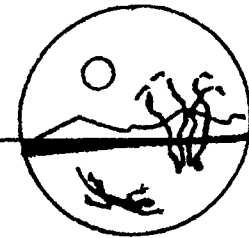


# High on the Desert

Cochise County Master Gardener

## Newsletter



The University of Arizona and U.S. Department of Agriculture cooperating.

### WATER!

This article was inspired and brought to you by a surplus of water, lack of winter rainfall, and a kitchen faucet. Our kitchen faucet recently sprung a leak, a slow drip that came out approximately every five seconds. Curiosity made me place a measuring cup in the sink to catch the water. In a span of six hours 1 1/3 cups of water was collected. So, in a 24-hour time frame I was losing 5 1/3 cups of water. The faucet was duly taken apart to check the washer, which was most likely the culprit. It was, and so the faucet was reassembled and a trip to the local hardware store was in order.

Unfortunately, in the meantime the leak became worse and 2 gallons of water was then being collected every 24 hours! What to do with all this water? I watered all the indoor houseplants, filled up the dog water dishes repeatedly and stored as much as our little refrigerator could hold. When the house was "fully

hydrated" I began looking outside. I watered the outdoor container plants, filled the birdbaths, watered the herb beds, and then the unthinkable happened! I had too much water and no where to use it!

Three dollars for two washers solved the problem. Only one washer was bad and since it was a good possibility that the other washer was on its way out too both washers were replaced.

To see the differences in rainfall totals in the county, I asked three Cochise County Master Gardeners for their 1998 stats. It's an interesting comparison and I am

amused to note that my monthly totals (home office Hereford) shows no rainfall from April to June. For the past three years I've been busy conducting my world-renowned scientific tests (see the Nov & Dec '98 issues for "The Grand Experiment" results). Testing consisted of planting veggie seeds every two weeks from mid-April to the end of July. The results were those veggie seeds planted in mid-June to the end of July excelled over the April to mid-June plantings. No rainfall, in conjunction with the heat and hot drying winds that accompany this period, makes for rough gardening. My veggie garden is strategically placed near a galvanized metal shed in hopes that one day my husband and I will install a cistern system to collect and store harvested rainfall.

Here's how to calculate available yearly rainwater from your roof. Calculation formula is provided by courtesy of Brad Lancaster. I will be using the dimensions of my shed as an example:

*(Continued on next page)*

1998 Rainfall Totals	Town & County Sierra Vista	Moson & Ramsey Hereford	Zacatecus Canyon Bisbee
Jan	Trace	0	0
Feb	1.5"	1.7"	3.57"
Mar	.7"	.4"	1.0"
Apr	.1"	0	1.0"
May	0	0	0
Jun	0	0	.5"
Jul	6.1"	6.0"	4.1"
Aug	2.6"	2.8"	1.85"
Sep	.55"	.7"	.6"
Oct	0	.7"	.9"
Nov	.45"	.5"	1.2"
Dec	.3"	.5"	.4"
TOTAL	12.65"	13.30"	14.82"

### Cochise County Cooperative Extension

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1. Calculate the catchment area of the roof by measuring the length and width of the building covered by the roof and multiplying WIDTH X LENGTH = AREA. (20 feet by 30 feet so  $20 \times 30 = 600$  square feet)

2. Find the AVERAGE YEARLY RAINFALL IN FEET

(As an average and to be conservative I'm using 12 inches which equals 1 foot)

3. Calculate the cubic feet of water from the roof by multiplying ROOF AREA X FEET OF RAIN PER YEAR

(600 square feet X 1 foot rain per year = 600 cubic feet of runoff per year)

4. Convert the cubic feet of runoff to gallons by multiplying CUBIC FEET PER YEAR OF RUNOFF X 7.5 GALLONS/CUBIC FOOT OF WATER

(600 cubic feet/year X 7.5 gallons/cubic foot = 4500 gallons per year)

So I could be collecting 4,500 gallons of water every year just off my shed for irrigation. Thoroughly interested now, I calculated the rainwater I could harvest off the roof of my house and it figured to a whopping 6,930 gallons! This makes a combined total of a staggering 11,430 gallons of possible water harvested every year!

Imagine what could and would happen if businesses, developers, and homeowners harvested rainfall to irrigate our gardens, golf courses, and landscapes with, or redirected this rainfall into detention basins allowing water to soak back into the ground instead of letting it run off properties, parking areas, and streets. This is potentially a whole lot of water to put back into the aquifer—leading perhaps to a peaceful existence among ourselves, the flora and

fauna, and a little gem of a river called the San Pedro.

Let's harvest our rainwater!

*Cheri Melton, Master Gardener*

## *Water Harvesting Workshop*

**Saturday, April 3  
9:00 am - noon**

U of A Sierra Vista Campus  
Plant Sciences Center

Construction of a 55 gallon barrel water-holding system to collect water off of a 10' x 20' shed will be demonstrated. Bring drinking water and a hat. The UASV campus is located just past Cochise College on Colombo Drive. For more info call the Cooperative Extension

**Did you know . . .** Sixty to seventy gallons of water per day are used per person for kitchen, laundry, bathing, sanitary uses and other uses in the home?

## **Cuttings 'N' Clippings**

► Cochise County Master Gardeners Association will meet March 3 at 5:00 pm at the Sierra Vista Library. Please call the Sierra Vista Cooperative Extension Office to find out which room.

► The 6<sup>th</sup> Xeriscape Conference will be held in Albuquerque, NM on March 5-6. The conference is sponsored by the Xeriscape Council of New Mexico and key

speakers include Ken Ball of Denver, Jim Knopf of Boulder, and Judith Phillips of New Mexico.

For information see:

**<http://www.xeriscapenm.com>**

► Kazzam Nature Center, 348 Naugle Ave., Patagonia is having their 7<sup>th</sup> Annual "The Hummers are Coming Sale!" For the entire month of March, all hummingbird feeders, along with anything with a hummer in it or on it, is on sale. For more info call Kazz at 394-2823.

► Tohono Chul Park, 7366 N. Paseo del Norte, Tucson, is holding their Spring Plant Sale March 13-14. Specialties are plants for dry climates and plants for hummingbirds and butterflies. The Museum shop carries gardening books, wind chimes, garden sculpture and much more! Call 742-6455 for info.

► Tucson Botanical Gardens will be having their Spring Plant Sale March 20-21. For times and info call 326-9686.

► The Sierra Vista Area Gardeners Club will be visiting Singing Winds Book Store in Benson on March 5. Guest speaker for the March 18 meeting at the Sierra Vista Library is Chuck Messenger from Thunder Mountain Bonsai. Meeting time is 2:00 - 4:00 pm. On March 25 there will be a field trip from 10:00 am - noon along the San Pedro River with Mimi Kamp. For info call Winnie Dill at 456-1437.

► Desert Survivors, Tucson, will have their Spring Plant Sale on March 26-28. For info call 791-9309.

► Diamond JK Nursery has moved next to Eagle Milling in Sonoita. Bare root fruit trees arrive the first week of March and the Spring Plant Sale will be April 1-4. Contact Jim Koweek at 455-9262 for hours and more info.

## What to do - - - March

**Prune roses:** We advised you to hold off on pruning your rose bushes in February because of the unseasonably mild temperatures intermingled with an occasional bout of legitimate winter weather. Even though there is still a chance for frost, the trend from now on will be toward warmer soil temperatures and an end to whatever dormancy your rose bushes have enjoyed. The Cooperative Extension has a pamphlet on *Roses for Arizona*. Call either office for a copy.

**Plant seeds indoors:** Starting your seeds indoors will give them a headstart on the spring growing season while protecting them from late frosts. It also helps satisfy that powerful urge to get our hands into gardening brought on by warm spring days.

**Check cactus for fungus:** Cacti have few natural enemies, but when they strike, it is difficult to stop them. One of the worst problems is Black Fungus, affectionately known as "creeping cholla crud." As the name implies, it generally attacks members of the cholla family, spreads easily, and is extremely unattractive. The treatment is to remove all infected parts as well as any pieces of fungus that have fallen to the ground, and to treat the cactus with sulfur. Unfortunately, by the time the fungus appears on the outside of the cactus, extensive damage has already been done to the internal structures. Keep treating with sulfur and hope for the best, or pull out the entire plant and start over.

**Plant cool-season vegetables:** If the urge to plant outdoors is irresistible, go ahead and plant some cool-season vegetables such

as lettuce, cauliflower, carrots, broccoli, and beets in your garden. Be prepared, however, to give the young plants extra protection on the cold nights that still occur in March and early April.

**Reconsider you water usage:** Plan ahead to take advantage of the wonderful summer rains to come in July. Examine the water drainage in your landscape. Are there ways you can take advantage of roof runoff? Should you consider a drip irrigation system to get your garden through the hot dry months? Do your trees and shrubs have water basins out to their drip lines for deep watering in May and June? Does rain water run right off your property, away from your plants and into the street? (Call the Cooperative Extension and ask for Cado and a free *WaterWise* audit.)

**Remove winter mulches:** Rake off any winter mulches you put around your plants at the end of this month. Be sure to bag or compost it to get rid of any insects that may be overwintering there.

*Jackie Dillon-Fast  
former Cochise County Master Gardener  
(Reprinted from the Cochise County  
Master Gardener Newsletter, March  
1990)*



Cochise County Master Gardeners Association has several designs of *High on the Desert* t-shirts, water probes, and *Desert Landscaping* CD-ROMs for sale. Contact the Sierra Vista Cooperative Extension Office if you are interested.

## *High on the Desert*

Thanks to all the dedicated volunteers of the Cochise County Master Gardeners Association, our 6<sup>th</sup> Annual High Desert Gardening & Landscaping Conference was wonderfully successful! This year's conference brought just over 180 attendees and presenters from Arizona, Texas, New Mexico, Oregon, and even Wisconsin! From all reports everyone had a great time and learned a lot!

A very special thank you to our wonderful speakers—all 22 of them!

I especially want to thank the **Committee Chairpersons\*** and members who gave so much of their time, energy, and talents: **Rob Call\***, Extension Agent who arranges the incredible program each year, Elisabeth Baker, **Alice Christ\***, Frank Christ, Cado Daily, Gwin Garcia, Jan Groth, MC, **Gary Gruenhagen\***, Registration, Janet Jones, Cathy Kahlow, **Barbara Kuttner\***, Sponsorship, Diane Levine, **De Lewis\***, Facilities, **Cheri Melton\***, Publicity, Maxine Walker, Kathy Yancey, and **Joyce Williams**, Secretary, Cooperative Extension, Sierra Vista, who does SO much for us!

Also, special thanks go to our **Sponsors:** Arizona Community Tree Council and Bella Vista Water Company:

**Program Advertizers:** Ace Garden Place, Sierra Vista, Arizona Nursery Association, Arizona Gardens, Hereford, The Bindery, Hereford, Bisbee Therapeutic Massage Associates, Bisbee, Chulo Canyon Seeds, Bisbee, Friends of the San Pedro River, Inc., Safeway, Sierra Vista, San Pedro Growers, Benson, Southwest Desert Images, Sierra Vista, Southwest Gas Corporation, Sierra Vista: (Continued on next page)

**Exhibitors:** Chulo Canyon Seed, Bisbee, Desert Trees Nursery, Tucson, Diamond JK Nursery, Sonoita, Kazzam Nature Center, Patagonia, CME Espial, Sierra Vista, Mountains States Wholesale Nursery, Litchfield Park, and The University of Arizona Bookstore, Sierra Vista:

**Non-Profit Exhibitors:** Cochise County Hydrologist, Hereford National Resource Conservation District, San Pedro House, Sierra Vista Garden Club, Tohono Chul Park, Tucson, Nature Conservancy, Ramsey Canyon Preserve, Tucson Rose Society, U.S. Forest Service, *WaterWise*, and Waste Reduction & Recycling:

**Door Prize Donors:** Ace Hardware, Sierra Vista, Arizona Cactus & Succulents, Bisbee, Arizona Gardens, Sierra Vista, Arizona Soaps, Benson, Bisbee Therapeutic Massage Associates, Bisbee, Bookman's, Sierra Vista, Bordiers Nursery Inc., Irvine, CA, Chulo Canyon Seed, Bisbee, Cochise County Master Gardeners Association, Cottage Gardens Nursery, Benson, Courtney Dyer, Sierra Vista, DeForest Lewis Family, Sierra Vista, Desert Trees Nursery, Tucson, Desert Botanical Gardens, Phoenix, Diamond JK Landscape Co., Sonoita, Friends of the San Pedro River, Sierra Vista, Gilbert Mills, Sierra Vista, Kazzam Nature Center, Patagonia, CME Espial, Sierra Vista, Monrovia Nursery, Azusa, CA, Mountains States Wholesale Nursery, Litchfield Park, Nagase Brothers, CA, Patio Pools, Sierra Vista, Ramsey Canyon Nature Preserve, San Pedro Feed & Hardware, Hereford, San Pedro Growers, Benson, San Pedro Valley Ace Hardware, Benson, Sew What?, Sierra Vista, Spadefoot Nursery, Pearce, Sulphur Springs Valley Electric

Cooperative, Sierra Vista, Susan Smith, Sierra Vista, Talking Drum Gourds, St. David, Tohono Chul Park, Tucson, Tucson Botanical Gardens, *WaterWise*, Sierra Vista, Whetstone Pottery, Whetstone, Willow Creek Greenhouses, and Willow Elliot, Bisbee.

A special note of thanks to Dolan Ellis, Arizona's official state balladeer, who graciously entertained us with his music and songs!

**Thanks to all of you!  
You made it happen!!!**

*Carolyn Gruenhagen  
1999 Conference Coordinator*

## The Agent's Observations

**Q** I have heard that there are products that you can spray on fruit trees to keep them from blooming too early and avoid spring frosts. What is the product and how does it work? With the abnormal warm weather we are having fruit tree buds are swelling and blooming.

**A** I do not know of any such product. I completed my Master's Degree searching for and applying compounds that might delay spring time blossoming. With high rates, 5 - 10%, of dormant oils applied in February and March I was able to delay bloom by eleven days during each of the two seasons of trials under "normal" climate conditions. These oils decrease the absorption of oxygen, thus slowing flower bud metabolism, and delay bloom. Hopefully this would avoid late spring freezes.

Fruit trees have two distinctive periods during their dormant

period. The first is called rest and the second growing degree hours accumulation. To complete rest fruit trees have to experience "chill hour" temperatures between 32 and 60°F after leaf fall. Temperatures above this range cause chill hours to be lost. For example 'Elberta' peach needs 800 chill hours; 'Tilton' apricot-720; 'Bartlett' pear-1,210; and 'Delicious' apple-1,234 hours to complete rest. If rest is not completed, forcing flower buds to grow will not occur. After rest is completed "growing degree hours" (GDH) are accumulated. This is the second period of dormancy. Each day with maximum temperatures above 41°F and minimums temperatures above 13 °F, GDH are accumulated. So when 'Elberta' peach receives 9,210 GDH; 'Tilton' apricot-7,400 GDH; 'Barlett' pear-10,160; and 'Delicious' apple-12,480 GDH, full bloom occurs. To slow fruit tree bloom air temperatures need to be cooler. I do not know of any product that will do this other than climate control growth chambers. The control mechanism is not known at this time even though years and years of research efforts have been made by many people. Perhaps the dormancy of fruit trees is controlled by hormones or an enzymatic systems but no one knows. Plants still hold many mysteries that have yet to be solved.

*Robert E. Call  
Extension Agent, Horticulture*

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Robert E. Call  
Extension Agent, Horticulture

Carolyn Gruenhagen  
Editor

# THE VIRTUAL GARDENER=

## Weed Warrior

Listen up troops! Just because the dry weather messed up the spring weed invasion doesn't mean there won't be a summer invasion. Since summer will soon be upon us, now is the time to start drawing up our battle plans to meet the threat. As the ancient Chinese military philosopher, Sun Tsu, wrote, "If you know the enemy and know yourself, you need not fear the result of a hundred battles." This month we will learn a little more about our enemy, The Weed, so we can be better prepared for the battles to come.

What is a weed anyway? If we can't identify the enemy, we run the risk of fratricide-inflicting casualties on friendly forces, so it's important to be able to recognize the foe. While there are many technical definitions developed by rear echelon types, the best definition for us foxhole types is that a weed is a plant out of place. If we get crab grass in our rye grass, we've got plants out of place. Weeds! Weeds are sneaky guerrilla fighters who infiltrate our lawns and gardens, making them unsightly, stealing precious resources from friendly plants, and harboring insects and diseases that may damage friendly plants. Weeds must be destroyed to make the world safe for democracy...and tomatoes, and petunias, and...you get the idea.

Weeds, like other plants, can be divided into three major categories—annuals, biennials, and perennials—each with a separate bag of tricks to defeat our efforts to destroy them.

The annuals, as the name suggests, are plants that go through a complete life cycle in a year. That means that they grow from a seed, develop flowers, produce new seeds, and die all within the space of a single year (or growing season). These are the most unsophisticated of the weed enemies we face. Defeating them is simply a matter of interrupting their life cycles by destroying them before they have a chance to produce a crop of seeds. They are most vulnerable when they first emerge as seedlings. At this time they are living off the food stored in the endosperm and must develop a capability to manufacture food on their own before the stored food supply is exhausted. If they manage to survive to adulthood, you must eliminate them before they go to seed or you will be faced with more of them in the following year.

Weed seeds are insidious. Once in the ground, they can lie dormant for long periods of time, waiting for just the right conditions before they germinate. Germination is usually controlled by some combination of heat, moisture, and light.

Like all good guerrilla fighters, weeds, are well adapted to the local environment and their seeds can often lie hidden for many years waiting to strike. This means it is much easier to control annual weeds by not allowing them to go to seed in the first place.

Like the annuals, most biennials propagate themselves by seeds. Unlike the annuals, they take two growing seasons to reach the stage of maturity that allows them to produce seeds. In order to survive the winter between growing seasons, they usually store food and energy in their roots. The practical implication of this for us as weed warriors is that the roots of these plants are usually much larger than the roots of annuals and they are more difficult than annuals to destroy by pulling or cutting. Because they reproduce by seeds, our basic strategy for controlling biennials is basically the same as for annuals—interrupting their life cycles.

The perennials are the most dangerous of our weed enemies. These plants are long-lived and have many different strategies for propagation and survival. They may propagate by producing seeds or spread by sending runners on the surface or roots underground which can create daughter plants. Some use all three of these means. Because of their multiple methods of attack, these weeds are very difficult to eradicate mechanically.

The best example of a very

*(Continued on back page)*



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difficult weed to control is Bermuda grass which spreads by all of the means described above. These weeds may force us into chemical warfare!

To assist us in recognizing our wily weed foes, we warriors must use references. One very useful reference published by the University of Arizona Press is *An Illustrated Guide to Arizona Weeds* by Kittie F. Parker which gives a brief discussion of many common weeds and shows what they look like in wonderfully detailed line drawings. Unfortunately the book is out of regular print, so what's a poor warrior to do? Fortunately for those of us with

Internet access, the University of Arizona Press has digitized the entire book and placed it on their Web site. The URL is: <http://www.uapress.arizona.edu/online.bks/weeds/titlwweed.htm>.

Next month we will begin looking at some of the tactics and weapons used in the fight against our weed foes. Until then, happy surfing.

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*Old gardeners never die — they just go to pot!*

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