



High on the Desert Cochise County Master Gardener

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Gardener's Heaven

When my husband and I decide to take a vacation we think of gardens. The book, *Beautiful Gardens—A Guide to over 80 Botanical Gardens, Arboretums and more in Southern California...*, has a mouth-watering offering of the exotic and native. Based on this, we decided to check out a selection of gardens in the coastal sections of San Diego, Orange, Los Angeles, and Ventura counties.

Quail Botanical Gardens in Encinitas was the first and our favorite of the public gardens as it spanned the gamut with 16 botanic areas and 10 demonstration gardens from tropicals like bananas requiring water, heat, and humidity to the drought tolerant plants of the Southern California chaparral of which *Salvia clevelandii* is our favorite. There is admission charged to the garden but the docents make it well worth the money. We also found that their plant shop offers selections of Eriogonum, Lantana, Salvia, and Penstemons which are appropriate for our climate at terrific prices. We got 4" sizes on sale 3 for a

dollar. Even the regular prices for some of the rarer cultivars had us packing the truck on our first day out.

Based on docent information gathered at Quail, we set out to visit commercial nurseries the second day. Exotica in Vista is just what the name implies featuring rare fruits and plants from around the world. What is even better in the fall is that many are fruiting and they let you sample. Acerola (Barbados Cherry), Figs (18 varieties), Guavas, Jujube, Passion fruit, and Sapotes were about half of what they had on the tasting table. With 4+ acres of closely planted jungle you can spend half a day wandering and looking. Labels were sometimes absent, but the staff offered information, time, and a bag full of avocados for us to take away. Although some of the plants were wonderful varieties we could raise in Cochise County, most were in larger sizes. Isis, who lives on site and helps run this nursery sent us to Clausen Nursery just up the road.

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Despite the fact that Clausen Nursery supplies standard citrus and low chill deciduous trees to Home Depots in So. Calif., the owner, Gordon Clausen, met us and showed us around pointing out the more exotic citrus and trees he produces on one of the three family owned nurseries in the area. After an hour of talk, he climbed his "Suebelle" white sapote and picked us a sack full of sapotes. Of course, we had to buy a "Buddha's Hand" citron and a "Meiwa" kumquat to grow in pots in our courtyard so we can enjoy the orange-blossom scent and rare fruits these two offer. Again we were astounded by the low prices. We got dwarf citrus in 5 gal. size for only \$15! If I only had the indoor space to overwinter a dozen of these little charmers.

Our fourth stop was Las Pilitas Nursery which specializes in California natives including dozens of manzanitas, some of which will take our winter temperatures. She also offers cultivars of my favorite *Salvia-clevelandii*; Winifred Gilman (semi-dwarf) and Alan Chicker-ing (larger, darker flowers). Another apparent speciality is in the grasses and sedges which are offered in abundance. This nursery is more utilitarian and drier in keeping with the types of

plants offered. The manager, Valerie Phillips, spent a great deal of time talking plants and looking up hardiness for those which interested us. She suggests visiting their web sites which lists over 2000 plants with information at www.laspilitas.com

That was just two days in San Diego County.

The other dozen gardens and nurseries we visited varied from "don't bother" at UC Irvine's Arboretum which was poorly maintained and poorly labeled, to "must see" Sherman Library and Gardens and Roger's Nursery both in Newport Beach which were spectacularly beautiful and well kept. Nowhere did we find the combination of plants and people which made the San Diego area gardens noted above our favorites. All four of these gardens will do special tours for groups. Anyone interested?

Joyce Gay
Master Gardener Associate

Cuttings 'N' Clippings

☞☞ Cochise County Master Gardeners Association (CCMGA) next meeting will be October 2 at 5:00 at the Sierra Vista library. The scheduled speakers are Marie Hansen and Jim Herriwig from the City of Sierra Vista's Crack Water Management Team.

☞☞ The *Water Wise* lecture series continues on Saturday, Oct. 5. The presentation will be *Greywater in the Landscape* by Cado Daily, *Water Wise* Conservation Educator. The free lecture takes place at the University of Arizona South, 1140 N. Colombo, Sierra Vista at 9:00 a.m.

A Great Fall Xeriscape Tour!

This fall's tour was a smashing success. There are many people to thank for making this tour so successful. To start, without the 145 or so folks who attended, it would have been a bust! This year the homes were located in the foothills of the Huachu-cas to demonstrate how grasslands can be incorporated into a landscape. There is always something to learn from the tour, and I hope that attendees went home with new ideas on how to be water conserving while having a landscape they enjoy.

Thanks to a newly formed Xeriscape Tour committee, not only was it a lot easier for all, due to extra hands (and ideas!), but a lot more fun. Cochise County Master Gardener Association President and arborist De Lewis started out the morning with a *Water Wise* workshop, "Planting Techniques" which was attended by 80 satisfied people at the UAS campus. After the session, everyone was turned loose to visit the four landscapes.

Committee members worked on the many details involved with putting on the tour—from choosing landscapes to identifying plants, making tags, plant lists, publicity, and coordination of site preparation with docents and hosts.

A big "thank you" goes out to the hosts (you know who you are!), committee members and docents: Deke and Peg Descoteaux, Edna Weigel, Judy Darby, Barbara Kuttner, Diane Levine, Shelley Davis, Charlie Narburgh, Anita Gollwitzer, Emily Boyd, Joyce Gay, Pat Walton, Cathy Stuckey, and Lorraine Groberg.

If anyone would like to be a part of this committee, please get in touch with me at 458-8278 x 2139. P.S. It is a great way to earn MG hours!

Cado Daily
Water Wise Program Coordinator



Robert E. Call
Extension Agent, Horticulture

Carolyn Gruenhagen
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The Virtual Gardener—Drought

As I write this the 2002 monsoon season has five days to go, and by the time you read this it will be officially over. At the risk of being sandbagged by Mother Nature during the next five days, I will go out on a limb and say it was a pretty wimpy monsoon. We here in Sierra Vista had only about 80 percent of our thirty-year average monsoon rainfall and other locations around the county did even worse (see the table below).

These numbers got me to thinking about the drought... specifically, what is a drought anyway? Whenever I'm faced with a question like this the place I first turn to for an answer is...you guessed it...the Web.

I was surprised to find out that there really is no universal agreement on a definition. Everyone agrees that drought occurs when there is less than normal precipitation, but the definitional devil is in the details. How long does a dry spell have to last in order to be called a drought? When do you declare drought to begin? When do you declare it over? If you think these to be strictly academic arguments, think again. Governments all around the world spend billions of dollars giving aid to drought-stricken areas and they need to have a good definition to work from. To say that there is no

universal agreement on a definition doesn't mean there is any shortage of definitions.

Some define drought in terms of hydrology—stream flows, reservoir and lake levels, and ground water levels. Defining drought in hydrological terms has the advantage of being objective, but it's kind of like recognizing that there's a problem with the horses when you discover the barn door open. Dry conditions have to have persisted for a long time before they show up in the hydrology. Additionally, hydrological changes are not only caused by the weather. Human activities can also have an impact. Those of us in the San Pedro basin should be well aware of this.

Others define drought in terms of agriculture. By these definitions, drought occurs when plants are water stressed for lack of soil moisture. Again, this definition is objective but it has some problems. First, it may only reflect a local and short-term problem such as a few extra days between storms. Second, plants respond to moisture deficits in different ways depending upon the stage of growth. If hydrological definitions run the risk of declaring drought too late, agricultural definitions run the risk of declaring drought too early.

And finally, some define it in meteorological terms. Drought



occurs if precipitation falls below the long-term norms by a certain amount. Definitions of this type are intuitively easy for people to understand and are most frequently used by TV weathermen. But meteorological definitions also have their problems. They are very location specific and become more challenging to formulate when precipitation is seasonal rather than uniformly distributed throughout the year.

If you would like to learn more about drought, point your browser at www.drought.unl.edu/whatis/concept.htm

Next time we will look at drought indices and how they are calculated. Until then, Happy Surfing!

Gary A. Gruenhagen, Master Gardener
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October Reminders

- v Be ready for the first frost
- v Thin the seedlings
- v Overseed lawns
- v Plant spring bulb
- v Divide perennials
- v Don 't let weeds go to seed

Location	30-Year Average (in)	2002 Monsoon (in)	Percent of Average
Sierra Vista	8.53	6.92	81
Willcox	9.39	3.96	42
Douglas	8.28	4.60	56

Monsoon Rainfall for Selected Locations in Cochise County

Creating a Wildlife Habitat Garden—Basic #4—Places to Raise Young

Our garden has been host to many young to include Cactus Wrens, Gambel's Quail, Curved-bill Thrashers, Canyon Towhee's, Ladder-backed Woodpeckers, Black-chinned Hummingbirds, Western Kingbird, Desert Cottontails, Round-tail Ground Squirrels, Gopher and Garter Snakes, Horned Toads, and over 15 species of butterflies.

More importantly is the host of insects in the garden—Chris and I have fun every evening watching parent birds scour the garden and bring insects to their young. As a result I do not have any problems with so-called pests and never had to spray the garden.

BIRDS

Birds build nests in many places—on the ground, in trees and shrubs, and even in man-made structures. A really good book on bird nests is *A Guide to Southern Arizona Birds Nests & Eggs* by Pinau Merlin. Although it is a field guide to ID'ing nests and eggs many of the details are invaluable. It covers:

- ? Nest shape and material (you'll be surprised at how many use our native grasses—time to toss out the gravelscapes!)
- ? Habitat and location
- ? Eggs and nesting period
- ? Natural history of the bird
- ? Diet and feeding

HUMMINGBIRDS

Females build, incubate, and raise the young on her own—nests are made out local materials such as downy fibers, animal hair, plant materials and nests are woven together with spider webs—spider webs are very important to hummingbirds!

BUTTERFLIES

Butterflies are cool to watch in the garden. Their life cycle is called complete metamorphosis. Successful butterfly gardening requires planting a garden that supports all phases of the butterfly life cycle.

-
- adult (butterfly) ? egg (mating) ?
 - caterpillar (larva) ? chrysalis (pupa)
 - ? adult (butterfly)
-

To attract butterflies to your garden plant host plants. The females main purpose in their short life is to find mates and lay eggs onto host plants. If all you have is nectar plants they will come visiting to fuel up for energy but will be on their way looking for plants to lay eggs on. Butterflies use their two antennae to detect chemicals to lay eggs on as well as find mates and avoiding predators. The feet of butterflies are used to taste. This is important for the females as they must accurately locate specific host plants for egg laying. Consider the following life spans of the butterfly:

- ? Average lifespan for an adult butterfly—2-3 weeks
- ? Average lifespan for the egg—4-10 days
- ? Average lifespan for the caterpillar—3-4 weeks
- ? Average lifespan of the chrysalis— 7-14 days

Most butterflies spend most of their life cycle in the egg, caterpillar, chrysalis stage rather than the adult stage! Don't deprive yourself of the pleasure of locating these four stages in your habitat garden.

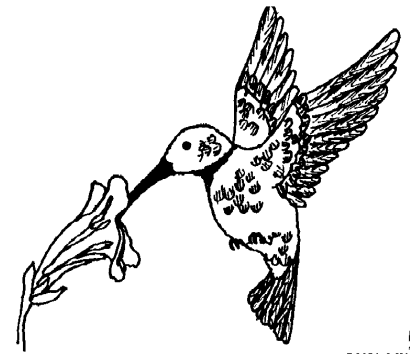
When the habitat garden is complete you will see other wonderful and perhaps unsettling things happening. One is there will be predators—everyone has to eat—including

humans—but don't be dismayed when you see that roadrunner eat that young bird or lizard or the owl prey on mice and rats. When this happens be proud that your garden has come full circle and is a complete habitat garden.

If you have any questions on habitat gardening please contact me at planthoe@earthlink.net. I'll answer your questions in upcoming issues of the Master Gardener Newsletter.

Next month: my favorite resources.

Cheri Melton
Master Gardener



Cheri's "What To-Do" List

October in the High Desert is beautiful and my favorite month!

- ? There is still time to plant. The cooler soils and air temperature allow plants to set roots before the searing heat of spring.
- ? Watch for migrating monarchs returning to their wintering sites.
- ? This is a great time to just sit back, relax and enjoy the October weather and garden.

The Agent's Observations

Q I planted quite a few tomato and pepper plants this spring and they have not produced very many fruit. They have not looked healthy all season long. The upper leaves are drying out and others have brown spots on them. What is happening?

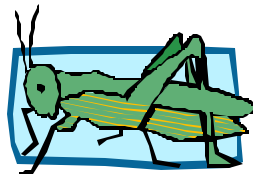
A Upon examination of the infected plants the roots showed signs of nematode feeding. Soil nematodes are microscopic "soil worms" and several species feed on plant roots. Others feed on the plant feeding nematodes. Nematodes are more abundant in sandy soils. As they feed on root tissues knobby and misshaped forms appear. This disrupts the flow of water and nutrients to the leaves and causes the browning and drying out that was observed.

Control: Few if any effective chemical controls are available for homeowners. However, a heat treatment will decrease their numbers for a few years and help control them. Till or double-dig moist soil well. Place a clear sheet of plastic over the tilled area. Bury the edges of the plastic with soil. As the sun warms the soil it will cause steam to heat the soil. This is called "soil pasteurization." Other disease causing organisms and weed seed can also be decreased using this method. Leave the plastic in place for four to eight weeks depending on the time of year—longer in the spring and fall, shorter in summer. You can treat sections of your garden so that plastic is not

covering the whole area, preventing planting.

Q I have a lot of grasshoppers in my yard. They are eating everything! How can I control them?

A In Cochise County we have several species of grasshoppers, some are very colorful and grow quite large. Grasshoppers emerge in the spring from eggs laid last year. Grasshoppers hatch as miniature adults and molt 5 or 6 times during a period of 40 to 60 days. The young feed in the immediate vicinity and then move on to "greener pastures" as food sources become depleted. Adults begin laying eggs shortly after they mature. Eggs are laid in the ground in pods that



contain 15 to 75 eggs. A female can lay a total of 200 to 400 eggs during several weeks. Hatching rate depends on soil temperature and moisture and may continue for 3 months. Some species have more than one generation per year. Grasshoppers feed on grasses and other plants. When populations increase they will feed on nearly any kind of vegetation including bark and leaves of deciduous trees. Adults continue to feed until cold weather kills them. Natural weather cycles cause fluctuations

in populations. Mild winters and warm dry springs increase hopper populations. Cold wet weather cause slow development and favor grasshopper diseases. Cool summers and early falls delay maturity and decrease the egg laying period.

Control: If desert surrounds your property it can become very difficult to control grasshoppers because of large populations that can become migratory. Disturbing egg pods in the soil by tilling or plowing will expose egg pods, decreasing their viability. Young small hoppers are easier to control than adults. "Picking and squashing" is a time consuming but effective control measure and is best done in the early morning when cooler temperatures slow the insect's metabolism. Perhaps one could use a tennis, badminton or squash racquet and practice forehand and backhand swings! Several chemical insecticides will control grasshoppers as well as the abrasive nature of diatomaceous earth. *Nosema locustae* is a naturally occurring disease organism of grasshoppers. Bran and sweeteners are added to *Nosema* to attract the hoppers. Grasshoppers are cannibalistic and infection spreads as healthy hoppers eat sick ones. Also the females pass this disease on to future generations through laid eggs. *Nosema* will take longer to decrease grasshopper populations than conventional pesticides, with the best treatments reducing the population 50% each year. Also, to

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Preparing Your Houseplants for the Winter Indoors

As the water garden season slowly comes to an end, even if there is a lot more to be said about it, I will address another of my hobbies: houseplants. If you are like me and give your houseplants a summer vacation outdoors, it is time to prepare them for the winter indoors. Conditions in your house are very different from that outdoors. The humidity is a lot lower and there is less good light in the house. It helps to move your plants slowly into their new environment to reduce stress. Plants you grow outdoors in full sun should spend some weeks in a more shady location. Plants, which grew in a shady spot, should spend some time under your porch roof or be taken inside for a few hours a day. I

know that it is not always practical—who has the time? If your plant has grown a lot this summer, it is good to cut it back to promote new growth. The plant will adjust better to life in the house. Very important is to check your plants for insects. What wasn't a problem outdoors can be a major disaster indoors. It helps to wash your plants well with tepid (lukewarm) water and in severe cases with soapy water*. Try it first on some leaves to make sure it doesn't burn your plant. Most plants rest during the winter month, cut back on the watering and the fertilizer.

***To make soapy spray:**

Use a quart of tepid water, half teaspoon of dishwashing soap (no lemon added) a few drops of cooking oil.

Angel Rutherford
Master Gardener

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be effective large areas must be treated—several acres are best. This is a living organism and must be stored in the refrigerator with a limited shelf life. Contact your local nursery or garden catalog for current recommendations. **Always read the label of pesticides and use them accordingly.**

Source: *Insect Pests of Farm, Garden, and Orchard*. 1979. R. H. Davidson and W.F. Lyon. pp. 117-119.

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