

https://canopy.org/tree-info/caring-for-trees/trees-and-water/save-water-and-trees/

### **About Master Gardeners**

Our mission is 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.

University of California Agriculture and Natural Resources Master Gardener Program



Use this slide to give a quick explanation of MG program. You can skip it if your introducer has already covered (or will cover) this info.

UCCE = University of California Cooperative Extension. Program is jointly administered by county & UCCE. National/international, but not all states/counties have MG programs. 65 hours training. Next class 2015 (odd years). Ongoing training, ongoing volunteer work Volunteers provide advice and assistance to home gardeners. We are teaching this class/giving this talk as volunteers.

Hotline phone number & details on handout/bookmark, email questions from website, links to UC resources Website: Lots of info. Details on handout/bookmark E-mail list, sign up on clipboard or via website

Demo gardens: PADG, Sunnyvale, Guadalupe, St. Louise (South County), Berger -- addresses & hours on website Prusch Park High-density orchard, rare fruit orchard, native plant circle Martial Cottle (coming), McClellan -- research gardens, variety and methods trials

SGM -- Over 10,000 tomato & pepper seedlings, many other vendors at History San Jose (Kelly Park, down the street

from Happy Hollow & Friendship Garden) FGM – Fall Garden Market at Prusch Park Harvest Festival. Fall vegetable seedlings and harvest celebration. (Just off 280 & 101, entrance on King Rd.) Give date for whichever sale is upcoming.

Courses like this one. Free, single subject talks at libraries and other venues. Speakers for groups and events. Request speakers and advice on website.

Details on-line or in e-mail newsletter

## For more on gardening from your local Master Gardener's

- Watch our training class on YouTube
  <u>https://www.youtube.com/user/CAMasterGardener</u>
- Visit our web site <a href="http://mgsantaclara.ucanr.edu/">http://mgsantaclara.ucanr.edu/</a>
- Check us out on Facebook
  <u>https://www.facebook.com/sccmastergardeners/</u>
- Instagram https://www.instagram.com/mgsantaclara/
- Attend our free monthly plant clinic: <u>http://mgsantaclara.ucanr.edu/events-</u> <u>calendar/?calitem=497008&g=84549</u>

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https://www.almonds.com/blog/irrigation-innovations-help-farmers-take-care-of-the-land-and-its-resources https://www.almonds.com/sites/default/files/Almond-Irrigation-Improvement-Continuum.pdf

Currently, almond farmers report using microirrigation in more than 70 percent of orchards, well above the California state average of 42 percent of farms.<sup>3,4</sup> The adoption of this technology has been a key component in the water efficiency gains resulting in a 33 percent reduction in the amount of water needed to grow a pound of almonds over the past two decades.<sup>5</sup>



https://ccuh.ucdavis.edu/sites/g/files/dgvnsk1376/files/inline-files/2.%200ki1%20Irrigation%20assessment.pdf





One inch = 1/12 of a foot

Volume of one inch on one square foot is  $1' \times 1' \times 1/12' = 0.083$  cubic ft

There are 7.48 gallons in a cubic foot

Therefore we need 0.083 x 7.48 = 0.62 gallons of water

1/12 ft x 1 ft x 1 ft x 7.48 gallons per cubic ft

= 0.62 gallons per sq ft

One inch of rain is the equivalent to 144 cubic inches of water per square foot. Or 1.6 inches of rain is equal to one gallon per square foot ft. These calculations are based on 1 gal.=231 cubic inches.



8 minutes is for hand watering with a garden hose turned on full

Drip irrigation:

- $\frac{1}{2}$  GPH =  $\frac{1}{2}$  gallon per hour.
  - If you water once a week you need to run your sprinkler for 1 ½ hours to get your 2/3 gallon of water.
  - If you water twice a week you need to run your sprinkler twice a week for 45 minutes (3-15 minute cycles)
  - If you water three times a week you need to run your sprinkler three times a week for 30 minutes (3-10 minute cycles)



Lawn sprinklers

1. The goal is for 2/3 of a gallon per sq ft per week. A typical lawn sprinkler will need to be on for 30 minutes per week.

2. If you water twice a week you'll need to run your sprinkler for 15 minutes. If you water 3 times a week you'll need to run your sprinkler for 10 minuets

3.You should also cycle your sprinkler. That is, if you run your sprinkler twice a week you should run it for 5 minutes, cycle it off for 10 minuets, repeat 2 more times. This on off cycle lets the water have time to sink in and go deeper into the soil. Water that is deeper will grow deeper roots and will not run off or evaporate.



https://ccuh.ucdavis.edu/sites/g/files/dgvnsk1376/files/inline-files/Tree%20Watering%20Handouts.pdf





### What About Lawns?

- A traditional lawn needs 1 inch of water a week
- If you water twice a week you'll need to run your sprinkler for ~ 15 minutes. If you water 3 times a week you'll need to run your sprinkler for 10 minutes
- You should cycle your sprinkler. That is, if you run your sprinkler twice a week you should run it for 5 minutes, cycle it off for 10 minutes, repeat 2 more times.









https://ucanr.edu/sites/WUCOLS/Plant Search/



https://www.treesformissoula.org/watering-trees.

https://ccuh.ucdavis.edu/sites/g/files/dgvnsk1376/files/inline-files/Tree%20Watering%20Handouts.pdf

Santa Clara Water Summit 2/25/21 – managing trees Canopy (https://canopy.org/)

- Water a tree once a week for the first year 10-15 gallons a week
- Deep water if you use a Tree Gator don't place it next to the trunk, put it on a stake
- Water trees during a drought









https://ggwash.org/view/72499/lawns-are-good-for-almost-nothing-environment-eco-landscaping https://earther.gizmodo.com/lawns-are-an-ecological-disaster-1826070720





- Delta Bluegrass grows 3 kinds of CA native sod for residential areas. These are more expensive, but provide an instant lawn.

http://www.deltabluegrass.com/sod-products/california-native-sod

# What is better

## We need to switch to a mix

# of native grasses.

Native grasses lower the need for watering, eliminate fertilization, and limit watering to only a couple of times a year.

Native plants increase

butterfly and bird populations in urban areas by around four and eightfold

With their deeper roots native grasses store more carbon underground than shallowrooted turf. Less expensive options, planted from plugs; these take more time (to establish and to fill in): - Festuca rubra 'Point Molate' can be planted from seed or plugs <u>https://www.anniesannuals.com/plants/view/?id=3439</u>

Carex pansa or C. praegracilis
 <u>https://www.greenleeandassociates.com/carex-pansa.html</u>
 <u>https://www.pacifichorticulture.org/articles/a-sedge-by-another-name/</u>

- Leymus triticoides 'Lagunita'

https://www.greenleeandassociates.com/leymus-triticoides-lagunitareg.html

-Bouteloua gracilis - UC Davis campus has a large expanse of this. Great as a lawn or as an ornamental grass in flower. https://www.greenleeandassociates.com/bouteloua-gracilis.html







The native garden more costly to install.

Plants and urban runoff features (rainwater collection system \$3.9k & permeable paving \$2k) cost more.

But water use over 80% less

Green waste over 50% less

Maintenance time two-thirds less

Your home landscaping can be even better, depending on your choices



Trees save water

- Only cost \$25 a year to water (www.canopy.com)
- Manage rainwater and storm events
- Improves water quality
- Slows water down, helps recharge aquifers
- Drought-tolerant so they aid water conservation
- Maximize the water conservation of trees and landscaping









Properly applied mulch:

- Insulates the roots from extreme temperatures
- Slows soil moisture evaporation
- Reduces water use
- Suppresses weeds
- Reduces soil compaction
- · Feed nutrients into the soil as the mulch breaks down
- Provides a bugger, protecting trees from mowers and soil compaction
- Provide a donut around tree trunks don't cover the trunk with mulch mulch holds in moisture

### Mulch tips:

• Use organic matter such as wood chips with or without leaf matter. Trees prefer wood chip mulch and their own leaves

- Apply mulch layer 3-5 inches deep
- Replenish mulch layer every spring





https://valleywaternews.org/.../harvest-rain-and-get-a-rebate/

#### **Images for rain gardens**

#### People ask

Do rain gardens really work?

**Rain gardens** are **effective** in removing up to 90% of nutrients and chemicals and up to 80% of sediments from the **rainwater** runoff. Compared to a conventional lawn, **rain gardens** allow for 30% more water to soak into the ground. ... Because **rain gardens** will drain within 12-48 hours, they prevent the breeding of mosquitoes.



https://newscenter.lbl.gov/2019/08/14/cool-roofs-can-help-shield-californias-cities-against-heat-waves/ https://www.greenbuildingadvisor.com/article/cool-roofs-cut-urban-water-consumption

## Question

• Do you have heat sinks or water sinks in your yard?















This is a suggestion for your ending slide. You could replace the large logo with a slide from your subject.