



The Virtual Gardener—No Water Veggies: Part 1 A Book Review

The other day I was looking through a list of free Kindle books on Amazon and saw a book with the intriguing title, *Gardening Without Irrigation: or without much, anyway* (by Steve Solomon, ValdeBooks, Jan 2010). My curiosity was aroused, so I downloaded the book. I must admit I wasn't prepared to find much of anything in it that would be useful to High Desert gardeners, but I was pleasantly surprised. Here's what I found.

Steve Solomon is a respected author of numerous gardening books, former owner of a successful mail order vegetable seed business, and a well-known internet personality. *Gardening Without Irrigation* is in the public domain and can be [downloaded from Project Gutenberg](#) in a number of different soft-copy formats as well as from Amazon in the Kindle format. You can also hear the book read to you on a YouTube [video](#).

The book chronicles Steve's gardening adventures in west central Oregon a short distance south of Eugene. He was happily growing vegetables in conventional raised



beds when the output of his well began to fall, dropping from 15 to 3 gallons/minute. There was not enough water to run the large impulse sprinklers for his raised beds, so he had to switch to watering all night with a single small sprinkler. Alarmed, he began looking around for alternatives to his thirsty, densely planted raised beds.

Someone in the local area had grown carrots without irrigation by planting them a foot apart in widely spaced rows, so Steve began to experiment to see if he could grow other vegetables in a similar way. He planted a variety of vegetables spaced widely apart and did not irrigate them. It worked. He even successfully grew a tomato without irrigation! The only problem he noted was that some, but not all, of the plants began to show signs of nutrient deficiency by mid-summer and had to be administered a small amount of liquid fertilizer through a quickly installed drip system. The rest of

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the plants received no fertilizer nor supplementary irrigation. The overall quality of the produce from his no-water garden was good, and although the total quantity of produce was smaller because there were fewer plants, the individual plants produced more heavily. According to Solomon, no- or low-irrigated plants produced about half the yield of eight times their number of irrigated plants.

Steve lists a number of reasons why his low density, no-water gardens worked.

First, there was ample water already in the soil at the beginning of the growing season. The area around where he lived receives about 46 inches of rain annually, over 70 percent of it during the winter. This abundant rain falling in the cooler winter months infiltrates the deep soils found in the region providing a sufficient supply of water to last through the warm, dry growing season. The meager summer rains mostly evaporate from the surface without infiltrating and contribute little additional water to the soil.

Second, his soils were well-textured and without compacted layers to prevent deep percolation of rainwater. The water-holding capacity of soils is heavily dependent upon the sizes of soil particles. Sandy soils have large particles and spaces between the particles which allow water to drain quickly leaving little behind for plants. Very fine-textured clay soils can hold immense amounts of water but may hold it so tightly that the plants cannot extract it. Loam soils whether or not admixed with sands or clays provide the optimum water-holding capacity for growing plants.

Third, by planting his vegetables far apart and keeping the ground bare between the plants, he minimized the loss of water from the soil while still providing adequate water to the vegetables.

Earth Day April 22

On Earth Day, enjoy the tonic of fresh air, contact with the soil, and companionship with nature! Walk through the woods in search of emerging wildflowers and green moss. Go outside, no matter the weather!

-The Old Farmer's Almanac

The wide spacing gives the plants plenty of room to develop broad and deeply penetrating root structures to efficiently mine water from the soil without competition from close neighbors. Keeping the ground bare between the plants eliminates evapotranspiration losses from other plants (e.g., weeds)—the most significant path for loss of soil water—and allows a dry layer of “dust mulch” to develop on the surface, providing a barrier to losses through direct evaporation from the surface.

Fourth, he used the proper varieties of plants. Many of the varieties commonly available in stores today have been bred to grow best in densely planted, highly irrigated beds. Many heirloom varieties, on the other hand, were bred in the past when gardeners were less dependent on heavy irrigation and relied more on rainfall.

Steve's book is chock full of useful information and practical tips for no- and low-water vegetable gardening. I strongly recommend you take a look at it.

Next month we'll take a look at Solomon's methods from the standpoint of gardening in the High Desert.

Until next time, happy surfing!

Gary Gruenhagen, Master Gardener
virtualgardener@cox.net

Cuttings 'N' Clippings

✿ The next Cochise County Master Gardener Association meeting will be **Thursday, April 12** from 2:00 to 4:00 PM with a field trip to BJ Searcy's home to visit her hoop houses. Directions will be sent out via email or contact Valerie at: valeriedavidson@email.arizona.edu or the Cochise County Master Gardeners web site at:

<http://cals.arizona.edu/cochise/mg/>

✿ Water Wise will be holding a Drip Irrigation Clinic on **April 7**, a Graywater Workshop on **April 14** and the UA Family Day on **April 21**. For information contact Valerie at: valeriedavidson@email.arizona.edu or 520-8278, Ext 2141.

Check out the Water Wise web site for their 2018 schedule at: <http://waterwise.arizona.edu/>

✿ AZ Native Plant Society meets **Friday, April 15**, 5:00 PM, Cochise County Community Development Office, 4001 E. Foothills Drive, (Corner of Highway 92 and E. Foothill Drive) Sierra Vista.

The topic this month is: *Small Wonders: A Look at Many of the Rarely Seen Flowers in the Local Plant World*. The speaker will be Frank Rose, botanical author (*Mountain Wildflowers of Southern Arizona* and *Mountain Trees of Southern Arizona*), artist, photographer, and naturalist who returns to the AZNPS Cochise Chapter meeting to speak on his latest project consisting of a photographic documentation of the rarely seen flowers in the local plant world.

For more information, follow AZ Native Plant Society on their web site: <http://www.aznps.com/chapters/cochise/cochise.htm>

April 21—UA Sierra Vista Happenings!

Master Gardener Spring Plant Sale

Ready, Set, Get Planting! The days are getting longer and the soil is beginning to warm. Spring fever is on the upswing and folks are starting to work on bringing refreshed vitality into their yards and gardens. And just in time, the Cochise County Master Gardeners are having their Spring Plant Sale on Saturday, April 21 which also happens to be the end of Earth Week.

The event will take place at the University of Arizona Sierra Vista campus, 1140. N. Colombo. The **Plant Talk** will begin at **8:45 AM** in the Pubic Meeting Room of Groth Hall and will briefly cover each plant for sale, discussing care and growth habits of each plant such as size, sun and water requirements, flowering habits. and general gardening tips.

The **Plant Sale** will begin at **10:00 AM** and run through **2:00 PM** in the new Pavilion in the Discovery Gardens just outside of Groth Hall. The sale will feature more than 90 varieties of Arizona native and desert adapted plants to include trees, shrubs, perennials, vines, ground-covers, cacti, and succulents. Many of the plants for sale will offer seasonal flowers to provide nectar for hummingbirds, butterflies, and other pollinators. Also featured will be a nice collection of fruit trees suitable for our High Desert such as peach,

fig, pomegranate, cherry, plum, and pear.

All proceeds from the Master Gardener Plant Sale will benefit the ongoing development and maintenance of the Discovery Gardens at UA Sierra Vista which will be on display during the sale day. Master Gardener docents will be available to answer questions about the gardens.

The Discovery Gardens, Cochise County's first educational demonstration garden, feature a variety of theme gardens such as hummingbird/butterfly, cacti & succulent, native plant, hot color, a pink garden, a moonlight garden, an evergreen garden, a shade garden, a backyard display, and more. The Healthy Living Edibles theme garden displays ten different ways to grow vegetables and herbs such as in-ground, vertical gardens, tower gardens, container gardens, and raised beds.

The Discovery Gardens also feature a 20,000-gallon rainwater harvesting tank and offer ideas in container gardening, use of solar lights, bird habitat, and garden art.

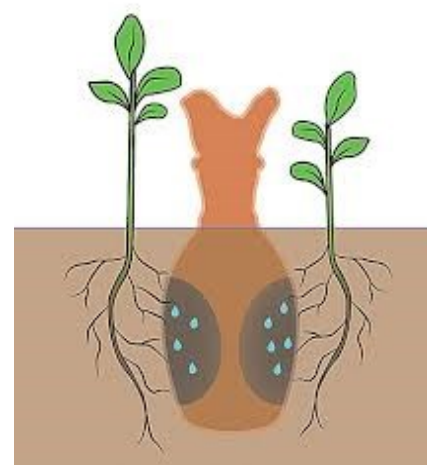
There's a lot happening Saturday, April 21 at University of Arizona Sierra Vista! For more information call the Cooperative Extension office on campus at 520-458-8272, ext. 2141.

Jan Groth, Master Gardener Program Coordinator

Family Day at the UA

The UA Cochise County Cooperative Extension is excited to announce that in conjunction with the Master Gardeners Annual Spring Plant Sale on Saturday, April 21st from 10:00 AM to 2:00PM, a community event will be taking place—Family Day at the UA! This fun, free event will have activities spread all throughout the UA Sierra Vista campus, including; a 4-H petting zoo, free raffles, face painting, Kona Ice, a Water Awareness Month (WAM) exhibit, as well as games and activities by UA Cooperative Extension Water Wise, Snap-Ed, First Smiles youth programs, and UA Sierra Vista programs. There will also be a book sale at the UA Sierra Vista bookstore.

Along with the Spring Plant Sale in the beautiful Discovery Gardens, there will be kid's activities as well as an Olla Sale, featuring Ollas hand-crafted by art students from Bisbee High. Ollas



are unglazed clay pots which are buried mostly underground to slowly seep out water, efficiently feeding thirsty plants at their roots. There will also be an Olla

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2017 Plant sale in Discovery Pavilion

Save the Date—April 21

(Family Day continued from page 3)

making station for the crafty among you by the Water Wise WAM Exhibit, which will feature water saving demos and a variety of water conservation materials.

Another special feature of this year's Family Day at the UA is an out-of-this-world Astronomy Day Celebration at the Patterson Observatory! This celebration will feature solar viewing through several telescopes with members of the Huachuca Astronomy Club, allowing visitors to safely observe sunspots and solar prominences (weather and solar activity permitting) while learning how telescopes work. In addition, visitors can walk a scale model of the inner solar system across the campus and examine the observatory's main telescope, science displays, demos, and videos. Kids can also get free stickers and temporary tattoos from the NASA Space Place!

Lastly, in addition to Kona Ice, we will have Woody's Food Truck with their delicious nachos, pulled pork, steamy hot dogs, and more, as well as Sparky's Food Truck with their delicious vegan specialties!

For more information on the Family Day at the UA, feel free to contact the UA Cochise County Cooperative Extension at 458-8278 ext. 2141 or email valeriedavidson@email.arizona.edu.

*Rebecca Dailous
Senior Instructional Specialist
Water Wise Youth Program*

High Desert Conference Thank You!

To all of you who attended or donated to our 25th annual High Desert Gardening & Landscaping Conference, we want to extend a sincere thank you for your support and enthusiasm for the Conference. We're also grateful to our wonderful group of speakers who are so important in teaching and inspiring all of us. It was indeed a pleasure to see so many returning attendees as well as all the "conference first-timers!" Thank you all!—from your Conference Planning Team.

The Gardens are Waking Up!

The Discovery Gardens are beginning to show their Springtime Awakening! While some trees are still sleeping from their winter naps, many of the perennials are showing activity and the Gardens are already buzzing with hummers, butterflies, bees sphinx moths, and lots of feathered visitors. Stop by for a stroll through the Gardens.

*Jan Groth, Master
Gardener Program
Coordinator*



Parry's penstemon



Carolina jessamine

Return of the Turkey Vultures

For the next several issues of the Master Gardener newsletter, we will be featuring articles excerpted from the *Fun Facts about Turkey Vultures including recipes from Bisbee's finest eating establishments*, a quirky booklet created by Cado Daily, Mary Ann Germond, and Marian Weaver. The booklet is available at the San Pedro House and various locations in Old Bisbee.

“Yuck” is the usual response when talking about Turkey Vultures. But, they are really cool birds, and we should celebrate them!

Around the second week in March, Turkey Vultures migrate to southeast Arizona for the summer. The majestic dark birds circle warm air thermals and herald the coming of spring. Appropriately, too, they herald renewal. The return of the Turkey Vultures reminds us of the circle of life because of the important role they play as nature’s “refuse workers,” cleaning up and helping the recycling of death into life.

Turkey Vultures receive legal protection under the U.S. Migratory Bird Treaty Act of 1918. We cannot harm or kill the birds, but can deter or remove them from areas by Humane actions (good to know if the birds roost in a tree over your car!).

For a bird that has a unique syrinx that inhibits vocalization, Turkey Vultures have a lot to say (we have taken the liberty of translation). “Hiss” - this is my carrion, “grunt” - OK, you can have some too, “wheeze” - I can’t believe I ate the whole thing, “whine”- you have more than I do. And these words describe the Turkey Vul-

ture’s ways of gathering: “committee” - a group of roosting Turkey Vultures, “wake” - a group of feeding Turkey Vultures, and a “kettle” - a group of circling Turkey Vultures in a thermal, similar to water swirling in a boiling kettle.

The scientific name for Turkey Vulture is *Cathartes aura* (kath-ARE-tis OR-ra). “Cathartes” comes from the Greek word “kathartes” meaning “cleaned” or “purged” (like “catharsis”), and “aura” from Latin and Greek meaning “cleaned breath.” Or, not quite so literally, the name probably means the Turkey Vulture purifies the air by disposing of stinky carcasses. The Turkey Vulture’s common name come from its bare, red head resembling that of a turkey’s bare head.



Photo: Cado Daily

The Turkey Vulture is the most abundant and wide-ranging bird of prey. At a minimum, their global population is estimated at 4.5 million birds. There are six subspecies of Turkey Vultures. *Cathartes aura aura* is found in the American

southwest and Central America.

What do Turkey Vultures look like? They are large, dark brown birds easily mistaken for ravens, crows, eagles, and hawks. One bird most easily mistaken for the Turkey Vulture is the Black Vulture. The Black Vulture is stouter, has black underwings and a featherless black head. The most visible distinction between the Black Vulture and the Turkey Vulture is the adult Turkey Vulture’s featherless red head (black as a juvenile) and two-tone sliver and dark brown underwings as seen in flight.

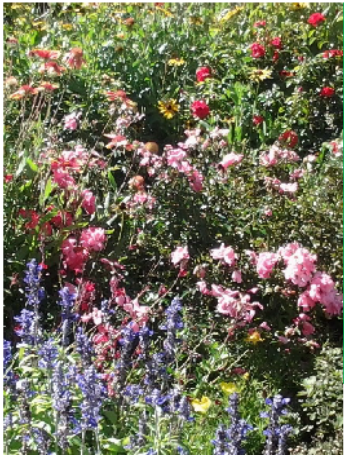
The wingspan of the Turkey Vulture from tip to tip is about six feet and average weight of a bird is about 3 pounds. The wings are narrower than a Black Vulture’s and Zone-tailed hawk. Turkey Vultures are often seen standing with spread wings. The vultures could be drying out after a damp or rainy night, getting warm, or baking off bacteria. The bill is pale beige and hooked (for ripping into you know what....). You can see right through its nostrils to the other side.

Sometimes predatory birds will be in a kettle with Turkey Vultures to disguise them from potential prey. Zone-tailed hawks will cryptically fly with Turkey Vultures. Although the hawk’s underwings are two-toned like the Turkey Vulture, if you are watching a thermal for intruders, look closely and you may discover a Zone-tailed hawk by its white and black banded tail.

In the next month’s MG newsletter we will talk about Turkey Vulture flight, migration, habitat,

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Cochise County Master Gardeners' 4th Annual Spring Plant Sale



**Saturday,
April 21, 2018**
◆ 8:45 am Plant Talk
◆ 10:00 am—2:00 pm
Sale of Native & Desert
Adapted Plants
All proceeds from the sale to benefit
The UA Discovery Gardens

Plant talk presented by Jan Groth,
Master Gardener Program Coordinator.
You will learn the growing habits and
care of many plants suitable for grow-
ing in our area.
Sale will begin at 10:00.

Talk is in the PMR at Groth Hall.
The Sale is in
The Discovery Garden Pavilion
both at UA Sierra Vista,
1140 N Colombo Ave, Sierra Vista



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Photo: Carolyn Gruenhagen

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and breeding. If you are anxious for more in-depth information about Turkey Vultures, there is a wonderful book recently published by Kate Fallon, *Vulture, the Unloved Bird* available at

Bisbee's Copper Queen Library and local bookstores.

Cado Daily, Guest Author
Water Resources Coordinator,
Water Wise Program – Retired!
University of Arizona Cochise
County Cooperative Extension

April Reminders

- ⇒ Stake new trees (see related article [here](#))
- ⇒ Fertilize
- ⇒ Prepare for pests
- ⇒ Add new plantings to your garden



Cochise County Master
Gardener Newsletter Editor
Carolyn Gruenhagen