



The Virtual Gardener—Winter Rains

Those of us who live in the high desert look forward to the coming of the summer rains. The storms brought by the monsoon are dramatic, their approach announced by boiling pillars of clouds towering above the mountain tops, their arrival marked by the crash of thunder and the flash of lightening, followed (we hope) by torrential downpours.

These are the storms that bring life-giving water to a thirsty land and wash away the drought...or do they?

When a raindrop falls from the sky there are only three things that can happen to it. It can sink into the ground; it can flow away; or it can be evaporated back into the air. To be useful for our plants, it must be absorbed into the soil and reach the root zone.

On average a little more than half our total rainfall occurs during the monsoon (July-September) and the other half during the remaining months. The summer rains may be more spectacular, but winter rains are the real thirst-quenchers.

Summer rains are localized in both time and space. The storms develop quickly

and are usually over in a matter of minutes. Their footprints on the ground are small, sometimes covering only a few thousand square feet.

Winter storms, on the other hand, are often regional in size and last for extended periods of time. Because of this, the total volume of water reaching the surface from a winter storm may be much larger than that produced by a summer storm, even though the amount of rainfall measured in inches is much less.

The summer downpours quickly saturate a shallow surface layer of soil, causing water to run off rather than sink in. Little of the water reaches the root zone where it is available to our plants. Winter precipitation is usually gentler and may even fall as snow, allowing it to slowly sink into the ground and saturate deeper layers of soil.

Summer rains fall during the hottest season of the year when evaporation rates are the highest. Winter rains fall during cooler months when evaporation is much lower. And finally, summer rains fall when vegetation is lush and total evapo-

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COLLEGE OF AGRICULTURE
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transpiration is the highest. Less green biomass in the winter means less water lost to evapotranspiration.

So, given that winter rains are so important, what can we expect this winter?

The [Climate Prediction Center](#) of the National Weather Service issues monthly and seasonal color-coded outlook maps for both temperature and precipitation. Predictions are made by a number of different computer programs called “models” that compare past conditions with current conditions in order to guess what will happen in the future. Like human experts, these models apply all of their accumulated knowledge of weather and climate to making their predictions. And like human experts, each of the models will bring slightly different points of view to the problem and often come up with different conclusions. The predictions that are reported by the Climate Predictions Center represent a consensus of the predictions produced by the models and are expressed in probabilities that reflect the confidence in them.

Here is the latest three-month outlook map for the period January/February/March of 2015. What does it show us?

Areas shown in white and labeled “EC” have equal chances of being either wetter or dryer than normal. This does not mean those areas will receive normal precipitation, only that there is no strong reason to favor either a wetter or a dryer period. It has equal chances of going either way.

Areas predicted to have below normal precipitation are colored in shades of brown labeled with a “B” and areas predicted to have

higher than average precipitation are colored green labeled with an “A”. The darker the shades, the higher the confidence in the prediction.

If you look closely at the map you will find the lines that separate the darker areas from the lighter areas are labeled with “40” and “33”. These lines are similar to contour lines that show elevations on a topographic map, but in this case show probabilities associated with the confidence given to the predictions. We are 40 percent sure of the prediction for the darker areas inside the 40-lines and only 33 percent sure of the prediction for the areas inside the 33-line.

Cochise County falls within the 40-line for above average precipitation for the period January-March. Lest you get too excited about the prediction of above average precipitation, understand

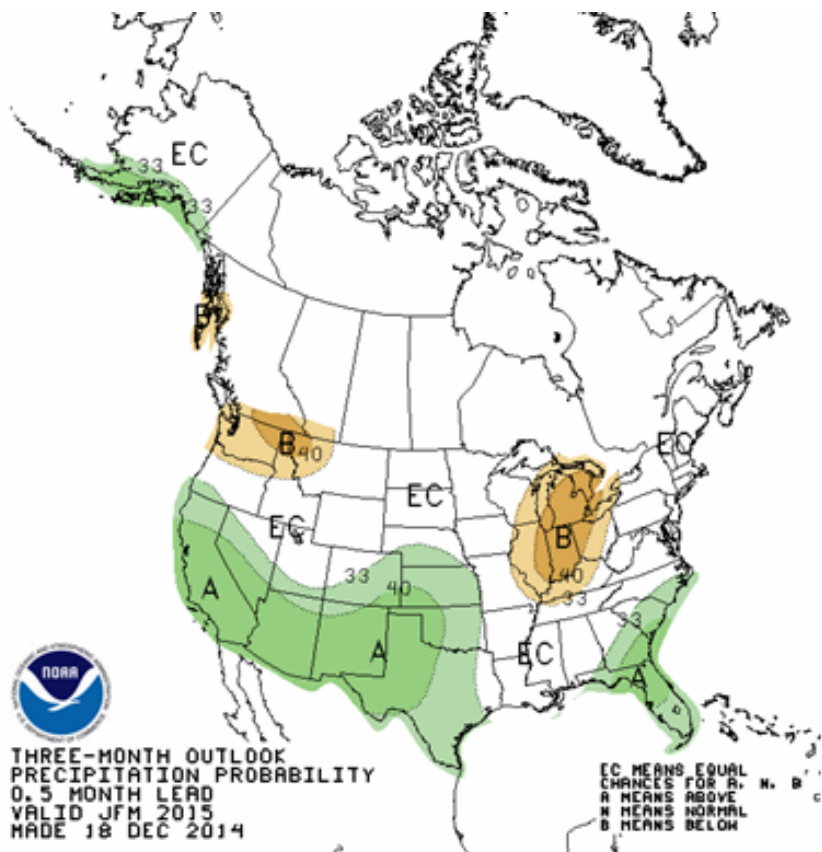
that a 40 percent chance of higher than normal precipitation means there is a 60 percent chance of lower than normal precipitation. So, as Robert Heinlein once famously said, “Climate is what you expect but weather is what you get.”

Until next time, happy surfing.

Gary Gruenhagen, Master Gardener
virtualgardener@cox.net

Sierra Vista Offers Christmas Tree Recycling

Recycle your Christmas tree free of charge by dropping it off at the City’s compost facility on Hwy 90. If you opted for a live, potted tree, you can donate it to the City for use in future landscaping projects. City refuse customers can arrange for a special curbside pickup by calling 520-458-7530.



This Month In the High Desert Garden It's Time to Plant Roses

(Editor's note: This article written by Bill Schulze was adapted from a January 2012 article published in the *Sierra Vista Herald*.)

January is the time bare-root roses, fruit, and nut trees are appearing in plant nurseries. Other bare-root plants offered for sale include raspberries, blackberries, grapes, and blueberries. Avoid blueberries because they require very acidic soil conditions and our soils are alkaline, but all of the other choices will do well in our high desert. Bare-root is a great way to buy plants and this is the right time of year to plant them, plus it's typically cheaper than buying a potted plant later in the year. Be sure and do a little homework before purchasing bare-root roses or trees. For instance, there are thousands of rose cultivars. You probably know they come in many colors, but did you know that some are fragrant and some



aren't. Some are bush-like, some are climbers, some have large flowers, some have small ones, and so on. Some fruit trees, such as apples and cherries, need a second variety to provide pollination. Peaches and apricots, on the other hand, typically don't need a separate pollinizer and are referred to as self-fruitful. Some varieties need 600-800 hundred hours of cold weather in the winter in order

to leaf and fruit well, others don't. Don't buy a so-called "low chill" variety (such as 'Anna' apple); you'll get a tree that will start leafing and blooming during a warm spell in mid-winter, only to have the new growth nipped by a hard freeze.

For more rose information, check out this link:

<http://aces.nmsu.edu/pubs/h/H-165.pdf>

Most all roses and fruit trees are cuttings grafted onto a root stock. The root stock is selected for disease resistance and vigor, while the cutting or scion, is selected for the flower in the case of roses or the fruit quality in the case of fruit trees. This is necessary because seeds from these plants don't produce the same fruit or flower as their parent. For instance, if you plant a seed from a Gala apple or a pit from an Alberta peach, the tree that grows won't yield Galas or Albertas and very likely will not be anything you'd consider edible. If this seems odd to you, consider the fact that human offspring aren't identical to their parents, either. But, you may ask, what about Johnny Appleseed (real name: John Chapman)? Why did he plant seeds? Well, it turns out that folks in Mr. Chapman's day used apples mainly for hard apple cider, which was often safer to drink than water on the American frontier. Fruit edibility was therefore of minor concern. Early frontier folk did monitor their seed-planted apple trees closely, though because the rare tree that actually produced tasty fruit, say a 'Winesap' or a 'Jonathan', could be a ticket to big money when sold to a nursery company.

January is also the time of year when gophers begin to show up, leaving their telltale mounds of dirt

in your lawn or garden and devouring your plants. If you consider gophers a yard pest, there are two basic methods to rid your yard of these creatures: poisons or traps. I don't like poisons because you often aren't sure if the gopher was killed. Also, another animal such as a pet or predatory bird might end up consuming the poison or the poisoned gopher. My preference is to trap the little devils; see this link for instructions on trapping gophers: <http://ag.arizona.edu/cochise/mg/pdf/Mar10.pdf#GOPH>


Bill Schulze, Master Gardener

Why be Water Wise?

Arizonans have long known that water is our most precious resource. Many residents presently enjoy a reliable, relatively inexpensive supply of high quality water. However, water use has begun to exceed water recharge in some areas of Cochise County, generating concern about depleting water resources. To ensure adequate water supplies for the future, all of us need to be more water wise. Our web page water-wise.arizona.edu contains tips for saving water indoors and outdoors. These water wise ideas can not only help you save money on your water bill, but also benefit the community by conserving this precious resource. Water Wise is a public/private funded University of Arizona Cooperative Extension water conservation educational program. We are here to help you do what you want, but more water efficiently. Please let us help you!

Cuttings 'N' Clippings


✿ CCMGA will not be meeting in January.

✿ Water Wise presentation January 10 *Why is Cochise County Cracking Up?* See info here  Watch for their 2015 schedule on their web site:

waterwise.arizona.edu

For more information: (520) 458-8278, Ext 2141, or contact Valerie at:

valeriedavidson@email.arizona.edu

✿ Plans are underway for the 22nd Annual High Desert Gardening & Landscaping Conference. Mark your calendars for March 12 & 13 for a rewarding experience. Watch for more information on the Master Gardener web site coming soon. Scholarships will be available. See information here 

In a Desert Garden

Kalanchoe tubiflora

This family of succulents includes a variety of plants. *Kalanchoe blossfeldiana* is found in stores around this time of the year, and that is why its common name is Christmas plant. This is the most known of the 200 species. *Kalanchoe* are native to Madagascar, and they all are "short-day plants." That means plants will only bloom if they are kept in the dark for 16 hours a day for a certain time, just like the poinsettia. The poinsettia is an *Euphorbia*, but also belongs to the *Spurge* family - *Crasula*. The plant I am writing about belongs to the genus of *Bryophyllum*

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Cochise County Master Gardener Newsletter Editor
Carolyn Gruenhagen

Why is Cochise County CRACKING UP?!?

Groundwater withdrawal, subsidence, and earth fissures in Cochise County



January 10

9 am to 10 am

Cochise College

901 N Colombo Ave
Sierra Vista ❖ Arizona

In the Student Union
Community Room

Presented by: Michael Conway, Ph.D.

Chief, Geologic Extension Service
Arizona Geological Survey



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Water Wise Program
458-8278 x2141
WaterWise.Arizona.edu



High Desert Gardening & Landscaping Conference Scholarship Application

The Cochise County Master Gardeners' Association (CCMGA) is awarding up to three full scholarships to the 2015 High Desert Gardening & Landscaping Conference to be held at Cochise College, Sierra Vista, AZ, March 12 and 13, 2015. This year for the first time, one additional scholarship is being offered to local high school, college, or university full-time students.

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. Represent original scholarship and be suitable for publication. All references and authorities cited must be properly attributed.
3. Please submit as an attachment (plain text format) to an e-mail to ccmgasecretary@gmail.com Subject: Conference Scholarship.
4. Those applying for the Student Scholarship should also provide the name and location of the school they are attending and proof of their full-time status.
5. Entries must be received no later than close of business on January 30, 2015.

Entries will be judged by a committee of Master Gardeners appointed by the President of CCMGA. The awardees will be notified no later than February 11, 2015.

By submitting your entry, you understand and agree that it may be published in the Cochise County Master Gardener Newsletter* and that edits may be made to your article prior to publication.

*The Cochise County Master Gardener Newsletter is a publication of the University of Arizona Cooperative Extension.

At a Glance Box

It's a Bloomin' Cochise County Native Plant of the Month

Plant: Ferns

Description: Small, usually less than 1' tall

Blooms: Reproduces by spores

Water Need: No supplemental

Use: Enjoy in the wild!

Culture: Common in canyons, 1,000' - 7,000' elevation

Learn more: Cochise County Herbarium

www.cochisecountyherbarium.org

For an in-depth article, see below.

Cado Daily

Water Resources Coordinator, Water Wise Program

University of Arizona Cochise County Cooperative Extension

Mimi Kamp

*Herbalist, Plant Illustrator, Cochise County Herbarium Curator,
taxonomist and consultant*

For more information and photos of ferns, visit Arizona Ferns at azferns.org.

Here are just a few ferns to look for:

Countess Dalhousie's spleenwort (*Asplenium dalhousiae* Photo: http://www.discoverlife.org/mp/20p?see=I_GY835&res=640). For those reading a paper copy of the newsletter, go to the www.discoverlife.org website). This Countess Dalhousie was named for Christian Ramsay (1786-1839), a Scottish botanical collector. There is a wonderful write up on her at www.saltiresociety.org.uk. She was an avid promoter of education and apparently was a colorful character known for drawing caricatures of the Halifax elite and deserving not only a spleenwort but of a Scottish strathspey (tune) named after her.

The genus *Spleenwort* includes evergreen rock ferns. They spread by rhizomes with leaf blades from 4-15 cm long. The leaf scales are often iridescent. In North America, they are found only in wet canyons in the Huachuca, Mule, Baboquivari Mountains, and in northwestern Mexico. Globally, they grow in Abyssinia and the mountains of southern Asia. Literature remarks on this unusual geographic distribution.

The following two ferns are found in dry, rocky canyon slopes.

Copper fern (*Bommeria hispida*. Photo: <http://azferns.org/cgi-bin/azFernsQuery.pl?taxon=Bommeria+hispida>

Arizona Fern website). This fern is in the Maidenhair fern family. It is an easily identified fern with triangle-shaped, three blade leaves about 1-7 cm long and wide. According to the Flora of North America, the Copper fern is the only member of the *Bommeria* genus to occur north of Mexico.

Another fern in the Maidenhair family is the **Spiny Cliffbrake** (*Pellaea ternifolia*. Photo: <http://swbiodiversity.org/seinet/taxa/index.php?taxon=1742>

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Ferns

When the Master Gardener newsletter began including the Bloomin' Cochise County Native articles, the goal was to help readers learn about our wonderful Cochise County native plants. Many of these plants are super for landscape use and available in nurseries, some are super plants but aren't easily found in nurseries (keep asking for them!) and some plants are super but won't be found in nurseries. So some of the plants you read about here are simply to help you have a sharper eye when out in nature and a greater appreciation of native plants. That is one disclaimer about this month's plant choice. Also, it is hard to find blooming plants in the winter months—a second disclaimer. Therefore, we humbly submit that this month we are going to talk about a group of special plants that can't be found in nurseries and aren't blooming. Given that, we hope you will read on!

When I (Cado) first moved to Arizona from Massachusetts, I was shocked to learn that oak leaves (besides the

Gambel oak) were puny. Oak leaves were supposed to be at least 4 to 5 inches long and almost as wide. Now that I am over my shock about the oak leaves, I have discovered that Arizona has ferns that are not like the ones found in New Hampshire and that some ferns are puny. But size doesn't matter. They are so amazing.

You may have seen the "resurrection" plant sold by novelty stores. This is a plant that is dried and crumpled but when given water comes, literally, alive. Well, many Arizona ferns (and Cochise County natives) can do the same thing in the wild. One of the most enchanting events for me is to go for a walk in the Mule Mountains after a rain, on the path I walk just about every morning, and poof! The hillside is covered in ferns that weren't there before (or so I thought). But they were there all the time, crumpled up, just waiting.

Here are a few of our special ferns that grow one foot high or less. They grow in mountain canyons. Look for them in shady crevices, on shady and sunny slopes, and in surprising places.

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



The 22nd Annual
High Desert Gardening &
Landscaping Conference

High on the Desert



March 12 & 13, 2015
Cochise College
Sierra Vista, Arizona

An educational experience for everyone with an interest in gardening. For information contact U of A Cooperative Extension 1140 N. Colombo, Sierra Vista, AZ (520) 458-8278, Ext. 2141. www.ag.arizona.edu/cochise/mg/events.htm A registration fee is required. The fee is \$65.00 for one day or \$100.00 for two days (\$120.00 after February 15), which includes a hot breakfast and lunch both days. Scholarships are available. Registration begins early January and ends March 6.

(Ferns continued from page 5)

Southwest biodiversity website). This fern has leaves in groups of three leaflets hugging the dark brown stem. The leaflets are oval and leathery, unlike the divided leaves of many other Arizona ferns.

Next time you take a hike in the mountains after a rain, look around and maybe you will see these small, fairy-like ferns unfolding for just a short amount of time, like the mythical village Brigadoon, enchanting us before disappearing again.

Cado Daily, M.A.
Water Resources Coordinator

Mimi Kamp
Botanist, illustrator, herbalist

manding and easy to grow. They need little water in the winter. During the growing and flowering season, water regularly and feed once every three weeks with half strength rose or tomato fertilizer. The common name of *K. tubiflora* is “Mother of Thousands.” New plants are grown from the plantlets that form on the end of every succulent leaf or from runners in spring.

That is the overall description on the way these plants grow, but now I will come to the actual story I have to tell about this plant. As this plant is a tender perennial and considered a houseplant, I keep it in my house. Twice a year, my house plants go outside to be hosed down and washed off. This is a good thing to do and they will be thankful for doing it as it washes off the dust and some of the insect pests that might have been attracted to the plant. That is how I found out how invasive this plant really can be. As we had a very mild winter last year, this plant has survived and is growing everywhere close to the location where it was

hosed off. It is growing in several pots between the plants in them, and under my chairs and tables. Normally, this plant sends out tall stalks that carry umbrellas of red tubular flowers that are really attractive in early spring. Well, now the way this season has gone with the long warm fall, three tall flower stalks have developed outside, close to my house and the tubular flowers are starting to get red. Under my trumpet vine, the flower stalk is almost three feet tall—what a show! Of course, when we get a freezing night, I will cover the flowers with some burlap, as I know the hummingbirds that stay in my garden all year long will absolutely love them. In most places they are growing, I will not give them any protection as it will be interesting to see how hardy this plant really is.

Angel Rutherford,
Master Gardener,
Photographer



(In a Desert Garden continued from page 4)

species that now is included into the family of *Kalanchoe*. *Bryophyllum* have different requirements than other species of the *Kalanchoe* family. These plants are very unde-