

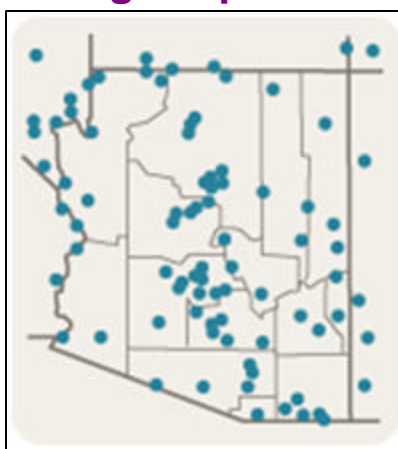


## The Virtual Gardener—Counting Drops

As I write this (20 Dec.) the total amount of precipitation recorded at my place for 2011 was 10.79 inches. That's a little more than half the 18.41 inches recorded for 2010 but beats the total of 8.16 inches for 2009 by a mile. Keeping track of rainfall not only satisfies my personal curiosity as a gardener but also contributes in a small way to a better understanding of Arizona weather and climate. Here's how.

I'm a RainLogger—that is, I record the precipitation that falls at my house and report it via the internet to Rainlog.org. RainLog is a University of Arizona program that enlists the support of volunteers to supplement the rainfall reports received from official rain gauges around the state. Since there are less than 100 official gauges but more than 2,300 RainLoggers, you can see how much additional data is generated by the Rainlog system. Most of the RainLoggers are from Arizona but a few are located elsewhere in the U.S. and one in China!

If you point your web browser at <http://rainlog.org/usprn/html/main/maps.jsp> you can see a map showing the distribution of RainLoggers and the amounts of rainfall reported. The web



Locations of official rain gauges

page allows you to look at reports for the whole state or at any one of eight sub areas around the state. You can look at data for periods ranging from a single date or range of dates to monthly totals. And, as if that were not enough, you can zoom in to look at details in a particular small area such as your neighborhood. You can even request RainLog to automatically send you an email listing rainfall amounts within five miles of your location if the data are available.

As I said, RainLog data are being used to help unravel the mysteries of Arizona

*(Continued on page 2)*

### Inside this issue:

January Reminders	2
Cuttings 'N' Clippings	2
Consider the Sweet Potato	3
MGs and Kartchner	4
In a Desert Garden	5
Conference Scholarship	5
Agent's Observations	6
Did You Know . . .	8
High on the Desert	8

## Cochise County Cooperative Extension

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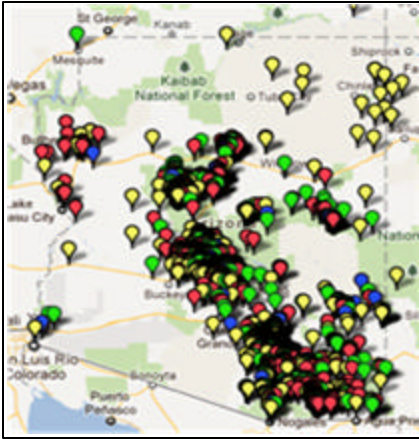
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(Continued from page 1)



### Locations of RainLoggers

climate and weather, but they also find other uses. According to two of the RainLog principals, Gary Woodard, Associate Director for Sustainability of semi-Arid Hydrology and Riparian Areas (SAHRA), and Mike Crimmins, University of Arizona Climate Science Extension Specialist, the data are not only being used to support research but to provide inputs to every day questions, including irrigation scheduling, buffelgrass eradication planning, and monthly drought assessments. RainLog data were even used in a couple of lawsuits to prove whether a street was wet or dry at a particular time.

## January Reminders

- ◆ Winter prune
- ◆ Remove old mulch/replace
- ◆ Dig tree holes
- ◆ Prepare soil for spring
- ◆ Water periodically
- ◆ Stratify seeds
- ◆ Fertilize asparagus
- ◆ General garden clean-up

As for research, some of the projects RainLog data are being used for are to get a better handle on the real distribution of monsoon rainfall, assess water quality issues associated with water harvesting, and determine how man-made features affect the quality and quantity of runoff water.

How can you become a RainLogger? It's easy! Go to <http://rainlog.org/usprn/html/main/registration.jsp> and fill out the registration form. You will need to create a user name and password, provide contact information and the exact location where your rain gauge will be located, and indicate what kind of rain gauge you will be using. If you don't already have a gauge you can buy a Tru-Chek gauge from Rainlog.org for \$12.00 by going to the RainLog store at <https://shop.rainlog.org/>. I have both an expensive electronic tipping gauge and a Tru-Chek gauge and recommend the Tru-Chek. The tipping gauge, in my experience, consistently under-reports the amount of rainfall.

For the cost of a trip to the yard to read the rain gauge and a few keystrokes on the computer keyboard each time it rains—and we all know how often that happens in Arizona—you can contribute to unraveling the mysteries of our climate and much more. So why not sign up and become a RainLogger too?

Until next time, happy surfing!

Gary A. Gruenhagen, Master Gardener  
virtualgardener@cox.net

## Cuttings 'N' Clippings

\* The **January 5, 2012** CCMGA meeting will be held at 5:00 p.m. in the Public Meeting Room at UAS. The speaker will be Kim McReynolds on *The Grasslands of Cochise County*. For more information go to Events at:

[www.ag.arizona.edu/cochise/mg](http://www.ag.arizona.edu/cochise/mg)

### \* High on the Desert

The **19<sup>th</sup> High Desert Gardening & Landscaping Conference** is in the planning stages and will be held **February 16 & 17, 2012** at the Windemere Hotel & Conference Center in Sierra Vista. Registration forms are available at the Master Gardener web site:

<http://ag.arizona.edu/cochise/mg/nnlpdf/2012%20regis.pdf>

or in the Cooperative Extension offices. For more information please call Joyce at (520) 458-8278, Ext. 2141.

\* The **Saturday, January 7,** Water Wise presentation from 9 to 11:00 a.m., will be *Save Energy, Save Money, Save Water*. Energy conservation is more than turning out the light and turning down the thermostat. Come learn about the best ways to reduce your electric bills while conserving water. The presenter will be Martin Yoklic, Associate Research Scientist, Environmental Research Laboratory, University of Arizona. The presentation will be held in the Public Meeting Room at UAS. For a list of 2012 presentations go to

<http://cals.arizona.edu/cochise/waterwise/events.html>

## Consider the Sweet Potato

As you read through the seed catalogs this winter and try to decide which varieties of beans, tomatoes, peppers, cucumber, and such that you want to grow next summer, consider growing sweet potatoes. In my experience, sweet potatoes are an easy crop to grow and the yield from a relatively small patch can be substantial—up to ten pounds per plant, depending on the variety you select.

The sweet potato, *Ipomoea batatas*, is a member of the same plant family, *Convolvulaceae*, as the Morning Glory. This family of plants, also known as the bindweed family, contains at least several dozen genera and close to two thousand species. Most of them are vining plants. One family member, *Convolvulus arvensis*, is a serious agricultural pest that is nearly impossible to eradicate once established. *C. arvensis* is a prohibited noxious weed in the state of Arizona. It is very tenacious and spreads via its long roots, rhizomes, and seeds. The seeds can remain viable in the soil for many years. Fortunately, the sweet potato isn't invasive.

Sweet potatoes are not related to regular potatoes. Potatoes are members of the *Solanaceae* family that includes tomatoes and peppers. The edible portion of the sweet potato is its root, while the part of the potato we eat is a tuber, or underground stem. Potatoes are typically planted using all or part of the potato itself, while sweet potatoes are grown from small shoots known as "slips." Slips are cut from a mature sweet potato. You can produce your own slips by suspending a large chunk of sweet potato in a glass of water (use toothpicks for

support) and waiting a few weeks for the slips to appear.

Sweet potatoes are not yams, either. The sweet potato is a dicot. Yams, on the other hand, are monocots and are related to lilies and grasses. True yams are not typically seen in American grocery stores, although you might have some success finding them in an ethnic grocery store that carries African or Caribbean foods.

There are many dozens of sweet potato varieties. Most seed suppliers offer at least a few varieties to home gardeners. Common varieties are 'Beauregard', 'Centennial', 'Georgia Jet', 'Jewel', and 'Vardaman'. Some sources offer a much larger selection; check out this link

<http://ag.arizona.edu/cochise/mg/pdf/Feb11.pdf#SeedSources> to find a couple of them. Order them soon for May delivery.

Once you receive your slips, immediately put them into a glass of water (stem/root end only, don't submerge the leaves!) to store them until you're ready to plant. The slips are remarkably hardy. I've kept mine for several weeks in water. Be sure they get some sunlight and change the water occasionally. Sweet potatoes need warm weather (nights should be above 60°F), loose soil, and a long growing season, at least 100 days for most varieties. In Cochise County, plant in late May or early June for harvest in September. Plant the slips about ten to twelve inches apart in rows that are at least three feet apart. The plants are vines and will spread a lot, so plant to provide easy access as they grow. I grow twelve plants in a 4' X 12' raised bed. The vines sprawl some beyond the bed edge, but not too much. Water daily for a while until the slips are established,

then back off to a couple of times a week.

Harvest is easy, especially if you've got loose soil. Once the time has passed for the recommended days to maturity for your variety, just feel around in the soil under a plant for the sweet potatoes. If they're of sufficient size, harvest away. If not, wait a week or two and try again. You can wait all the way to the first freeze, after which you need to harvest immediately to prevent rotting. Be careful when harvesting as the fresh roots break easily and it's almost a certainty that you'll slice a couple in two if you use a shovel.

To store them, gently brush the loose dirt off (the skin peels off very easily) and place in a warm, unlit spot to cure for a couple of weeks; I use a work bench in my garage. You don't need to wait for them to cure to enjoy them, though. Chow down any time after harvest and eat them in whatever fashion you prefer. I like baked sweet potatoes—no butter, thanks—, sweet potato fries, and sweet potato pie. Yum-O! (My apologies to Rachel Ray.)

Bill Schulze, Master Gardener  
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*Robert E. Call*

Robert E. Call  
Area Horticulture Educator/Agent  
Carolyn Gruenhagen  
Editor

## Master Gardeners Join Forces with Kartchner Caverns

It sounded simple enough. Kartchner Caverns State Park volunteer coordinator Marti Murphy needed help selecting and planting \$800 worth of flowers for the hummingbird garden. I had just finished a summer project researching hummingbird plants for my own garden. More importantly, I needed volunteer hours to become an official Master Gardener. And so a partnership was born between Kartchner Caverns State Park and the Cochise County Master Gardeners.

Olivia Sinks, my fellow classmate and cohort in crime, joined me in devising a renovation plan for the 10-year-old garden. Our criteria was simple: all plants must be natives of either the Sonoran or Chihuahuan Deserts. We began by taking an inventory of the existing plants in the garden.



Before

When the garden was started, it contained plants from around the world known to attract hummers. We were pleasantly surprised to find that the non-natives had died off in the ensuing years. There were one or two exceptions which were left in the garden because they were favorites of the staff.

We spent last winter researching native flowers, bushes, and trees. We made frequent trips to map where the new plants should

go. We took into account areas lacking color and interest, the limits of the drip irrigation system, and light requirements. Once our plan firmed up, we presented it to Marti Murphy for approval.

Our next step was pruning. Last March we trained a team of Department of Corrections (DOC) inmates on proper pruning techniques. Olivia and her group tackled the trees while my team trimmed bushes and smaller plants. In one day the garden went from overgrown to neat and tidy.

Finally in April, Marti, Olivia, and I went on a shopping spree at the Tohono Chul greenhouses in Tucson. They gave us a generous discount which enabled us to purchase more plants than we thought possible. The real trick, though, was squeezing 153 plants and three ladies into a state park passenger van.

On the big day, our DOC team showed up bright and early. We placed the plants around the garden and gave our teams a quick planting lesson. By noon, every plant was in the ground and looking good.

We did have a few issues watering our new plants because a key valve in the drip system burst during the record-breaking cold spell earlier in the year. We were able to work out a solution until the damaged drip system could be repaired. The DOC crew and Master Gardener volunteers, Bill and Vicky Schulze, helped us keep plants alive.

Water means green plants. We did lose a few plants to voracious wildlife that saw green plants as the Holy Grail during a very dry spring. However, the monsoons

really brought back to life those plants that were just hanging on after being “grazed.”

When the new plants were actively growing we realized that we needed more flowers to fill out the garden and thought that the Cochise County Master Gardeners Association (CCMGA) would like to help. We asked for “matching funds” that would equal the original \$800 grant. The money was approved. This extra shot of colorful plants that we plan to add in the spring of 2012 should make the garden very special.

The Arizona State Parks thought the amount was special, too. In early November the Master Gardeners of Cochise County received an invitation to the Arizona State Parks Board Meeting to receive a “recognition resolution.” In the current economic climate Arizona State Parks need all the help they can get to keep the parks open. The additional funds for the Hummingbird Garden were very appreciated.



We’re always looking for volunteers to join us at Kartchner. If you’re interested contact either Olivia Sinks at [osinks@cox.net](mailto:osinks@cox.net) or Denise Sloan at [baileysloan@earthlink.net](mailto:baileysloan@earthlink.net).

*Denise Sloan with Olivia Sinks  
Master Gardeners*

## In a Desert Garden

### *Teucrium fruticans* – Bush germander

In my little garden, I grow several varieties of germander and I am very fond of them as I love plants with bluish purple flowers. This variety I planted late last summer and it came into flower in late fall and bloomed through winter until that very cold spell we had—that did a number on it. The plant froze to the ground but recovered fast and has now reached about 1½ feet, and it just started to flower again. The flowers are a deep blue, and it is pollinated by bees. It also attracts hummingbirds as the flowers have the long throat they love. The foliage is gray which gives a nice contrast with other green plants. In my garden I planted *Calylophus*, ‘sundrops’ around it.



*Teucrium fruticans*

Bush Germander grows to about 4 feet tall but it is a slim plant; it gets only 1 to 2 feet wide which is just perfect for the spot I have chosen. It prefers light shade in the afternoon, but also takes full sun with a little extra moisture. In my books it says that the plant prefers a rocky soil with good drainage. My garden has clay soil so I have to be careful not to over water—a challenge in the rainy season. This plant is a Mediterranean native and I have seen it growing in Sardinia and Spain. Bush germander is a member of the mint family and named after Teucer the first King of Troy. It was used for medicinal purposes.

*Angel Rutherford, Master Gardener*

**Hurry!!!**

## High on the Desert

### High Desert Gardening & Landscaping Conference Scholarship Application

The Cochise County Master Gardeners Association (CCMGA) is awarding up to three full scholarships to the 2012 High Desert Gardening & Landscaping Conference to be held at the Windemere Hotel & Conference Center, Sierra Vista, AZ, February 16 & 17, 2012. Applicants are invited to submit an essay on one of the following topics:

- Gardening for food production**
- Landscaping with native plants**
- Environmental stewardship**

Essays must meet the following criteria:

1. 750 to 1,000 words in length.
2. A hard copy double spaced and typed on plain bond paper and/or a soft copy in MS Word format (doc or docx).
3. Represent original scholarship and be suitable for publication. All references and authorities cited must be properly attributed.
4. Entries must be accompanied by an official cover sheet available from the Cooperative Extension Office at the UA South campus or from the Master Gardener web site: [www.ag.arizona.edu/cochise/mg/](http://www.ag.arizona.edu/cochise/mg/)
5. Entries must be received at the Cooperative Extension Office, 1140 N. Colombo, Sierra Vista, AZ 85635 not later than close of business on January 13, 2012.

Entries will be judged by the Cochise County Horticulture Extension Educator and a committee of Master Gardeners appointed by the President of CCMGA. The awardees will be notified not later than January 27, 2012 and their names published in the February 2012 Master Gardener Newsletter.

## The Agent's Observations

**Q** A tree next to our home is dying. I do not know the species, but it has small seed cones that look like jingle-bells. The tree has been there for years, and as you can see from the photo is dying back starting at the top. Seems the dieback started after the cold weather we had last winter. What can be done to save this tree? Should we remove the top dead portion and hope it will recover?



**A** The tree species is Arizona cypress, *Cupressus arizonica*. Yes, you are correct the top portion of the tree is dying, most likely from insufficient water. Should you remove the top portion? No, I would remove the entire tree. Usually, topped Arizona cypress and many other coniferous trees do not recover well and are unsightly from topping or other severe pruning. What is the purpose of this tree anyway? It looks like another example of a plant in the wrong place. The tree was planted very close to the house

and the opposite side is on a downward slope. The slope will not allow much water infiltration unless an "eyebrow" is formed below the tree to stop water from running down the hill. My recommendation is to remove the tree and plant something suitable for the location before bark beetles begin to feed on the dead/dying parts of the tree.

**Q** We are having a problem with gophers. We feed birds in the winter. Are the gophers attracted to the bird seed they scatter? What can be done to control the gophers that are in our lawn?

**A** Bott's Pocket gophers, *Thomomys bottae*, or the southern pocket gopher, *T. umbrinus*, are found in the southeastern portion of Arizona. Collectively they are called Western pocket gophers, because of their cheek pockets. There are other species in the U.S. and all are herbivores. They would not be attracted to spilled bird seed because they feed primarily underground on plant roots.

Pocket gophers feed on plants in three ways: 1) they feed on roots they encounter while digging their runs; 2) they may go to the surface, venturing only a body length or so from their tunnel opening to feed on aboveground vegetation; and 3) they pull vegetation into their tunnels from below. Pocket gophers feed on forbes, grasses, shrubs and trees. They are strict herbivores, and any animal materials in their diet appears to result from incidental ingestion. The tunnel systems may be up to 600 feet depending on the amount of food

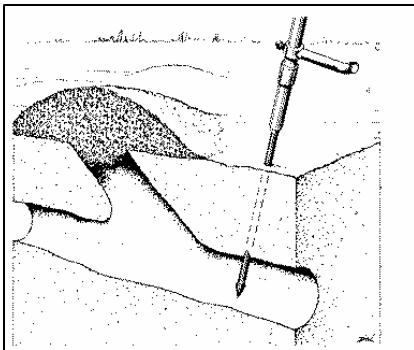
available and produce up to 300 mounds a year. The burrows are about 2.5 to 3.5 inches in diameter. Feeding burrows usually are 6 to 12 inches below ground, and their nest and food storage chamber can be as deep as 6 feet. Gophers seal the openings to the burrow system with earthen plugs and defend their tunnels vigorously. Short, sloping lateral tunnels connect the main burrow system to the surface; gophers create these while pushing dirt to the surface when constructing the main tunnel.

Gophers don't hibernate and are active year-round, although you might not see any fresh mounding. They also can be active at all hours of the day. Pocket gophers are solitary except when mating which begins in March. Litter sizes range from one to ten but typically average three to four. Gestation is 18 to 19 days. One litter per year is normal. At one-year-old they are able to reproduce. They live for one to three years. Young disperse from their natal burrows in May and June when they are one-third adult body size.



(Continued on page 7)

(Continued from page 6)



#### Probing for a pocket gopher tunnel

(Illustration from Salmon, T. P., and R. E. Lickliter. 1984. *Wildlife Pest Control around Gardens and Homes*. Oakland: Univ. Calif. Agric. Nat. Res. Publ. 21385.)

**Control:** The most effective control measures are trapping or baiting. Trapping is a safe and effective method for controlling pocket gophers. Several types and brands of gopher traps are available. The most common type is a two-pronged, pincher trap such as the Macabee, Cinch, or Gophinator, which the gopher triggers when it pushes against a flat, vertical pan. Another popular type is the choker-style box trap. To set traps, locate the main tunnel with a probe, (see illustration above). Use a shovel or garden trowel to open the tunnel wide enough to set traps in pairs facing opposite directions to intercept a gopher coming from either end of the burrow. Tie a wire or twine onto the trap and tie the other end to a stake pounded into the ground. You might lose the trap when a go-

pher scurries away in the trap if it is not tied to a stake.

I prefer using bait because it will be underground so non-target animals are not affected. Also, if a tunnel occupant dies the bait is available when a new occupant arrives. The key to an effective toxic baiting program is bait placement. Always place pocket gopher bait in the main underground tunnel, not the lateral tunnels. After locating the main gopher tunnel with a probe, enlarge the opening by rotating the probe or inserting a larger rod or stick. You may also dig a hole to expose the run in the same manner as when placing traps. Place the bait carefully in the opening using a spoon or other suitable implement that you use only for that purpose, taking care not to spill any bait onto the ground. A funnel is useful for preventing spillage. Strychnine-treated grain, with an anise attractant, is the most common type of bait used for pocket gopher control. This bait generally contains 0.5% strychnine and is lethal with a single feeding. Baits containing 2.0% zinc phosphide are also available. Use may result in bait shyness and are not as attractive to the gopher, but are also lethal after a single feeding.

Multiple feeding anticoagulants are available as well. When using anticoagulant baits, you'll need to set out a large amount of bait—about 10 times the amount needed when using strychnine baits—so enough will be available for multiple feedings. Although generally less effective than strychnine baits, anticoagulant baits are less toxic. As

such, they are preferred in areas where children and pets might be present. When using either type of bait, be sure to **follow all label directions and precautions**. After placing the bait in the main tunnel, close the probe hole with sod, rocks, or some other material that excludes light while preventing dirt from falling on the bait. If a hole was dug, fill it in leveling it with the surrounding ground. Several bait placements within a burrow system will increase success. Tamp down or clear existing mounds within 10 to 15 feet of the treated area so you can distinguish new activity. If new mounds appear more than two days after strychnine or zinc phosphide baiting or seven to ten days after using anticoagulant baits, you'll need to re-bait or try trapping. If gophers have infested a large area, use a hand-held bait applicator to speed treatment. Bait applicators are a combination probe and bait reservoir. Once you have located a tunnel using the probe, a trigger releases a measured amount of bait into the tunnel. Generally, strychnine bait is used with such an applicator, because it dispenses only a small quantity of bait at a time. Fumigants have proven to be of little effectiveness in sandy, rocky or loose soils.

**Sources:** *Prevention and Control of Wildlife Damage*. Scott E. Hygnstrom et al. 1994. University of Nebraska. Pp. B17-28.

Robert E. Call  
Area Horticulture Educator/Agent

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Cochise County Master Gardeners Association in conjunction with  
The University of Arizona Cooperative Extension presents . . .



the 19<sup>h</sup> annual  
**High Desert Gardening &  
Landscaping Conference**

*High on the Desert*



**February 16 & 17, 2012**  
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## Did You Know . . .

- ◆ This is the beginning of the 23<sup>rd</sup> year the Cochise County Master Gardener Newsletter has been around! You can find copies from 1999 to the present on the web site.
- ◆ Editor Carolyn Gruenhagen has put together every monthly copy of the MG Newsletter since the beginning issue in December 1989.
- ◆ On a recent week, more than 3,500 “hits” were made on the web site.
- ◆ Rob Call recently celebrated 20 years as the Cochise County Area Horticulture Educator/Agent.
- ◆ We wish all of our readers a

**HAPPY NEW YEAR**



## Christmas Tree Recycling

Sierra Vista’s City compost facility will be accepting both city and county residents’ Christmas trees through Saturday January 28 for free! The site is located behind the County Transfer Station on E. Hwy. 90 at mile marker 325. It is open from 8:00 a.m. to 2:00 p.m. Monday through Saturday. If you live in the city you can have the tree picked up on a scheduled Wednesday yard waste pickup. Call 4458-7530 to schedule a pickup.

## Annual Phone Book Recycling

Don’t throw your old phone books away—recycle them! City of Sierra Vista residents can recycle their books in their blue recycling container or help local students win a pizza party by participating in the collection drive. The top class from each school wins a free pizza party. The school to collect the highest number of telephone directories and runner up each receive the City’s “Recycling Award of Excellence.” Participating schools include Joyce Clark Middle School, Berean Academy, Pueblo del Sol, Carmichael, Huachuca Mountain, Village Meadows, Town & Country, and Bella Vista Elementary Schools.