University of California
Agriculture and Natural Resources

UCCE Master Gardener Program
Colusa County

A Garden Runs Through It

June 2021

Whether it's a vegetable garden, houseplants or a landscape...

UCCE Master Gardener Program, Colusa County
County Director, Franz Niederholzer

UC Cooperative Extension,
Colusa County

P.O. Box 180
100 Sunrise Blvd., Suite E
Colusa, CA 95932

530-458-0570
glhernandez@ucanr.edu

cecolusa.ucanr.edu

In This Issue

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Upcoming events

June
Founders Day
Memorial Park, Colusa
June 19, 10—2 pm

Farm to Fork Dinner
Memorial Park, Colusa
June 24, evening

June and beyond

Williams Flea Market
550 8th St., Williams
June 4,
July 2,
August 6,
September 3,
October 1
9 to noon

Advice to Grow by...Ask Us!

Advice to Grow by … Ask Us!

LET'S #DIGDEEP!

BIG DIG DAY OF GIVING

24 hours to support the programs you care about!

JUNE 4, 2021 | 12 AM TO 12 PM

UCANR.EDU/BIGDIG

Donate on-line to support our mission to extend sustainable gardening practices in thousands of community, school and demonstration gardens across California.

UNIVERSITY OF CALIFORNIA
Agriculture and Natural Resources

Ornamental Plant of the Month

Drought and your Garden

This article also appears in the Williams Pioneer Review

Drought and Your Garden – Symptoms

Plants that do not receive enough water eventually show signs of water stress. During a drought or under water restrictions aimed at water conservation, keeping plants alive can be challenging. Most plants exhibit similar symptoms when they are in need of water. Check the soil before irrigating because over watering and under watering symptoms are the same.

Common symptoms of water stress include:

Wilting or drooping leaves that do not return to normal (without additional water) by morning. Curled or yellow leaves that may fold or drop, along with twig drop. Leaves that lose their luster and become grayish or bluish. Sunburned leaves, especially on the south side of the tree. New leaves that are smaller or stem sections that are closer together than normal. Lawn grasses that retain a footprint for several minutes.

What can be done to keep plants alive during drought?

First you want to rule out other causes of plant stress. On hot days plants may not be able to absorb water quickly enough to compensate for water lost through their leaves, causing temporary wilting. This is temporary. Next, apply a layer of mulch 3 to 4 inches thick. This keeps the ground cool and discourages weeds. Don't fertilize when water is scarce. Fertilizer makes the plant grow. During a drought we want the plant to grow as little as possible.

Control your weeds. You don't weeds using your want precious water. Prioritize your landscape needs. Mature trees and shrubs can usually be kept alive with occasional deep watering. Reduce water waste in lawns by correcting sprinkler problems. During a water shortage, it is possible to keep a lawn alive by gradually reducing water to one-half the recommended amount. Also, increase the mowing height for your lawn. The grass blades shade each other creating a cooler and less thirsty lawn.

Submitted by Gerry Hernandez

Ornamental Plant of the Month

Drought and your Garden

This article also appears in the Williams Pioneer Review

Drought and Your Garden, Lawns

This is will be a series of articles throughout the summer.

As Americans we love our lawn! Did you know that if lawn (not ball fields and parks) were an agricultural crop it would be the number one crop in the United States? Wow, that's a lot of grass to mow and throw in the green waste.

Warm season grasses such as Bermuda grass are more drought efficient than cool-season grasses such as tall fescue and rye grass. Bermuda grass may survive several weeks of dryness. Cool season grasses may die within a month or two of no water. During a drought, gradually reduce the amount of water to your lawn to one-half of what you are currently irrigating.

An easy way to determine if your lawn needs water is to walk across the grass. Turn around and look for your footprints. Do you see them? If yes, it's time to irrigate. If not, it's not time to irrigate.

Here are some lawn maintenance tips:

- Water at night, ideally between 9 pm and 6 am, this reduces evaporation and the wind will not be strong enough to interfere with sprinkler patterns.
- Reduce your lawn irrigation in half. You don't have to stop irrigating your lawn.
- Don't let the water run into the gutter. No matter how much you irrigation concrete it will not grow.
- Raise the height of your mower. Taller grass blades shade each other reducing evaporation.
- Do not fertilize your lawn! Fertilizer increases growth which increases the need for water. Lawns in California rarely need fertilizer.

Good luck! A few simple changes can reduce your water bill and have a great looking lawn.

Submitted by Gerry Hernandez

Ornamental Plant of the Month

Drought and your Garden – Irrigation

This article also appears in the Williams Pioneer Review

Practicing efficient irrigation is essential during periods of drought. Here are some best practices that should be followed to help increase water efficiency.

Drip irrigation systems are ideal for home gardens and can reduce water usage by 50%! Drip irrigation systems are relatively easy and inexpensive to set up and can be attached to timers for ease and to ensure plants are watered at the optimal time of the day. Drip irrigation applies just the right amount of water to only the plants that need it without overspray or runoff.

Check the soil moisture regularly to avoid over-application. Squeeze the soil in your hand; if it sticks together, it is moist and irrigation should be delayed. If the soil has dried out to a depth of 2-4 inches, plan to water. This is especially important if using mulch, where water can be held in the soil for longer periods of time.

Check your irrigation system and timer regularly. Fix any leaks! Irrigate early in the morning to avoid the wind and evaporation. Apply mulch 3 to 4 inches deep. Mulch decreases evaporation, keeps the soil cool and suppresses weeds. Weeds use valuable water to grow, get rid of the weeds. Avoid runoff, no matter how much you water concrete it will not grow.

Prioritize your plants. High priority plants include trees and shrubs. Medium priority plants include fruit trees, nut trees, perennials and vegetables. Low priority plants include annual flowers and herbs, and grass.

For your lawn. Irrigate between 9 pm and 10 am, this will reduce evaporation. Mow your lawn higher during warm weather. Each blade of grass will shade each other creating a cooler climate in the lawn. As a society we love our lawns and tend to over water and over fertilize. During a drought cut irrigation in half and do not fertilize.

Submitted by Gerry Hernandez

Edible Plant of the Month

Edible Landscaping in a Hotter than Heck Climate

Do you ever wonder if anything attractive (other than the usual peppers, melons, squash, and tomatoes) could be grown in our summer climate? Of course, we can see rows of yummy vegetables, those "tastier than thou" juicy tomatoes we tend to share with our neighbors, and over-share summer squash What can we do to set a frame to this beautiful picture of seasonal goodness? To do this, we need to look at other areas of the world who share our climate. Italy, Spain, and southern France also deal with temperatures and weather like ours…therefore many refer to our climate as "Mediterranean".

Mediterranean climates are also found in Chile, South Africa, Australia beside a large portion of California.

What could we use to "frame" our luscious vegetable garden, and to make it a tasty one as well? How about a boundary line from our neighbor consisting of olive trees/hedge row or interplanted with pomegranates, almond, figs, pistachio, quince, *loquat. (Take note loquats tend to need deeper watering than the previous mentioned, perhaps loquats could be planted on an end and watered on a longer schedule). Outside rows could also consist of our more conventional fruit trees; apple, peach, apricot, plum (remembering many conventional fruit trees are not self-pollinating and will need a couple varieties to secure fruiting) citrus, and/or avocado. Inside this row planted inwards toward our vegies could consist of grapes, citrus, star fruit, guava, passionfruit, and/or kiwi. Wouldn't it be fun to have at least one half of your yard/garden planted in a Mediterranean fashion with non-conventional type of fruit? You will be the hit of the neighborhood, with others wanting you to share the fruit of your labor for their overzealous zucchini.

Sunset Western Garden Book is an EXCELLENT resource to find what works best should you question what to plant and when. It is the "go to" resource when shopping for trees/plants for your area.

Submitted by Annelie Lauwerijssen

Recipe of the Month

Pasta with Green Clam Sauce

This goes together really fast once you get the chopping done.

It is almost a pesto it is so thick...

My sister made this for me about 20 years ago.

It has been a "go to" recipe ever since.

1/2 - 2/3 of a stick of butter, unsalted is best

2 large bunches of Italian, flat leaf parsley, chopped

(You can use the stems, too, if you cut them very fine)

1/2 medium red onion, chopped fine

6-8 large cloves of garlic, peeled and minced or grated

1 bunch green onions, sliced, including tender tops

1 cup white wine

1 tablespoon corn starch

1/2 tsp black pepper

4 10 oz cans of baby clams (or equivalent of other clam products)

1 lemon, zest and juice squeezed over the finished dish

1 pound of pasta - your choice, but I liked it with small shells to hold the sauce

Start your pasta and cook in salted water until just al dente (or a little less if you like it chewy)

Drain the clams, save the liquid and let it sit to allow any sand to go to the bottom

Rinse the clams to remove any more sand and set aside,

You should have about 2 1/2 cups of clams

If the clams are big, chop them up to suit your family's taste

Put the liquid (leaving sand behind) in a small sauce pan

Reduce by about half over medium heat, about 5 min.

Continue to next page...

Recipe of the Month

Continued from previous page...

Meanwhile, in a 12" skillet, saute the parsley and red onion in the butter

Once onion is beginning to soften, add the garlic and green onion

Be careful not to scorch the parsley and onions

Mix the corn starch into the white wine (no lumps, please)

Add this to the parsley mixture along with the clams and pepper

Add the reduced clam liquid, but leave the last 2 T in the bottom (where there may be more sand!)

Stir gently as the cornstarch thickens the wine and clam liquid

Drain your pasta, saving some cooking water

Toss into the skillet with the clams and parsley mixture

Stir to combine adding some cooking water to finish cooking pasta and/or if you want a looser sauce

Serve with a squeeze of lemon and some lemon zest, if desired

This sauce could be put on toasted slices of baguette as an appetizer, too.

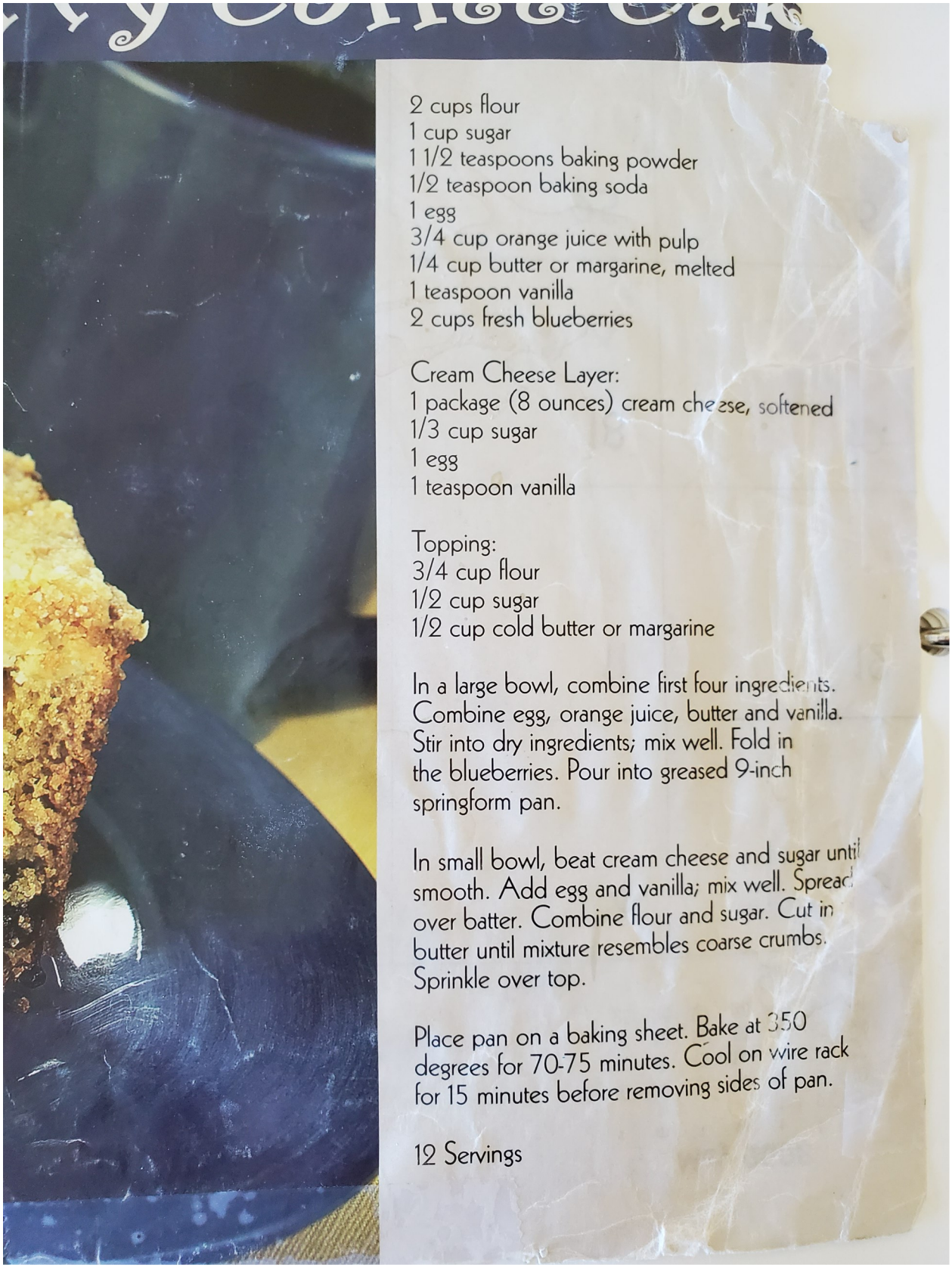
One of my clients at the library makes this dish with chopped tomatoes and basil, replacing the parsley.

You could also stir in 3/4 cup of heavy cream to make a richer sauce

Submitted by Penny Walgenbach

Recipe of the Month **Blueberry Coffee Cake**

Bonus recipe!



2 cups flour
1 cup sugar
1 1/2 teaspoons baking powder
1/2 teaspoon baking soda
1 egg
3/4 cup orange juice with pulp
1/4 cup butter or margarine, melted
1 teaspoon vanilla
2 cups fresh blueberries

Cream Cheese Layer:
1 package (8 ounces) cream cheese, softened
1/3 cup sugar
1 egg
1 teaspoon vanilla

Topping:
3/4 cup flour
1/2 cup sugar
1/2 cup cold butter or margarine

In a large bowl, combine first four ingredients. Combine egg, orange juice, butter and vanilla. Stir into dry ingredients; mix well. Fold in the blueberries. Pour into greased 9-inch springform pan.

In small bowl, beat cream cheese and sugar until smooth. Add egg and vanilla; mix well. Spread over batter. Combine flour and sugar. Cut in butter until mixture resembles coarse crumbs. Sprinkle over top.

Place pan on a baking sheet. Bake at 350 degrees for 70-75 minutes. Cool on wire rack for 15 minutes before removing sides of pan.

12 Servings

Submitted by Penny Dennis

Consejos Que Le Ayudarán….

¡Pregúntenos!

Programa Jardinero

Maestro de UC

En el Mercado de Pulgas Williams, 9 am de mediodia.

4 de junio, 2 de julio, 6 de agosto, 3 de setiembre, 1 de octubre

UNIVERSIDAD DE CALIFORNIA
Agricultura y Recursos Naturales
Programa Maestro de Jardinero UC

Advice To Grow By….

Ask Us!

UC Master

Gardener Program

At the Williams Flea Market, 9 am to noon.

June 4, July 2, August 6, September 3, October 1

UNIVERSITY OF CALIFORNIA
Agriculture and Natural Resources
UC Master Gardener Program

Book of the Month

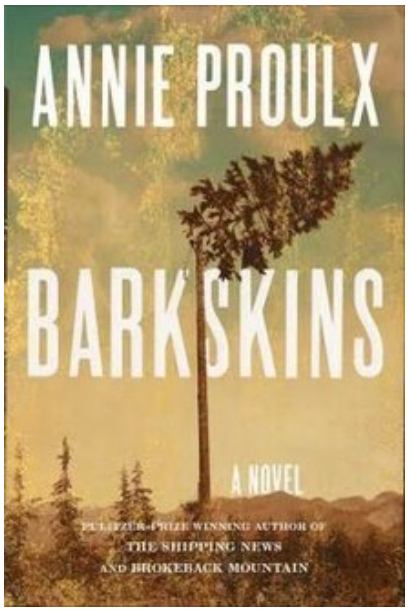
Barkskins by Annie Proulx

Last year before the pandemic took its toll on our activities our book club chose the novel *"Barkskins"* as a selection. It was a hefty book by weight and the storyline was even heftier. I don't usually consider the work of fiction as subject for horticulture books but this one was done with a clarity and vengeance that really captures the time and circumstances.

The story begins in the 17th century, in the part of New France that became modern Canada, where colonists – justifying their atrocities with high-handed Christian rhetoric – are unworried by the consequences of tampering with an environment that the local pagans hold in fearful respect. Two French labourers, René Sel and Charles Duquet, are chopping down trees for a settler who promises them land in return for three years' unpaid service. While René does as he's told – fathering several children with his master's indigenous housekeeper in the process – Duquet scarpers, surviving a near-fatal trek to establish a logging dynasty.

The author takes no store with favorite characters and is as willing to dispose of them whether they are likable or not. It was the thread of bringing us to modern day practices that kept me turning the pages (650 in total). It even takes some of the characters to New Zealand lest we start to think she is singling out our continent as unique.

When Proulx does credit us with insight, it's usually only to exploit the centuries-wide gap between what we know and what her characters know – witness the clanging dramatic irony of repeated declarations that the forests will last for ever. There's quite a bit of cackling from the wings: when someone facing imminent doom cries, "I'm not done", Proulx sets him straight ("he was done"). Someone else drinks water from a well that is ominously hailed as the freshest in town – and drops dead one page later. It appears that some of the characters are barely introduced before they are chopped down. Proulx appears to be inviting us to care more about the context and all of the characters can be simply disposed of.



The book winds up with the company of a present-day ecologist issuing the age old warning of the risk of ignoring the situation – perhaps it's not too late for us to learn. Enjoy!!

Submitted by Cynthia White

Yellowjackets

Yellowjacket wasps prey on other insects and scavenge on human food and garbage.

Yellowjacket

Yellowjackets, sometimes called "meat bees," defend their nests, as do other social wasps and bees, but are more likely to sting if disturbed while foraging. Stings generally cause pain and short-term injury, but some people suffer severe allergic responses. Prevent injury by avoiding wasps and removing food sources. Trapping or nest treatment can reduce yellowjacket populations.

Make sure it's a yellowjacket.

- Yellowjackets are ½ to 1 inch long with jagged bright yellow and black stripes. Their narrow "waists" are barely visible. Unlike other common wasps, yellowjackets scavenge on food. They nest in holes in the ground, inside wall cavities, or in hanging nests totally enclosed in gray paper with a single entrance.
- Honey bees are less brightly striped than yellowjackets and have more hair. They usually aren't attracted to food (although they may go to sweets) and are unlikely to sting unless trapped or stepped on. They often nest inside cavities in trees or houses.
- Paper wasps have long slender waists, build paper nests with many open cells under eaves, and are rarely aggressive.
- Mud daubers are dark-colored and thread-waisted. They build small, hard mud nests and rarely sting.

Honey bee

Paper wasp

Mud dauber

Stay calm to avoid stings.

- If a wasp lands on you, don't swat it or run. Wait for it to leave, or gently brush it away.
- Don't disturb nests. Wasps flying from a hole in the ground or a building indicate a probable nest.

Remove attractive food sources.

- Keep food, including pet food, covered or indoors.
- Outdoors, cover soda cans so wasps don't crawl in.
- Keep garbage in sealed cans and empty regularly.
- Pick up and dispose of ripe fruit.

Use traps to reduce yellowjacket numbers.

- Yellow lure traps hung along the perimeter of a property can reduce foraging of some species around patios or picnic areas.
- Homemade traps using meat bait hung on a string just above soapy water may also be used.
- Place traps away from areas where people gather, such as picnic tables.

What if you find a nest?

- Ask your Mosquito and Vector Control District if they treat nests, or locate a licensed pest control operator. Nests might be far away and hard to locate.
- If you choose to treat nests yourself, wear protective clothing on your body, hands, and head. Use an insecticide that shoots a long stream into the nest entrance and is labeled for treating yellowjacket nests.
- Paper wasp nests shouldn't require treatment unless they are near human passageways.

What you do in your home and landscape affects our water and health.

- Minimize the use of pesticides that pollute our waterways and harm human health.
- Use nonchemical alternatives or less toxic pesticide products whenever possible.
- Read product labels carefully and follow instructions on proper use, storage, and disposal.

For more information about managing pests, visit ipm.ucanr.edu or your local University of California Cooperative Extension office.

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April 2019

Seasonal IPM Checklist

The list below reflects possible landscape activities to do during the selected month(s) in your region. You can use the checklist as a guide for IPM activities in your own landscape or provide it to your clients.

	June
☐	Abiotic Disorders - Prevent or manage damage, such as that caused by aeration deficit, herbicide, salinity, soil pH, sunburn, wind, and too much or little water.
☐	American plum borer - Check for frass and gum on lower branch crotches and graft unions of young trees such as almond, mountain ash, olive, sycamore, and stone fruit.
☐	Ants - Manage around landscape and building foundations, such as using insecticide baits and trunk barriers.
☐	Aphids - On small plants, spray a strong stream of water or apply insecticidal oils and soaps. Look for and conserve natural enemies such as predaceous bugs, lacewings, lady beetles, and syrphids.
☐	Asian citrus psyllid - Look for it and if found where not known to occur report it and other new or exotic pests to your local county agricultural commissioner.
☐	Camellia, citrus, gardenia, grape and other plants adapted to acidic soil - If leaves are yellowing (chlorotic) between green veins, plants may benefit from foliar or soil application of iron and zinc chelate and mulching.
☐	Carpenter bees - Paint or varnish and seal wood in which they nest. If intolerable, treat tunnels during fall or early spring.
☐	Carpenterworm - Protect trees from injury and provide proper cultural care, especially appropriate irrigation.
☐	Cherry spotted wing drosophila - Harvest early, apply spinosad as soon as fruit begins to develop any pink color.
☐	Citrus - Monitor for damage and pests such as leafminer and scales.
☐	Clean up mummies and old fruit and nuts in and under trees to avoid harboring pests.
☐	Clearwing moths - Look for signs of boring in ash, birch, pine, poplar, and willow; less often in oak, sycamore, and stone fruits.
☐	Coast redwood dieback - Check for drought-stress related maladies such as abiotic disorders, bark beetles, fungal diseases, and spider mites. Deep water trees and apply mulch.
☐	Codling moth of apple and pear - Bag fruit. Promptly remove infested and dropped fruit. Apply insecticides only if precisely timed.
☐	Compost - Turn and keep it moist.
☐	Cover fruit trees with netting to exclude birds and other vertebrate pests.
☐	Deter borers - Deep water trees adapted to summer rainfall e.g., fruit and nut trees. Protect trunks and roots from injury and avoid pruning, except for hazardous trees and certain pests and plants that warrant summer pruning. Paint trunk and scaffolds with white interior latex paint diluted with an equal amount of water.
☐	Fire blight - Look for oozing and dead limbs on pome plants such as apple, crabapple, pear, and pyracantha. If a problem in the past, apply blossom sprays to prevent new infections.
☐	Irrigation - Adjust watering schedules according to the weather and plants' changing need for water. Check systems for leaks and broken emitters and perform maintenance as needed. Consider upgrading the irrigation system to improve its water efficiency.

Seasonal IPM Checklist

- [ ] Leaffooted bug - Look for feeding on fruit and nuts such as almonds, pistachios, and pomegranates.
- [ ] Mosquitoes - Eliminate standing water e.g., in gutters, drain pipes, and flowerpots. Place *Bacillus thuringiensis* subspecies *israelensis* in birdbaths and ponds to selectively kill mosquito larvae.
- [ ] Mulch - Apply organic mulch where thin or soil is bare beneath trees and shrubs.
- [ ] Powdery mildew - Check for signs of disease on apple, crape myrtle, grape, rose, and stone fruits.
- [ ] Prune pine terminals only during candling (new shoot growth), late spring to early summer, to retard growth and in young pines direct growth.
- [ ] Redhumped caterpillars - Monitor trees such as liquidambar, redbud, stone fruits, and walnut. Cut off shoots infested with groups of young caterpillars. Apply *Bacillus thuringiensis* or spinosad.
- [ ] Root rot - Favored by excessive water and poor drainage. Avoid overirrigation and waterlogged soil.
- [ ] Rose pests - Manage or take preventive actions, such as for black spot, hoplia beetle, powdery mildew, and thrips.
- [ ] Scale insects - If damage has been unacceptable, monitor the crawler stage and when abundant apply horticultural oil or another insecticide.
- [ ] Spider mites - Irrigate adequately, mist leaf undersides daily, reduce dustiness, spray horticultural oil.
- [ ] Weeds - Manage weeds using nonchemical methods such as cultivation, handweeding, or mowing.
- [ ] Yellowjackets - Place out and maintain lure traps or water traps. Trapping is most effective during late winter to early spring.

Gardening Guide

UC Master Gardener Program of Colusa County

Zones 8 and 9

	June	July	August
PLANTING	• In the flower garden you can still plant seeds of marigolds, zinnias, cosmos and sunflowers. You can set out transplants of perennials like yarrow, verbena, black-eyed Susan, and dahlias. • In the vegetable garden you can plant seeds of pumpkins, squash, and corn.	• You can still plant seeds of annuals: zinnias, marigolds, sunflowers and alyssum will grow and bloom this year. 	• You can plant directly in the garden seeds of carrots, beets, lettuce, spinach and turnips. Indoors you can start seeds for broccoli, cabbage, kale, bunching onions, and radicchio.
MAINTENANCE	• Be sure to water early in the day to conserve water and minimize plant disease. • Regularly check your sprinklers and drip emitters for needed repairs and adjustments. • Monitor soil moisture in hot weather to be sure you are irrigating enough. (Use a metal rod to push into the ground. If it goes in easily, the soil is moist.)	• Dig/divide bearded iris that have not been divided. • You can dig/divide other bulbs after the foliage has died off. • Deadhead blooming plants as they finish flowering to promote continuing bloom. • Fertilize roses after each burst of blooms. • Cut back lavender after flowering to promote a second bloom. You can prune by half to keep the plant in bounds.	• Continue to weed. Be especially sure to get weeds before they flower and set seeds. • Cut off spent flowers of perennials and annuals for continued bloom.
PREVENTION	• Before the full heat of summer arrives mulch your beds to control weeds and conserve moisture. 	• Be sure everything is well mulched for the heat of summer. Water before 10 am to avoid fungal infections and to minimize water loss to evaporation. • If you have fruit trees, be sure to pick up dropped fruit to prevent brown rot from developing and leaving spores for future infection.	• Water before 10 am to avoid fungal infections and to minimize water loss to evaporation. • Check the mulch you have spread around and be sure it is thick enough to suppress weeds. (3 to 4 inches)

Master Gardener activities!

In today's fast paced, social media way of life, fake news has become normal.
This includes fake gardening advice.
UC Master Gardeners use cutting edge, research-based information to help you garden better.
We are practical, connected and trusted.

Advice to Grow By … Ask Us!

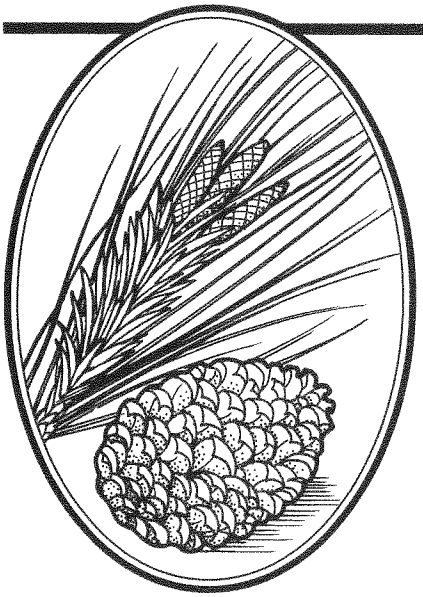
Tomorrow's activities are created by today's dreamers—you can make sure that the UC Master Gardener Program of Colusa County is still working to help future generations through your support.

Click here to support us.

Science Word of the Month

Biological pest control (biocontrol) - The action of parasites, predators, pathogens or competitors in reducing another organism's population density. For example, lady bugs.

If you attended one of your workshops, you will receive an email from mgevaluation@ucanr.edu. Your input gives us the tools we need to grow and improve our program. *Thank you!*



Communities

Whether in a rain forest, tundra, desert, or meadow, plants and animals live and interact within interdependent **communities.** These communities have **food pyramids** with producers and consumers. Plants are the producers because they make their own food. Plants are the foundation of the food pyramid. First-order **consumers** eat **producers**. Second-order consumers eat first-order consumers, and so on. When acts of nature, pestilence, or humans kill off entire species of plants, the foundation upon which all life exists is threatened.

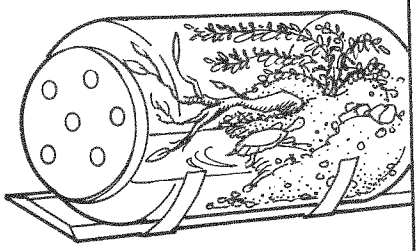
Terrariums

(Science Experiment/Critical Thinking)

Have students use large glass jars, such as commercial-sized mayonnaise jars, to create simple terrarium communities. Use these terrariums to conduct experiments with water, light, soil conditions, or to observe plant and animal interactions.

Directions:

- Use a hammer and nail to make holes in the lid of a clean, dry jar.
- Place the jar on its side and tape a ruler to the bottom to keep the jar from rolling.



- Select a habitat and bring in appropriate soil, plants, and animals:

Desert: Sand, cactus, lizard, branch or twig, water.

Bog: Gravel, ferns, mosses, liverworts, insects, turtle, frog, twig, water.

Woodland: Soil, sticks, rocks, ivy, philodendron, coleus, fern, grass, worms, mouse, water.

Remind students to maintain their terrarium and to write observations in their science journals about the interdependence of their terrarium community.

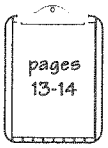
Ecosystem Experts

(Research/Oral Language/Art)

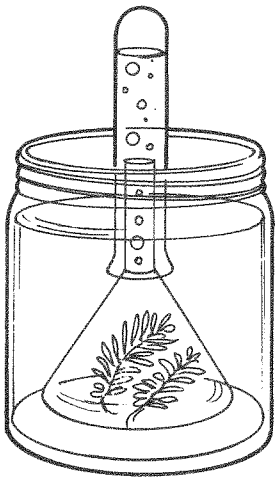
Read aloud illustrated books about different habitats such as *Desert Giant: The World of the Saguaro Cactus* or *The Great Kapok Tree* to help students become familiar with different ecosystems. Encourage cooperative groups to choose a habitat to research. Have groups give a class presentation with visuals depicting the interdependent community they have studied.

Oxygen Producers

(Research/Oral Language/Art)



Plants not only produce food but they also produce oxygen. Have students complete the experiment on pages 13-14 to demonstrate oxygen production.



Name:

Oxygen Producer
Experiment 1

EXPERIMENT 1

Question: *How do aquatic plants release oxygen into the water?*

Hypothesis: _____

_____

_____

Materials

- ☐ aquatic plant such as Anacharis*
- ☐ large glass jar
- ☐ clear funnel
- ☐ test tube
- ☐ water

Procedure:

Step 1

Place the plant in the jar and fill the jar with water.

Step 2

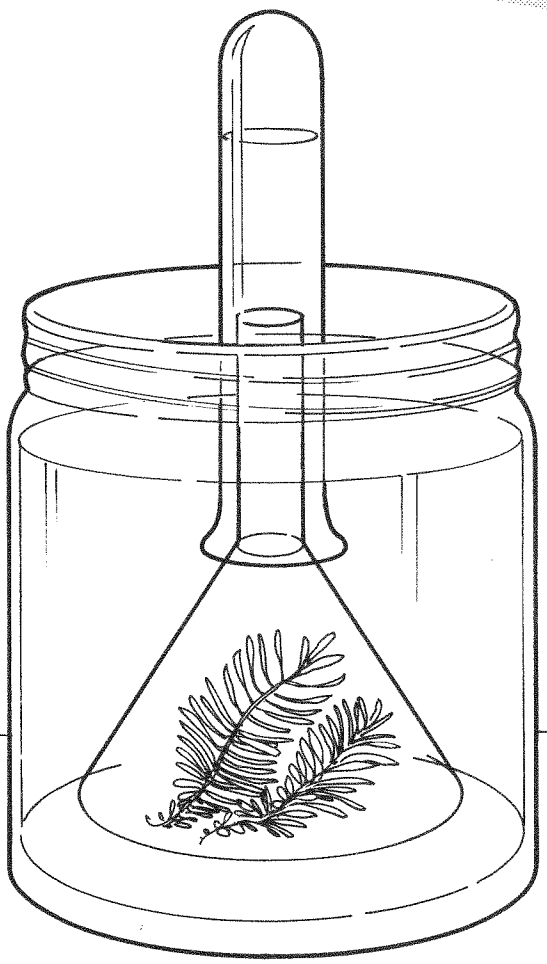
Cover the plant with wide end of the funnel.

Step 3

Fill the test tube with water. Hold your thumb over the top of the test tube to keep the water from coming out, and place the opening of the test tube over the top of the funnel.

Step 4

Record your observations.



*Note: *Anacharis*, formerly known as *Elodea*, can be purchased at a pet store.

Name:

Oxygen Producer
Experiment 1

EXPERIMENT 1

Results and Conclusions:

1. What did you observe happen? _____

2. Why do you think this happened? _____

3. Describe how the results did or did not support your hypothesis.

4. Do you think other aquatic plants will produce the same results?

5. Based upon the results of this experiment, why do you think plants are a necessary part of aquatic communities? _____

Science Challenge: Set up an experiment to test this question:

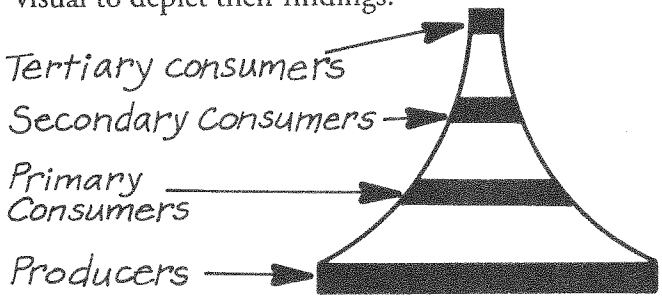
How many aquatic plants are needed to sustain an environment with three fish?

Write your question, hypothesis, procedure, and materials list on another sheet of paper. Then test the hypothesis and record your conclusions.

Trophic Levels

(Critical Thinking/Art)

Trophic levels examine the food chain from the point of energy. At each level food is taken in, stored, and passed on to the next level. Encourage students to identify the trophic levels for the ecosystem their cooperative group studied and to create a visual to depict their findings.

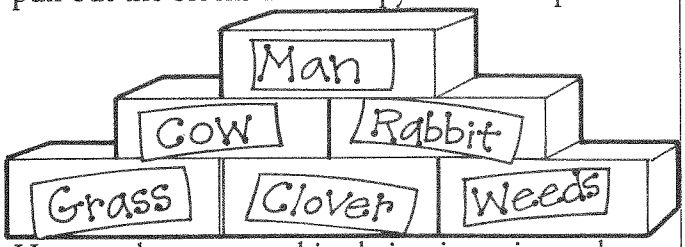


Food Pyramids

(Demonstration/Critical Thinking)

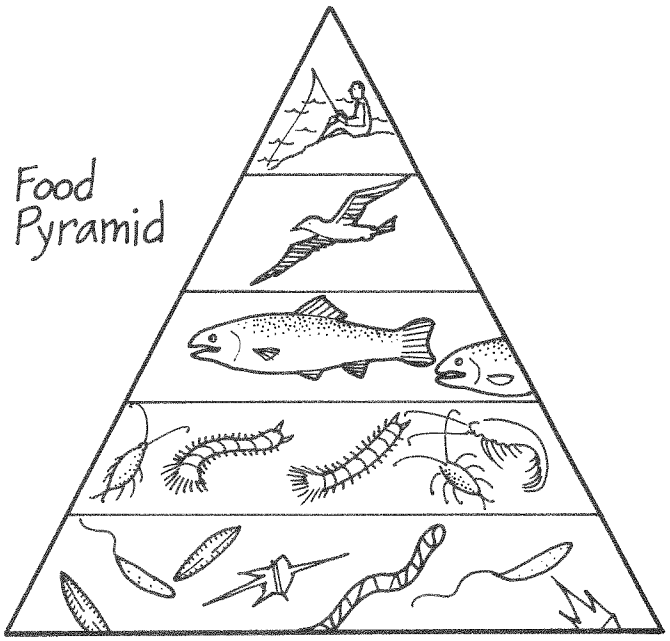
Create a visual demonstration of the food pyramid using paper labels taped to blocks. Lay down layers of blocks labeled producers, first-order consumers, second-order consumers, and so on. As you add layers, ask students what plants and animals the blocks might represent in various ecosystems.

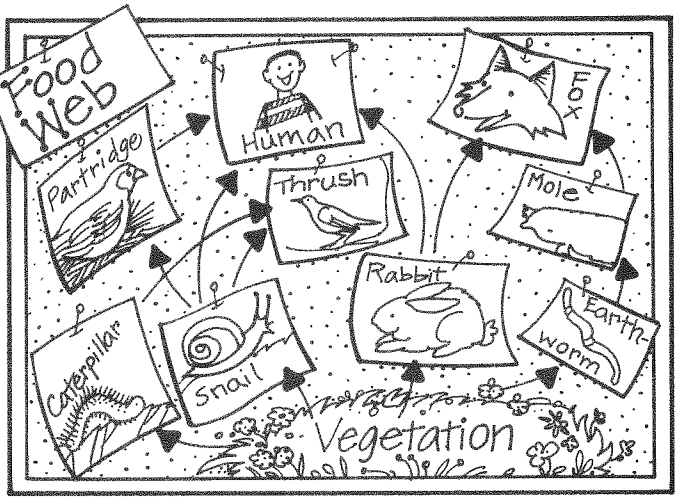
Discuss what might happen to a food pyramid if various plant or animal species became extinct due to a volcanic eruption or human interruptions such as clear cutting. As species "die out," have students pull out the blocks until the pyramid collapses.



Have students respond in their science journals to the following:

- Describe the food web of which you are a part.
- How can you help keep your food web intact?

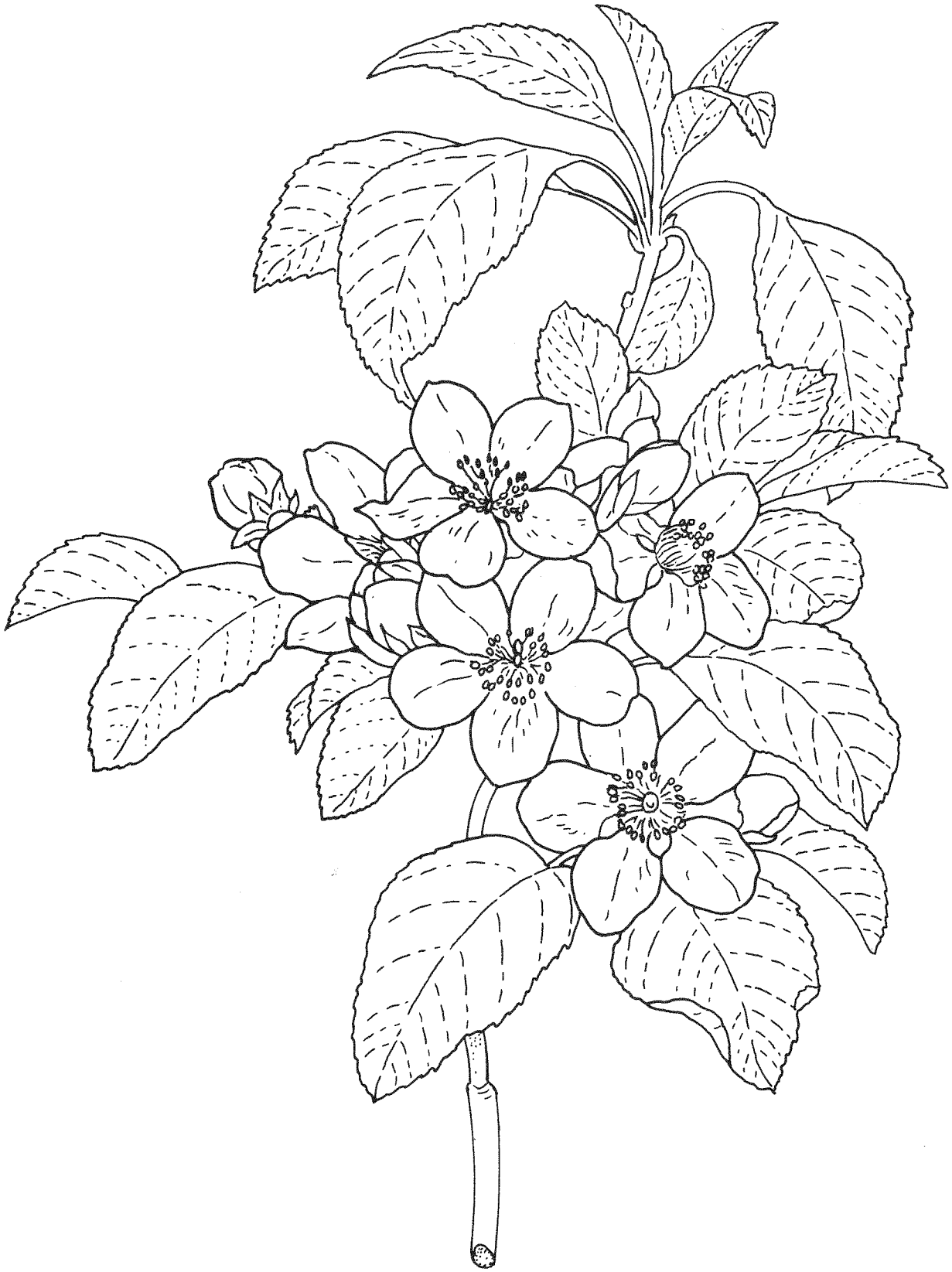




Food Web Board

(Art/Critical Thinking)

Challenge students to build a food web board to represent the ecosystem of their choice. Students may use pictures from science magazines such as *Ranger Rick* or *National Geographic*, or they may prefer to illustrate the plant and animal species themselves. Give students flexibility in illustrating their webs. Simple food webs or food pyramids are common choices.



5. Apple Blossoms *(Malus pumila)*

#15

HEARING PROTECTION

Information given here is intended for use by program representatives, master gardeners, and those they train.

According to information from the National Institute for Occupational Safety and Health (NIOSH), 25% of employees age 55 or older have developed significant hearing impairments when exposed long term in the workplace to an average noise level of about 90 decibels (dBA). ***English and Spanish language safety videos on hearing protection are also available for loan from the ANR Environmental Health & Safety Library at http://safety.ucanr.org.***

Noise Hazards

- Noise can damage hearing when it is continuously at about 90 dBA or greater.
- Noisy work areas can elevate anxiety, hypertension, and fatigue in employees.
- Noise-induced hearing loss is permanent and occurs progressively over time.
- The following table lists recommended exposure times without hearing protection for noise hazards and levels routinely encountered in agricultural settings:

Noise Hazard	Level of Noise	Recommended Exposure Time
Dynamite blast, gunshot	140 dBA	None
Chainsaw	115 dBA	15 minutes or less
Barn fan, combine	110 dBA	30 minutes
Table saw, grinder, tractor	100 dBA	2 hours
Shop vacuum	98 dBA	3 hours
Lawn mower	90 dBA	8 hours
Idling tractor	85 dBA	Damage can occur if exposure >8 hours

Preventing Hearing Damage

- Always use hearing protection (i.e., acoustic ear muffs or ear plugs) when working in an environment where noise levels are continuously at about 90 dBA or higher.
- Warning signs for overexposure to noise include ringing in the ears (called tinnitus) and temporary loss of hearing sensitivity (called temporary threshold shift).
- Select and use hearing protection with an appropriate noise reduction rating (NRR) to reduce ambient noise to below 90 dBA.
- Be aware that the manufacturer's NRR was derived under ideal conditions and therefore, a more realistic rating for use in the field is about one-half the manufacturer's NRR.
- Hearing protection worn incorrectly may not adequately reduce noise exposure.
- Cotton balls do not effectively provide hearing protection.
- Noise levels follow the inverse square law and can be reduced by 25% if you double your distance from the noise source (i.e., moving from 5 to10 feet from a 100 dBA source will reduce the noise level to 75 dBA).

Garden Club of Colusa County activities

No meeting in June or July
St. Stephens Church
Colusa
6:30 pm

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Additional Links

Integrated Pest Management	ipm.ucanr.edu
UC Davis Arboretum	arboretum.ucdavis.edu
Invasive Plants	www.cal-ipc.org
Plant Right	www.plantright.org
Save Our Water	saveourwater.com
California Garden Web	cagardenweb.ucanr.edu
McConnell Arboretum and Botanical Gardens	turtlebay.org
UCANR Colusa County	cecolusa.ucanr.edu
UC Master Gardener Program (statewide)	mg.ucanr.edu
California Backyard Orchard	homeorchard.ucanr.edu
ANR publications	anrcatalog.ucanr.edu