High on the Desert Cochise County Master Gardener Newsletter

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

# Watering—When and How

Okay—warm weather season is here and the most common question asked is how often and how long should the gardener water. Factors affecting plant water requirements are plant type, plant maturity, soil type, season/climate, microclimate/ exposure, and soil cover/mulch. The only way I know how to determine irrigation frequency (when it is time to water) and duration (how much water to apply) is to use a soil probe. A soil probe is a ¼ to 3/8 inch diameter metal rod that is at least three feet long with a pointed end. I prefer a soil probe that is four feet long so I can tell if I've over-watered. Probe the garden for one year, use a rain gauge to track rainfall totals, and record the results in a garden diary or calendar. You will become much more knowledgeable on how your garden behaves and will be able to set up a tailored irrigation schedule to meet the needs of your plants not because the calendar says it's Thursday so it must be time to water again. Keep in mind that during the hot days some plants, especially those with large leaves, may droop or collapse their leaves. Don't assume that they need water. Look at the plants the following morning. If they are still droopy then water but don't be surprised to find them perky—plants often fold their leaves to reduce the amount of sunlight hitting them—a plant survival tactic.

**HOW TO DETERMINE WHEN IT IS TIME TO WATER:**

1. Push the probe into the soil around the drip line of plants as deep as it will go.
2. The probe will stop when it hits dry soil.
3. Measure the depth the probe has penetrated. A good rule of thumb is it's time to re-irrigate when 1/3 to ½ of the root zone is dry:
   - Turf, groundcovers, vegetables, annuals – irrigate when probe depth is 4-6 inches
   - Perennial flowers and shrubs – irrigate when probe depth is 8-12 inches
   - Trees (and very large shrubs) – irrigate when probe depth is 12-18 inches

**HOW TO DETERMINE WHEN ENOUGH WATER HAS BEEN APPLIED:**

1. Push the probe into the soil and measure the depth the probe has penetrated. Apply water using your usual irrigation method for one hour.
2. Wait for 30 minutes after irrigation then push the soil probe into the soil.

*(Continued on page 2)*

*Inside this issue:*



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3. Measure the depth the probe has penetrated. Subtract the before irrigation soil probe depth to arrive at the actual one hour irrigation penetration rate.
4. The proper irrigation depths for plants are:
   - Turf, groundcovers, vegetables, annuals – 12 inches
   - Perennial flowers and shrubs – 24 inches
   - Trees (and very large shrubs) – 36 inches
5. Once it has been determined how long it takes to wet the soil to the proper rooting depth, adjust the irrigation time, and water this same duration every time irrigation is required.

Ideally, separately valved irrigation lines should be installed for the following:

- Turf (12 inch irrigation depth)
- Vegetables (12 inch irrigation depth)
- Annual bedding plants (12 inch irrigation depth)
- Desert drought tolerant plants (plants are adapted to our climates – require less irrigation)
- Non-drought tolerant plants (plants are NOT adapted to our climates – require more irrigation)

Due to the different irrigation depths for both desert and non-desert plants, separate irrigation zones should be considered for:

- Trees and very large shrubs (36 inch irrigation depth)
- Perennial flowers and shrubs (24 inch irrigation depth)

It is very helpful to find out how deep one gallon of water will penetrate into the soil. I developed a "low-tech" soil penetration kit. It consists of a one-gallon drip emitter attached to a 24 inch long piece of ¼ drip irrigation tubing poked into the bottom of a one-gallon plastic milk jug. Fill the jug up with water, elevate it on a 5-gallon nursery pot and let the water drip onto dry soil in the garden area. In about 1 ½ hours go out and probe the spot. This is an easy way to calculate the approximate depth that one gallon of water will penetrate! You may have to do this at different sites depending on different soil structures at each site (*i.e.* compacted areas will be different from loamy vegetable gardens). You can do the math to determine how long to water to reach the appropriate plant rooting depths.

*Cheri Melton, Master Gardener*
*(Reprinted from the June 2005 Master*

## In a Desert Garden

Oenothera—Part II

*O. caespitosa*–White Evening Primrose grows in my garden. This plant is a short-lived perennial, but self-seeds itself freely. The white evening primroses are native to the Western United States. The clumps are low growing green fuzzy rosettes. The flowers are up to 4 inches in size, opening in the afternoon and fading towards midday from white to pink. The blossoms appear from spring to early summer.

In my backyard in a little bit more shaded area, I grow *O. hookeri*–Hooker's Evening Primrose. This plant is a true biennial, forming a green rosette of lance-shaped leaves one year and branching flower stems to 3 feet and more high, the next. The flowers open in the evening bright yellow, turning to orange as they fade in the morning. This plant is native to the Arizona canyons and needs a little more water than its cousins. It is best planted in an informal garden as it self-seeds freely. It is also best to give the plant afternoon shade. It is a stately plant with a long taproot. The taproot makes one think it would be hard to dig this plant up and transfer it, but I have tried it. It really looked bad after two days and I thought it died, I didn't water it anymore. About a week later, I noticed new growth and started to water again and it made it through—what a tough plant. This plant has edible seeds and is considered an herb by Native Americans.

I never know where plants will pop up. That is the beauty of letting a garden grow a little wild—the setting is very natural. I am lucky. I do not have any weeds in my garden because it is not a weed till I say it is a weed. The only thing I pull is desert broom and Russian thistle. Truthfully it is very seldom these pop up in my garden. My garden is graveled and gravel is a wonderful medium to germinate seeds. Over night the little stones give up just enough moisture to sustain plant life.

*Angel Rutherford, Master Gardener*

Angel will be teaching another Pond building and Maintenance Class at Cochise College:
June 3, 06 from 1:00 – 3:00 p.m.
June 10, 06 from 1:00 –3:00 p.m.
For more information and to register call 515-5446.

# Pollinator Garden at Rockhound State Park, New Mexico

(Editor's Note: This is the first of two articles that won scholarships for the authors to the 13th Annual High on the Desert Conference. Congratulations to Mary Kay Brady, NM Master Gardener! She and her husband attended the previous three conferences.)

In May of 2003, my husband, also a Master Gardener, and I were approached by a representative of New Mexico State Parks about creating a native pollinator garden at Rockhound State Park.

A selection of plants was made. The requirements were simple: native plants that produced seeds, nuts, berries, or nectar to attract wildlife. The Master Gardeners partnered with State Parks and the Deming Garden Club. The group evolved into a new public benefit non profit 501(c) corporation—The Friends of Rockhound State Park, Inc.

This group now hosts native plant sales in April and September each year. About 900 more native plants are now growing in Deming, Luna County from these sales. We teach a course about desert gardening at our local community college. The two hour session about using native plants is a favorite of the students because of the beauty, lower maintenance costs, and water conservation.

This garden has given us the opportunity for sharing with the general public good landscaping techniques, wise use of water (the garden has drip irrigation), and displaying the beauty of our native plants.

Our new residents are learning that more rocks and the obligatory cactus are not landscaping!

Our native plants provide food for bees, butterflies, moths, bats, songbirds, migratory birds, the occasional rabbit and javelina. Research has shown that 80% of our foods require pollination.

Sharing stories of the relationships between plant and animal is very rewarding; for example, agaves and the

lesser long-nosed bats, yucca and the yucca moth as well as the Yucca Giant Skipper butterfly.

The park guests of all ages are fascinated with this garden. How can someone not be interested in the chocolate flower after just one sniff plus knowing it is a nectar source for butterflies or that various grasses are host plants for butterflies?

We enjoy sharing the story of hummingbirds pollinating Claret Cup Hedgehogs when their foreheads get covered with pollens causing them to look like a totally different species! The cactus flowers stay open at night unlike many other species of cactus.

The Desert Honeysuckle provides a resting spot for many hummingbirds. The foliage provides good cover and protection from predators.

Our native Apache Plume is a favorite nectar plant for butterflies. A member of the rose family it has no thorns but adds a soft plume for winter interest.

White's Bee Brush provides nectar for bees that in turn create a wonderful honey for us.

False Indigo is a plant with beautiful small purple flowers with gold stamens. This plant provides beauty for us, nectar for butterflies and is good for caterpillars of Queens, Painted Ladies, and Gulf Fritillaries.

Western Virgin's Bower provides good cover and hiding places for many of nature's critters. The puffy white seed heads add interest to the gardens in fall and winter.

While we have reason to be concerned about the poisons of Sacred Datura, it is heavily scented to attract sphinx or hawk moths that are often mistaken for hummingbirds. It is also an alternative host for tomato hornworm.

A history lesson is available with Blue Flax. It was discovered by Meriwether Lewis on the Lewis and Clark Expedition in the early1800's. The plant itself is favored by variegated fritillary butterflies as a larval plant host.

Red Barberry with its holly-like leaves provide berries that are a fall favorite of birds.

Several penstemon varieties are available to hummingbirds. This plant is available in many colors to add landscape punch.

Brickelbush provides seeds that quail love to eat.

Many of our local pollinators prefer the Desert Willow nectar that provides seed pods in fall and is also a great shade rest stop.

We also have a Chihuahua Pineapple Cactus as a weatherman—Native Americans say once it blooms in spring there will be no more frosts!

We have recently added an Alkali Saltbush that is a favorite of the desert tortoise.

During a recent school group tour, one of the students remarked that the plants she had seen were the same as the plants she sees in her own backyard but she had no idea of their value to wildlife. This comment makes our efforts worthwhile!

The native pollinator garden will be a success only if we can supply host plants for caterpillars, nectar plants for adults, abundant sunshine, wet sand or mud puddles in shady nooks, shelter from high winds, and an environment kept healthy through the absence of insecticides.

The opportunity given us is priceless as we learn and share information as Master Gardeners in New Mexico. We provide a service not covered by any other group or agency. Wildscapes, xeriscapes, water wise, smart gardens are all buzz words that mean nothing if they are not demonstrated to the public in a way they can understand and mimic in their own homes and workplaces.

*Mary Kay Brady, NM Master Gardener*

# The Virtual Gardener—Free Plants

How would you like to get some free plants for your garden? All it takes is a little time and a small amount of effort. You can create new plants from many of the plants already growing in your yard, and now is a good time to do it. At this time of the year, your plants are putting on a fresh spurt of growth. The new growth shoots of many plants can be used to make "softwood" cuttings for propagation. Here's how to do it.

The basic process is simple: Cut a piece of stem from a plant, stick it into a rooting medium such as coarse sand, keep the medium moist until the new roots appear, and transplant the rooted plant.

But understanding the underlying science will help improve your success rate.

- There are only certain place called meristematic areas, where plants can generate new roots. Meristematic areas occur at the tips of shoots, buds and roots. In order to successfully root a stem cutting, you have to wound a plant near a bud and make sure that the wounded area is in close contact with the rooting medium.
- Rooting occurs in response to a hormone called *auxin* which is produced naturally by the plant. In order to insure that there is enough auxin to get new roots started, most horticulturists dip the cut tip into a product containing either indolebutyric acid (IBA) or naphthalene acetic acid (NAA). These products are generally sold in powder or liquid forms. Trade names include "Rootone," "Dip 'N Grow," "Hormonex," and others.
- Since roots are the plant organs that are responsible for providing water to plants and new cuttings have no roots, it is necessary to take extra care that the cutting does not dehydrate before the new roots develop. This is done by surrounding the leaves of the cuttings with highly humid air to cut down on the loss of water by evaporation from the leaves and removing all but a few leaves from the cutting. Moisture can be trapped around the leaves by enclosing the cutting in a transparent or translucent covering such as plastic wrap or a plastic container. Replenish the moisture inside the covering by misting with a spray bottle. Remember, however, to remove the covering briefly at least once a day to allow fresh air to enter.
- Before roots develop the cuttings also have no way of getting nutrients. This means that they must subsist off the sugars that were stored in their tissues when they were cut. To generate the maximum energy for root formation remove all flowers and flower buds from the cutting that would divert the limited energy supply to the formation of fruit and seeds.

Other considerations.

- In order to cut down on the risk of transmitting a disease to your cutting, sterilize your cutting blade with rubbing alcohol or a dilute solution of bleach before making a cutting.
- Do not use ordinary soil as a rooting medium. Instead use sand, vermiculite, perlite, or peat moss which do not contain potentially pathogenic organisms.
- Keep the temperatures of the rooting medium and air around the plant fairly constant—55-65°F air temperature and 65-75°F for rooting medium.
- Keep the rooting medium constantly moist but do not submerge the tip of the cutting in water. Submerging the tip deprives the cutting of oxygen.
- Do not place the cuttings directly in the sunlight. Too much sunlight will cause the temperatures to rise to lethal levels inside the covering.

If you would like to read more about plant propagation point your browser at **http://www.freeplants.com/frame%20set.htm**

Until next time, happy surfing

*Gary A. Gruenhagen, Master Gardener*
***gruenha@sinosa.com***

## June Reminders

- **Check tree ties**
- **Mulch trees & shrubs**
- **Remove faded flowers**
- **Fertilize roses**
- **Watch for curly top on tomatoes**
- **Water! Water! Water!**

## Cuttings 'N' Clippings

❄ The next CCMGA meeting is 5:00 p.m. Thursday, June 1, 2006 at the University of Arizona South campus, Room 503. Guest speaker is John Ware, Executive Director of the Amerind Foundation.

❄ The free *Water Wise* Workshop on Saturday, June 3 from 9:00 to 11:00 a.m. at the Arizona Folklore Preserve (located 3.5 miles from Hwy 92 turn-off) will be presented by Cado Daily, UA Extension Specialist, called *Putting Together a Water Wise Landscape.* For more information contact Cado at the Cooperative Extension, Ext. 2139.

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❄ The spring Xeriscape Garden Tour was extremely successful. Thanks to the families who shared their gardens, to the public for their attendance, and especially to the Master Gardener docents!.

❄ At the High on the Desert Conference Cochise County Master Gardeners Association presented a check for $1,868.22 to Cochise County Librarian, Donna Gaab, for the purchase of 142 books that will be distributed among all of the libraries in the County.

❄ With sadness we note the unexpected passing of Linda Flores, a member of the 2006 Master Gardener class and enthusiastic newcomer to the area. We extend our deepest sympathy to the Flores family.

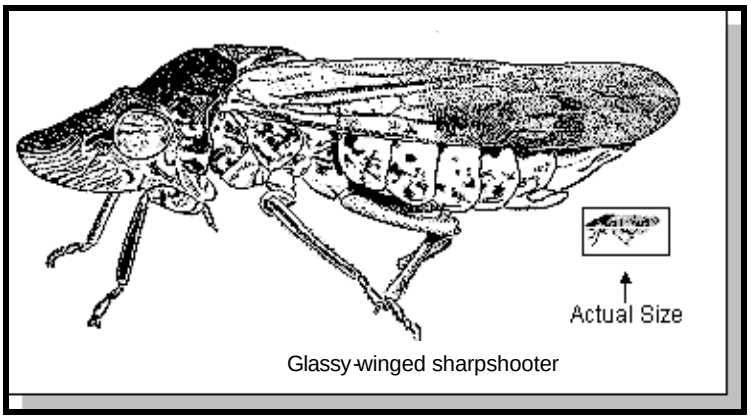
# The Agent's Observations

**Question:** We have heard about the glassy-winged sharpshooter. Why are they a problem? What can be done to control them?

**Answer:** The glassy-winged sharpshooter (GWSS), (*Homalodisca coagulata*), was found last year at a Sierra Vista nursery. The Arizona Department of Agriculture (ADA) had placed yellow sticky traps, or "blunder traps," to survey for white flies. A GWSS was found. The ADA then placed sticky traps around the nursery and adjoining neighborhoods. They trapped 32 GWSS, the last number I heard, last year. The GWSS spreads the Pierce's disease bacterium (*Xylella fastidiosa*). Pierce's Disease kills grapevines and causes oleander leaf scorch among other problems. Adults overwinter but are killed with cold temperatures, below 18° F. Unfortunately last winter was mild in Southern Arizona. Currently the ADA has trapped 12 GWSS, one male the remainder females. They have been spraying in and around the affected nursery with 'Delta Force' or deltamethrin, a short lived insecticide. They have also treated several residential properties attempting to eradicate this insect. GWSS, is a native to the Southeastern USA, but has become established in Southern California and transported on nursery stock to Arizona. The California Department of Transportation spent $53 million last year removing from highway medians dead oleander that had died from oleander leaf scorch. Needless to say there is much concern about Pierce's Disease in vineyards. Steps are being taken to quarantine Southern California nurseries to be sure no more GWSS are imported to Arizona. For further information see: **http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn7492.html**

**Reference:** Personal Communication from David Madison, ADA Quarantine Director

*Robert E. Call*
*Extension Agent, Horticulture*



Glassy-winged sharpshooter

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# High on the Desert

Our 13th Annual High Desert Gardening & Landscaping Conference has come and gone. From all reports everyone had a great time and learned so much. It is with great pleasure that we say, "Thanks! Job well done!" to all the dedicated volunteers of the Cochise County Master Gardeners Association!

Special thanks to our sponsors:
**Arizona Community Tree Council**
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Thanks also to the following:
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**Speakers:**
A great big THANK YOU! We couldn't have done it without you!

**Committee chairpersons and CCMGA Members** who gave so much of their time, energy, and talents to make it all work: Rob Call, Extension Agent and Program Chair, Conference Coordinator, Penny Artio; Dave Barry, Rosemarie Burke, Jim Byrum, Dave Crandall, Felice Dayhoff, Deke & Peggy Descoteaux, Linda Flores, Linda Gleason, Anita Gollwitzer, Agnes Gromek, Gary & Carolyn Gruenhagen, Larry Kovarcik, Kunie Kummer, De Lewis, Angel Rutherford, Cathey Schneider, Doug & Eleanor Templeman, Sarah Turan, Kathryn Waite, Joan Wakefield, and the Cooperative Extension Staffs in Sierra Vista and Willcox. A special thank you to MC Jim Koweek.

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