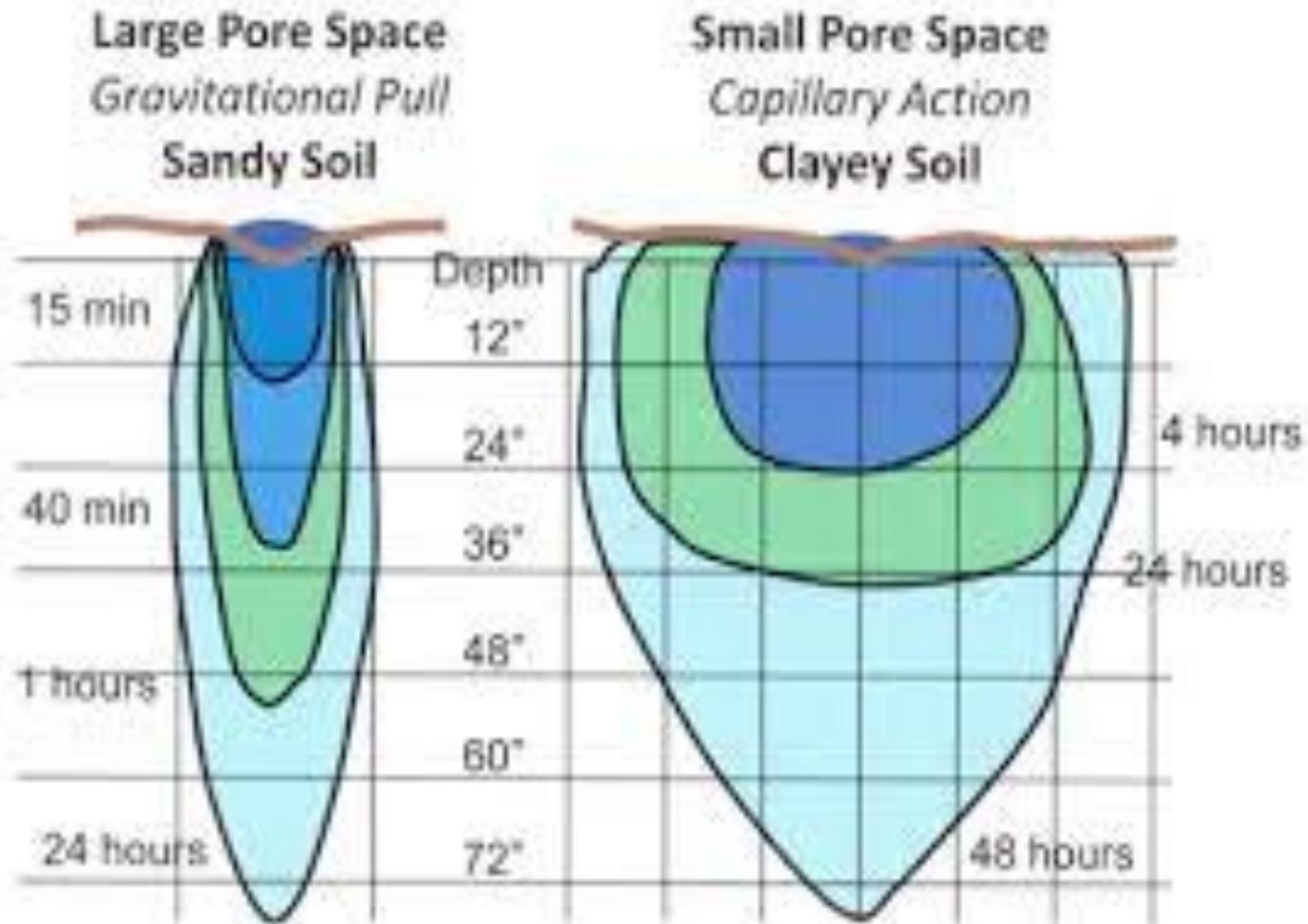
- Benefits

- utilizes waste products
- improves soil structure by adding organic content, increasing the water-holding capacity of your soil and reducing your need to water
- helps keep heavy clay soil from compacting, making it easier to work; root systems develop better
- gives sandy soil better structure
- promotes soil fertility and improves soil biodiversity
- stimulates healthy root development
- aids erosion control

Water properly

- Trees and shrubs – deep, infrequent watering, once a month. Save your trees before anything else during a drought.
- Perennials – deeply, once or twice a week.
- Lawns – once or twice a week.
- Deeply rooted vegetables – no more than twice a week.
- Annuals – too much.

Watering for Various Soils

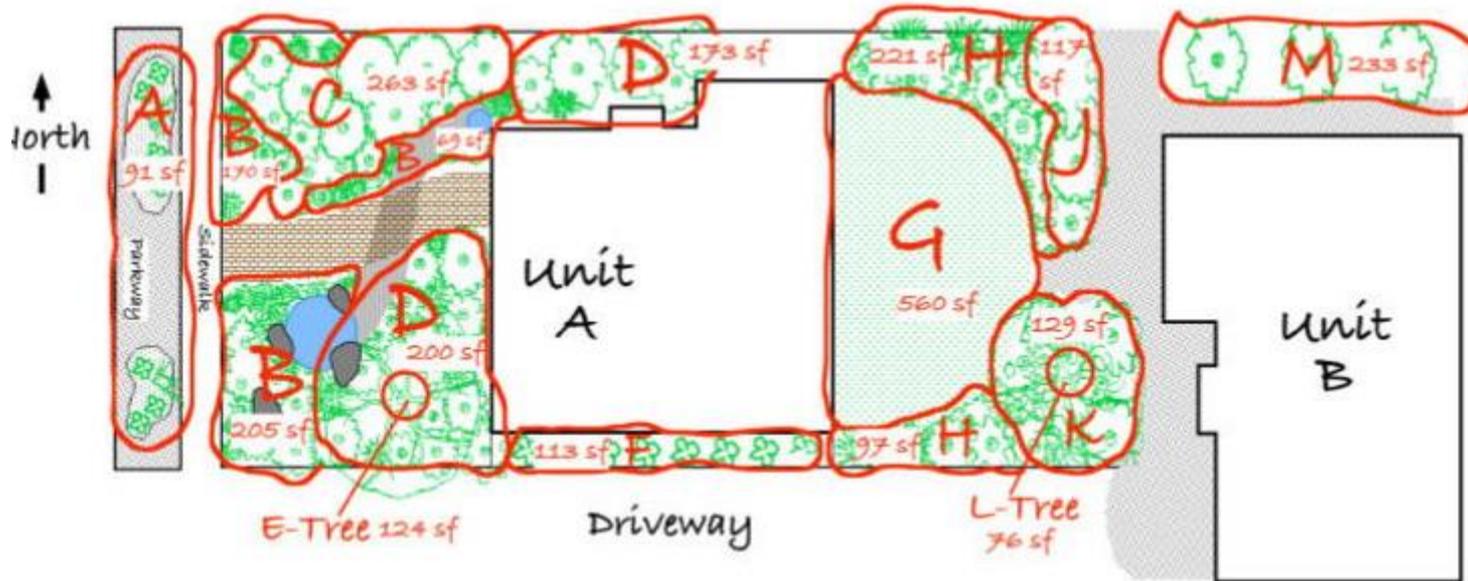


Hydrozones

- Water using hydrozones
 - Group plants with same water needs in same area and/or on same water lines.
- Water for soil structure.
- Drip irrigation is wonderful – if used properly.
- Water deeply and less frequently.

Hydrozones

SAMPLE HYDROZONE PLAN

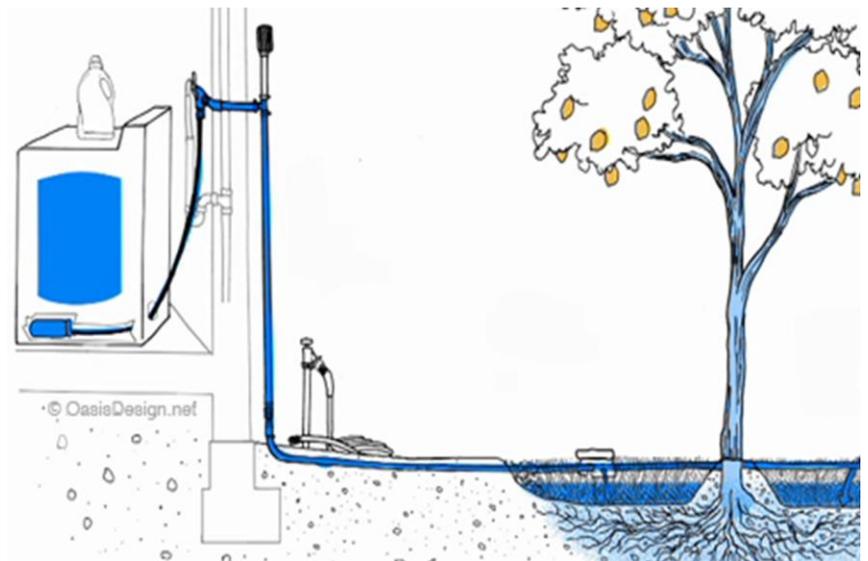


Water utilization -

- Reuse clean water
 - From shower
 - From washing vegetables in the kitchen or rinsing dishes
- Capture water
 - keep the water that comes on to your property and do not allow it to go into the sewer system and storm drains.
 - Capture water from your roof, using rain barrels

Using gray water

- Legal without a permit in El Dorado County if it is from your washing machine. Must not have any toilet contaminants.
- Must be directed to an area under mulch.
- Not for use in vegetable gardening, so best for landscape trees and shrubs.

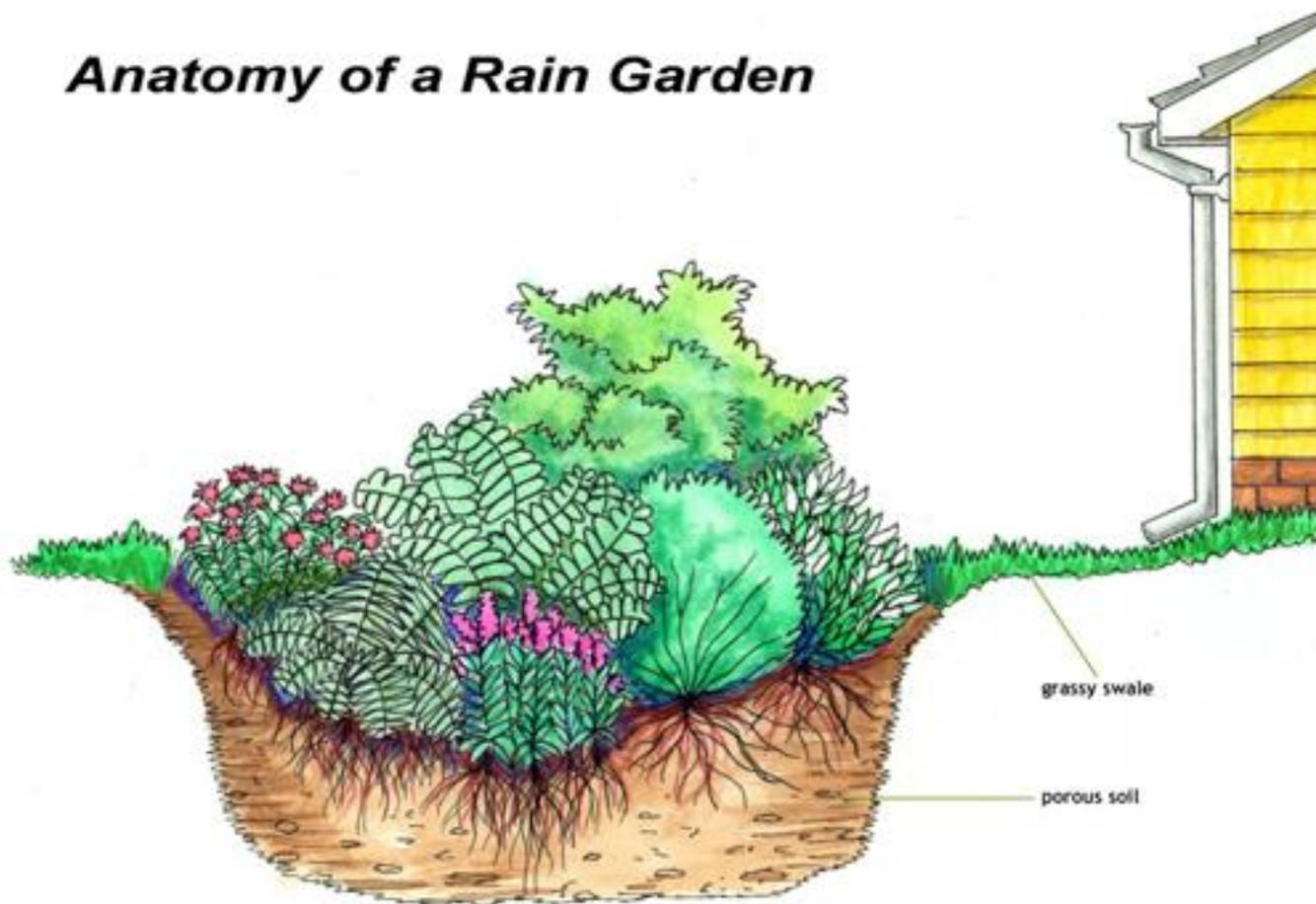


Capture all water flowing off your property.
Direct and control water flow, using a system of berms and swales, dry streams and rain gardens.



Plant a Rain Garden

Anatomy of a Rain Garden



Benefits of a Rain Garden

- Replenishes groundwater over time.
- Reduces property flooding risk.
- Creates habitat for butterflies, song birds, and other wildlife.
- Naturally filters water and removes pollutants like phosphorus, nitrogen, and hydrocarbons. This prevents contaminated water from entering storm drains and local bodies of water.
- Reduces money spent on irrigating plants.

Use rain barrels –
though there are draw
backs.

Put in large water
containers such as
underground cisterns.



The following water practices are prohibited state-wide, and applicable to all Californians:

- Potable water may not be used to wash down sidewalks and driveways.
- Runoff caused by irrigation is prohibited.
- Vehicles must be washed using a hose with a shutoff nozzle.
- Decorative water features must use recirculated water.
- Outdoor irrigation is prohibited during and within 48 hours following measurable rainfall.

State Water Laws

New homes – can only utilize drip or micro spray irrigation.

New homes – lawns can only be 25% of landscape. If yard is over 500 sq ft.

SB992 – Prohibits HOAs from fining members for reducing watering of lawns and landscaping during drought emergency, *UNLESS* HOA has access to recycled water.

County Requirements for New Homes

- MWELOS – Model Water Landscape Efficient Ordinance
 - Uses WUCOLS to determine what kind of plants you can use – Water Use Classification of Landscape Species.
 - Also talks about use of mulch, compost, turf (only 25% allowed), and types of sprinkler systems allowed.

Going further - Ditch the Lawn

Why?

- Uses more water than any other crop in U.S. and the crop is usually thrown away.
- Requires fertilizers and herbicides to look good.
- Require frequent mowing, which pollutes. (Gas mowers are 25% more polluting than cars.)
- Time and energy are required to maintain the looks of the lawn.
- Costs money to maintain.

Water usage recommended by UC – 1.5” per week.

Lawns

If you must keep your lawn –

- Water less frequently and more deeply.
- Leave grass clippings as mulch.
- Mow less frequently. Shorter grass burns more easily. Taller grass keeps weeds at bay.
- Fertilize less frequently, so grass grows slower.
- Don't water in the winter!
- Shrink your lawn. (And plant a small native plant bed.)

Use Lawn Substitutes

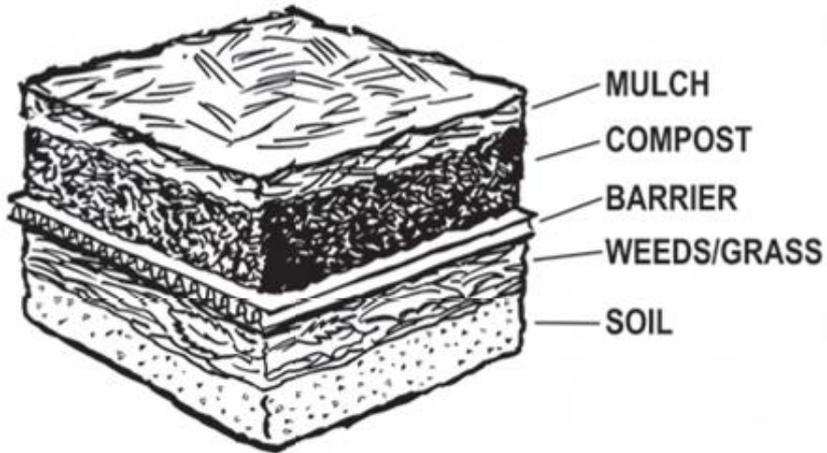
- Native grasses, drought tolerant grasses, low-growing herbs or shrubs
- Use native plants and Mediterraneans
- Use gravel or water-permeable pavers as paths or small seating areas







Get rid of lawn by sheet mulching



- Attracts beneficial organisms
- Keeps soil moist
- Suppresses weeds
- Enriches soil
- Best done in fall or winter

- Can also solarize your lawn

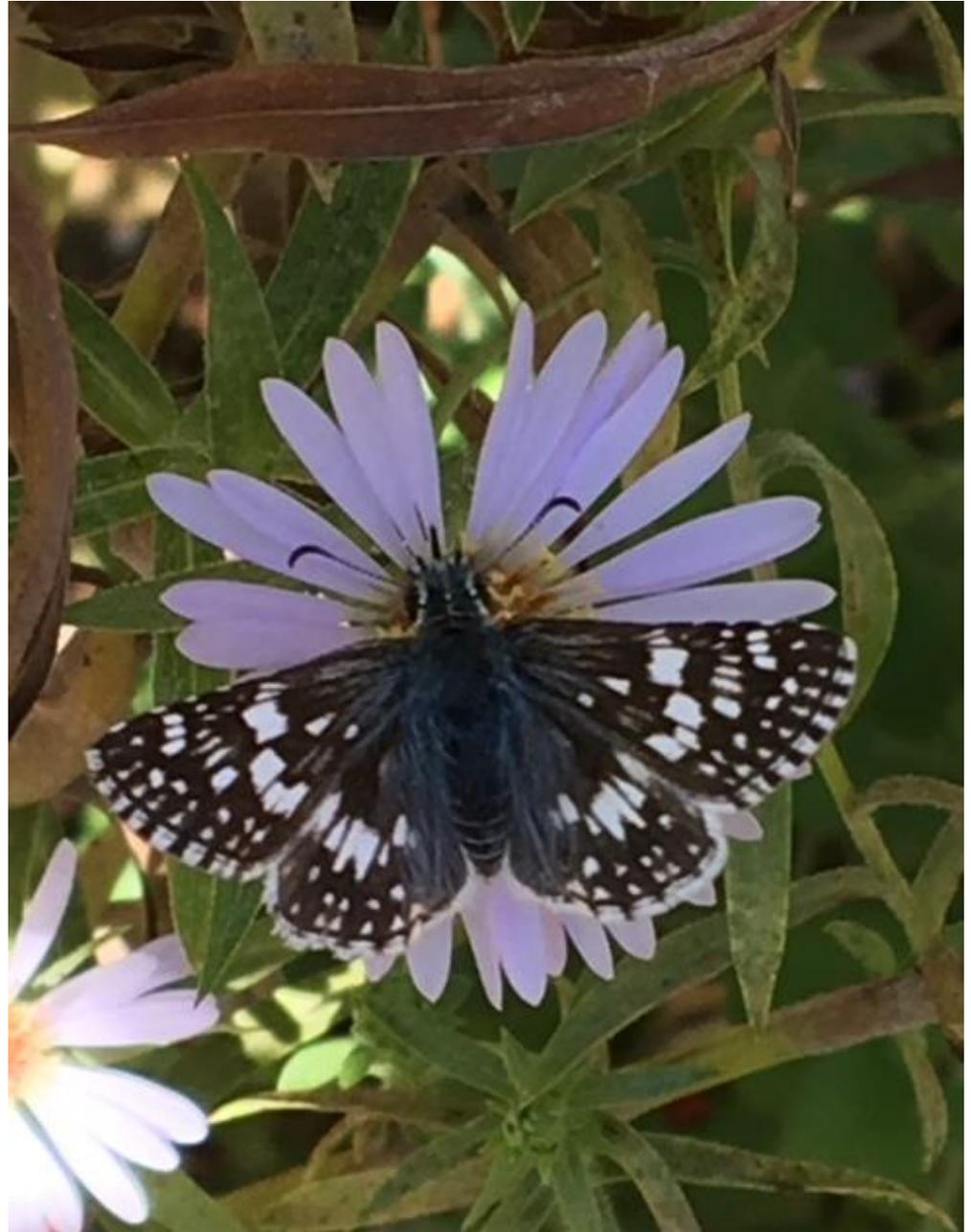
Practice Ecological Horticulture

- The science and art of growing plants that enhance the surrounding environment for the benefit of all other life.

Carex (sedge) as it overwinters in Brooklyn Bridge Park.



By any other name -
Habitat Gardening or
Humane Gardening –
Understanding
that other life forms
have a right to exist and
that without them, our
lives would be
impoverished and
possibly even
threatened.



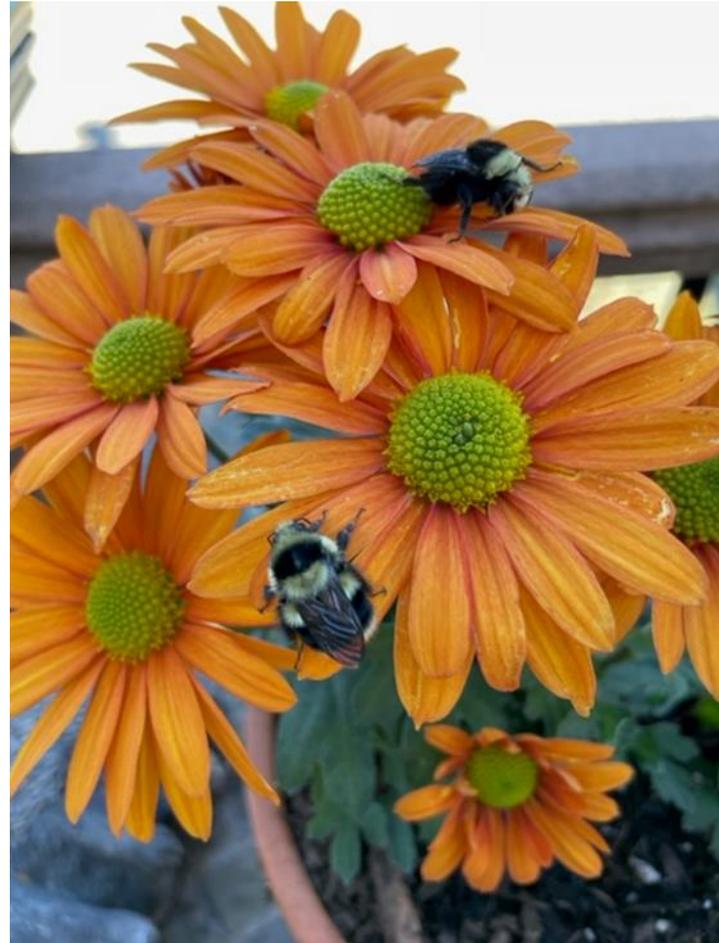
Manage your garden to enhance wildlife by doing the following -

Leave the leaves.

Leave the seed heads and plant stems.



- Leave some bare earth for ground dwelling bees.
- Do your winter cleanup in March.
- Leave places for animals to nest and rest and seek safety.
- Provide water.



Growing Vegetables Sustainably

What is the problem with growing fruit and veggies that we should consider growing them sustainably?

- Many vegetables are annuals. Need replanting every year.
- You may need ground prep, fresh soil, fertilizer every year.
- They need lots of water to thrive.
- You may find yourself using pesticides.
- Are there alternatives to this?

YES

Sustainable Vegetables

- Plant disease resistant varieties.
- Rotate crops to avoid disease.
- Practice no-till which
 - encourages weed seeds to germinate
 - destroys soil structure.
- Water properly.

Sustainable Vegetables

- Plant only as much as your family will eat fresh, unless you are preserving or donating.
- Browse catalogs for veggie seeds that say they are drought tolerant.
- Plant in raised beds – more controllable situation.
- Companion plant – for beneficial insects.
- Grow heirloom veggies – but be prepared to deal with problems sustainably.

Sustainable Vegetables

- Use compost – helps retain moisture and invites beneficial organisms to come and work for you.
- Mulch – retains moisture and keeps soil cool.
- Use drip irrigation – check the results! Deep watering on many crops is vital.
- Know the various water needs of your crops. Different veggies need water at different times.
- Try planting in straw bales. Use the decomposed straw for compost or mulch.

Sustainable Vegetables

- Plant cover crops that fix nitrogen, such as alfalfa, beans, mustard. Cut before they seed. Let decay on top of soil.
- Use local seed banks – plants that were grown and harvested locally.
- Use row covers – collects dew, protects plants from birds.
- Use shade cloth – prevent overheating.
- Use shade and windbreaks to prevent drying out of sensitive plants.

Sustainable Vegetables

- Plant perennial vegetables or fruit.
 - The benefits:
 - You don't have to buy new seedlings, or seeds every year.
 - You don't have to disturb the soil every year. They are their own cover crop.

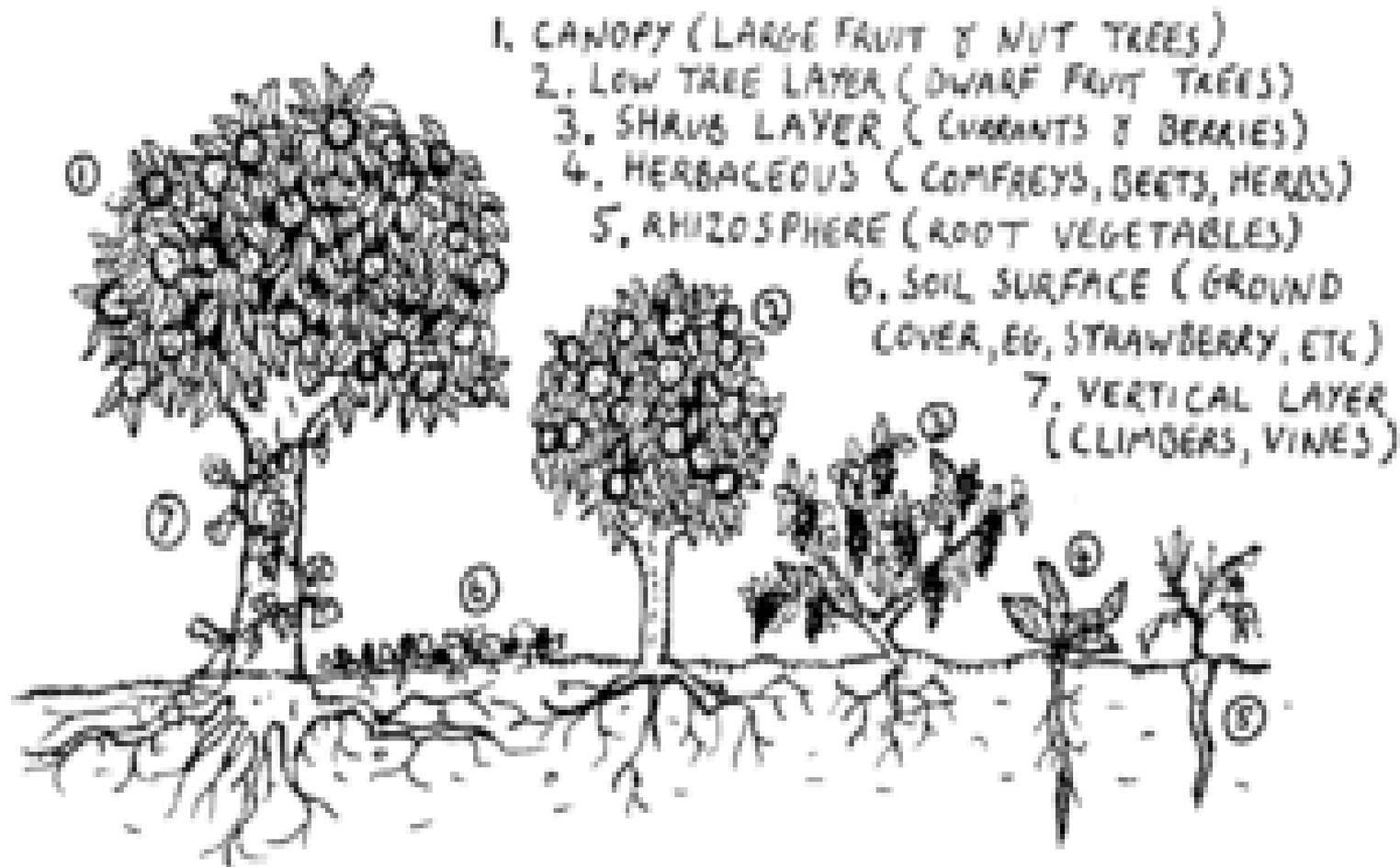
Create a Food Forest (or Forest Garden)

- “Edible forest gardening is the art and science of putting plants together in woodlandlike patterns that forge mutually beneficial relationships, creating a garden ecosystem that is more than the sum of its parts.”

[ng](http://www.edibleforestgardens.com/about_gardeni) - Dave Jacke with Eric Toensmeier

Food Forests or Forest Gardens

- Mimic natural ecosystems.
- Diversity creates a healthier ecosystem.
- Much like edible landscape gardening.
- Addresses 7 levels that support one another.
- Pay attention to microclimates when trying this.

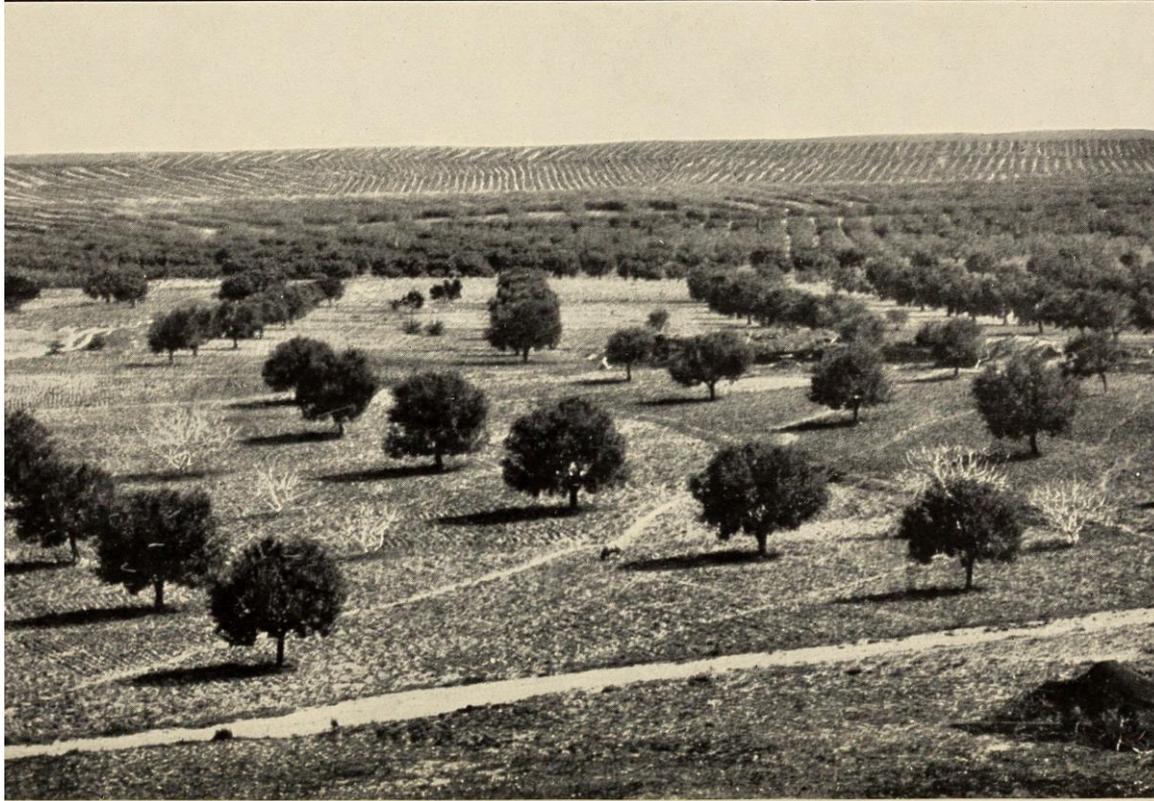


THE FOREST GARDEN: A SEVEN LEVEL BENEFICIAL GUILD

Try Dry Farming

A technique that depends on sufficient soil moisture and deep-rooted plants that scavenge to access water without adding much supplemental irrigation. Once common in the foothills.

- Grapes, fruit and nut trees, tomatoes.
- Trees and vines need to be spaced properly to allow access to water. Grapes need 50 sq ft ea.
- Everything needs to be watered initially!

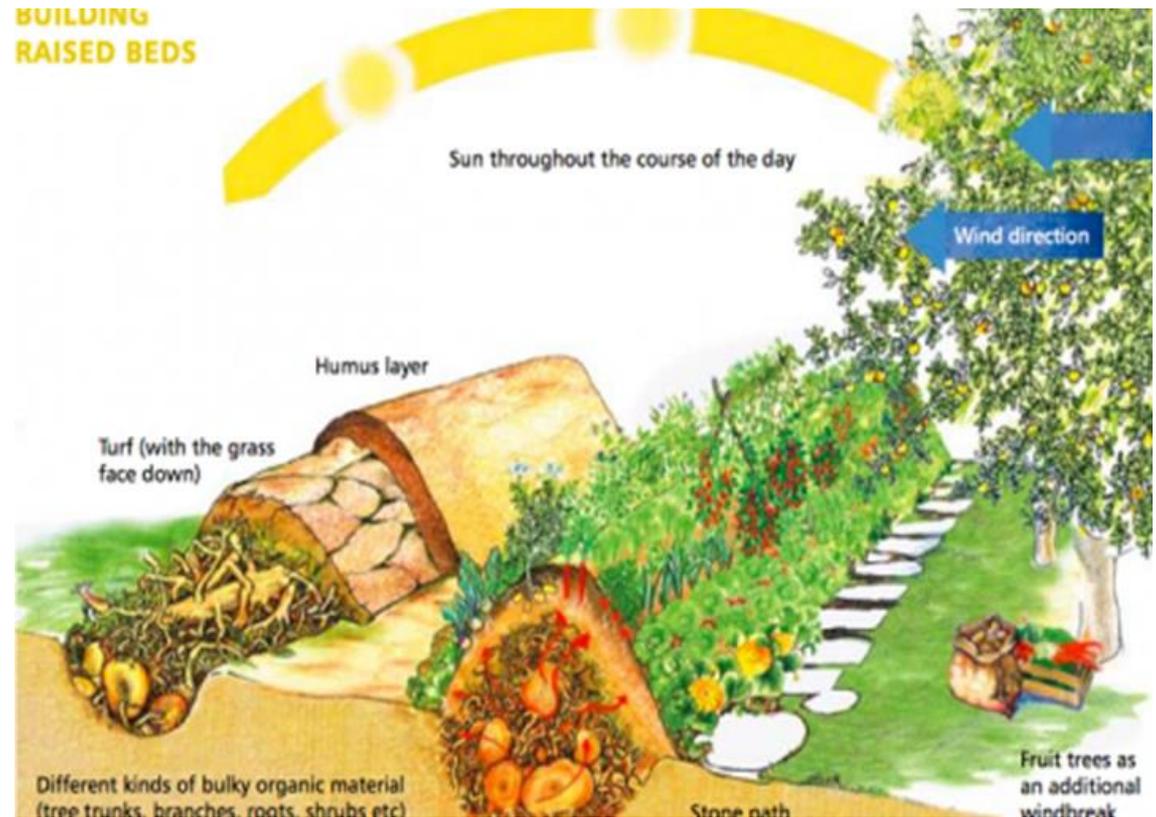


GENERAL VIEW OF THE OLDER DRY-LAND OLIVE ORCHARDS NEAR SFAX.

Dry Farming Olives in North Africa

Other Practices - continued

- Hugelkulture or
- Log Swales
- These practices make use of debris you might have on hand and puts extra nutrients into the soil.
- Captures water and creates a micro-environment.



Other Sustainable Practices

- Harvest (forage) from nature instead of growing a garden.
 - Read a book or two first! Take classes if you can find them.

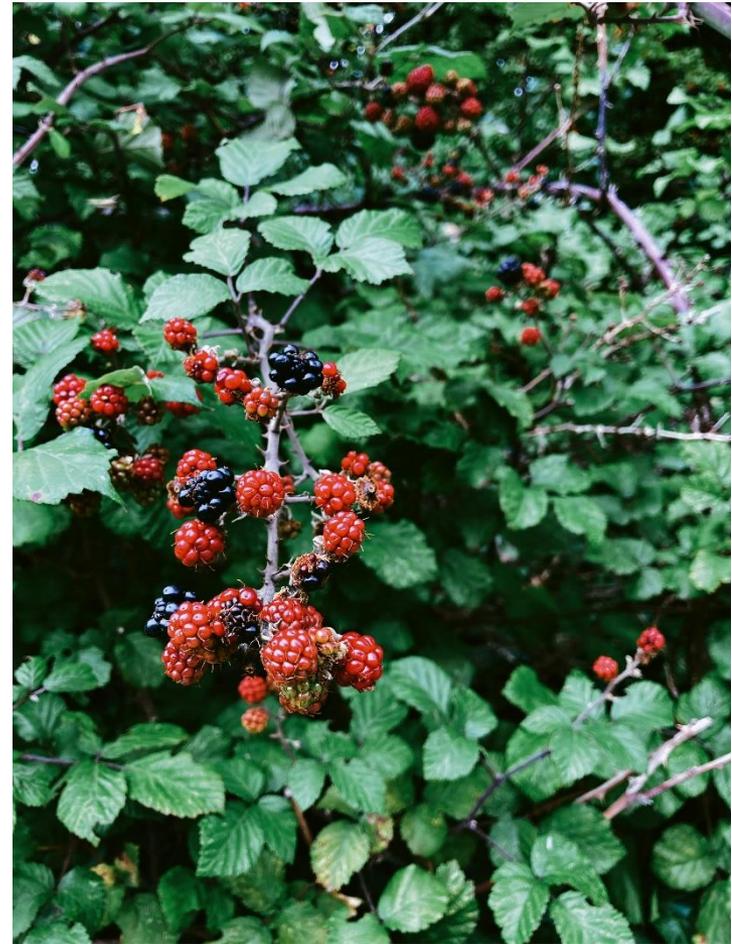


Photo from pexels-lisa-fotios-5201137

Plant a Native Hedgerow

- A narrow strip of mixed native plants of various sizes.
- Provides nesting, forage and shelter for mammals, birds, reptiles, amphibians and native insects.
- Attracts pollinators and predatory insects to your yard.
- Can be part of a wildlife corridor.



Native Hedgerow containing
California Fuschia and Deergrass.

Other things a hedgerow can do -

- Act as a sound barrier
- Act as a privacy screen
- Keep drying winds at bay
- Help preserve moisture by capturing water in roots
- Stabilize soil

Just remember to do your homework (right plant, right place), and water new plants until established.
And be fire safe.

More sustainable gardening hacks

- Keep small livestock – a form of regenerative farming.
 - Fertilizer
 - eggs, milk, meat, wool
 - weed control, mowing, pest control
- Keep worm bins
- **And always obey the local ordinances**

Reduce, Reuse, Recycle

- Compost anything compostable.
- Cut back on purchases of bagged, boxed and bottled products by buying in bulk.
- Build things out of leftover lumber.
- Use pruned tree branches and whips to make trellises.
- Use grape vine prunings to make wreaths.
- Use large limbs or logs to define beds or walk ways or build log swales.

Make Use of What You Have

- Do you already have natives on your property?
- Keep them-
 - Prune them for fire safety
- Benefits -
 - No watering since they are already established.
 - A natural ecosystem is already in place.
 - No fertilizing, mulching, disturbing the soil.

Converting to a Sustainable Landscape

1. Don't just do something, stand there.
2. Assess your plants –
 - Are they thirsty or unhealthy? How much are you watering them. How much pesticides are you using to keep them looking good?
3. Assess your irrigation –
 - Know where all of your lines are and what station runs them.
 - Repair what is broken or cap unused lines.
4. Make a plan –
 - Use WUCOLs or Calscape.org If you know what you want, make your list and look up the plants.
5. Remove unwanted hardscape and plants.

Converting

5. Assess your soil and amend soil with compost, if needed.
7. Install/convert irrigation to most efficient method.
8. Plant to take advantage of microclimates and hydrozones.
9. Cover bare soil (except for a patch for bees) with organic mulch.
10. Start small – especially when dealing with an HOA.
 - Remove a corner of lawn or put a bed in the middle of it, or start in your backyard.
11. Convert your neighbors.

Enjoy your garden



Gardening for the Future on a Broader Scale- Various Movements and Practices



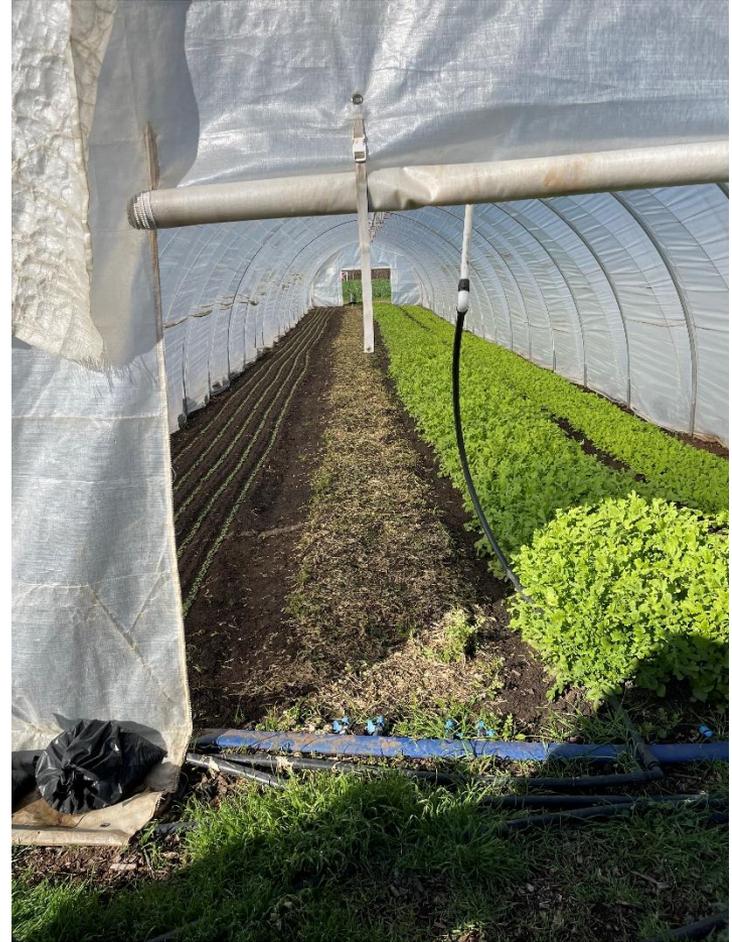
Permaculture

- Permanent agriculture is that which can be sustained indefinitely. The conscious design and maintenance of agriculturally productive ecosystems which have the diversity, stability, and resilience of natural ecosystems.
- Phrase first used in the 70s in Australia.
- Working with nature, not against.
- Starts with protracted and thoughtful observation.
- Looking at plants and animals in all their functions and how they might work together.

Regenerative Farming

- The principles behind the dynamic system of regenerative agriculture are meant to restore soil and ecosystem health, address inequity, and leave land, waters, and climate in better shape for future generations. Generally includes livestock, such as chickens to eat pests, goats or sheep to eat invasive weeds and annuals.
- Uses no-till methods and green manures or cover crops.

American River Ranch, part of Soil Born Farms, Rancho Cordova



Rewilding

- Rewilding is a comprehensive, often large-scale, conservation effort focused on restoring sustainable biodiversity and ecosystem health by protecting core wild/wilderness areas, providing connectivity between such areas, and protecting or reintroducing apex predators and highly interactive species (keystone species).



Rewilding

- Occurring around the world –
 - Knepp Estates, England – destroyed by farming
 - Gorongosa, Mozambique – destroyed by civil war
 - Charles F. Russell National Wildlife Refuge, MT
 - Affric, Scotland
 - Patagonia National Park, Chile

Homegrown National Park

- A bottom-up call-to-action to restore habitat where we live and work, extending national parks to our yards and communities.
- Started by the entomologist Dr. Douglas Tallamy. The goal is to regenerate biodiversity from every locale possible, even patios and decks.
- Focus is on Keystone Species.
- Habitat gardening.

Homegrown National Park – cont.

The idea is that only about 5% of our country has not been changed by humans, for humans. Much of the loss of biodiversity is caused by habitat loss. By connecting many parks, backyards, even patios through the planting of native keystone species, and making the planted habitat friendlier, native animal species can start to recover because they have corridors for purposes of migration, mating, foraging, and seeking safe haven.

Homegrown National Park – cont.

Getting started on your part of the Homegrown National Park –

1. Shrink the lawn.
2. Get rid of invasive plant species.
3. Plant keystone species.
4. Be generous with your plantings.
5. Reduce your nighttime light pollution.
6. Network with neighbors.
7. Create caterpillar pupation sites under trees and shrubs. (Leave the leaves.)

Homegrown National Park – cont.

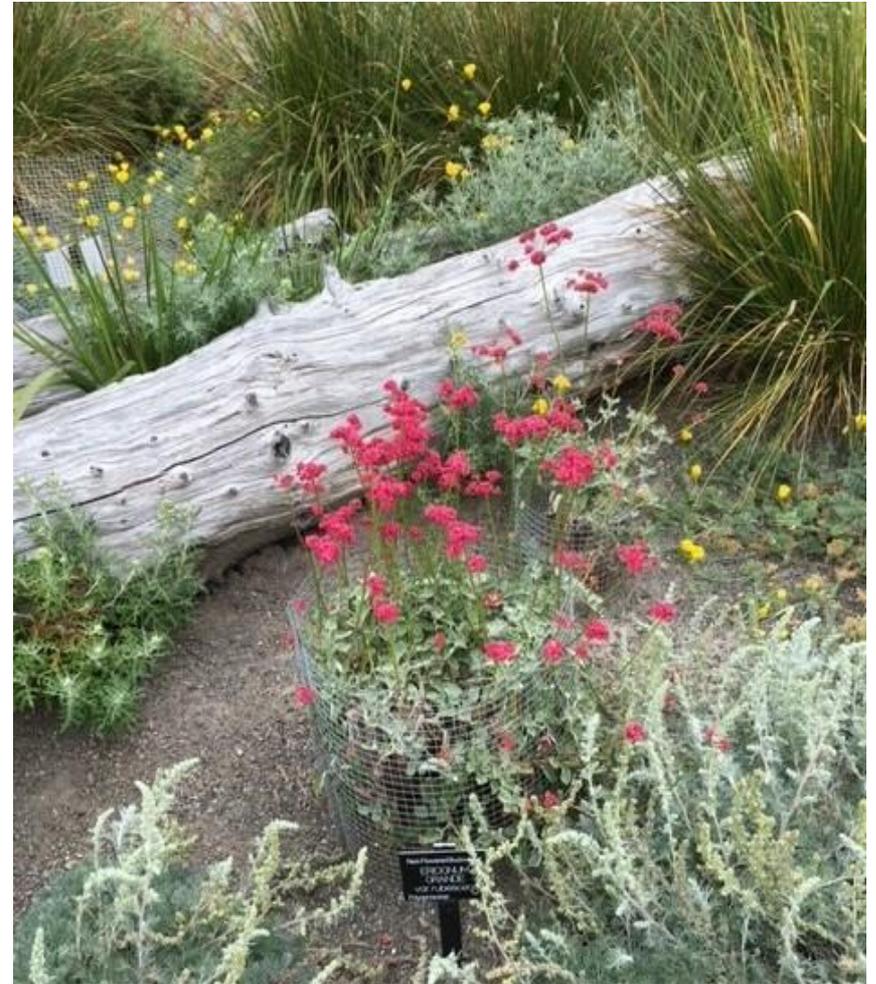
8. Install bubblers or water features to attract wildlife.
9. Set your mower height to at least 3' high.
9. Do not spray pesticides or herbicides or fertilize.
10. Educate your HOA or neighborhood, or civic government. Join your HOA to help make changes.
11. Get on the map and get a sign.

Formal National or International Movements

- 30 x 30 - An international effort to preserve 30 percent of the Earth's lands and waters by 2030.
- 30 x 30 California established in 2020.

The Take Away

- Being concerned for our future means being concerned for the environment.
- Consider first - what affect will any action have?
- Start small - every little bit helps.
- Do what you can.
- Save your own energy, time and money.



Resource List for Gardening for the Future

Books

- Rainwater Harvesting, for Drylands and Beyond- Vol 1, 2 - Brad Lancaster, 2009
- California Native Plants for the Garden – Carol Bornstein, David Fross, Bart O’Brien
- Gaia’s Garden: A Guide to Home Scale Permaculture – Toby Hemenway
- Living Wild: Gardening, Cooking and Healing with Native Plants of California – Alicia Funk, Karin Kaufman
- Gardening with a Wild Heart: Restoring California’s Native Landscapes at Home – Judith Larner Lowry
- Bringing Nature Home: How You Can Sustain Wildlife with Native Plants – Douglas W. Tallamy
- How to Grow Perennial Vegetables – Martin Crawford

Resource List for Gardening for the Future

Books – continued

- The Book of Wilding – Isabella Tree and Charlie Burrell
- Climate Zones
- CA Department of Water Resources -
• <http://www.water.ca.gov/nav/index.cfm?id=106>
- Sunset Magazine - <https://sunsetplantcollection.com/climate-zones/>
- USDA Plant Hardiness Zones - <https://planthardiness.ars.usda.gov/>
- Microclimate evaluation form:
<https://marinmg.ucanr.edu/BASICS/CLIMATE/AssessMicroclimate/>

Resource List for Gardening for the Future

Plant Lists

- Regional Water Authority – Gold Country plant lists -
<http://www.rwa.watersavingplants.com/>
- Lawns-
<https://cagardenweb.ucanr.edu/Lawns/>
- Select a tree -
<https://selecttree.calpoly.edu/>
- WUCOLS – Water Use Classification of Landscape Species
<http://ucanr.edu/sites/WUCOLS/>
- California Native Plant Society -
<http://www.cnps.org>

Resource List for Gardening for the Future

Drought Recommendations

- Drought tolerant crops -

<http://ucanr.edu/sites/scmg/files/183771.pdf>

[_https://asonomagarden.wordpress.com/2009/02/05/tips-for-a-drought-friendly-vegetable-garden/](https://asonomagarden.wordpress.com/2009/02/05/tips-for-a-drought-friendly-vegetable-garden/)

- Alternate Farming Methods

<http://ucanr.org/sites/gardenweb/files/29055.pdf>

- Dry farming –

http://agwaterstewards.org/index.php/practices/dry_farming/

- Food Forest -

<http://www.edibleforestgardens.com>

- Zack Dowell's Blog –

<http://www.foodforestgarden.org/about/>

Resource List for Gardening for the Future

Perennial Vegetables –

<http://www.motherearthnews.com/organic-gardening/vegetables/perennial-vegetables-zm0z12amzkon.aspx>

Hugelkultur –

<http://allthingsplants.com/ideas/view/dave/41/Building-a-Hugelkultur-Raised-Bed/>

- Drought Monitor –

<http://www.californiadrought.org/drought/current-conditions/>

- Lawn water usage costs -

<http://www.todayhomeowner.com/calculating-lawn-irrigation-costs>

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