



The Virtual Gardener—Aldo Leopold

Last month I took a two-day Cochise College field trip to southwestern New Mexico to visit the Gila Cliff Dwellings National Monument. Our first day's journey took us to Safford, up US Route 191 (once infamously called US Route 666), and over Mule Pass via Arizona and New Mexico state routes 78. We stopped for lunch at the Aldo Leopold Vista Picnic Area (see photo on Page 6) just inside the New Mexico border where we had a beautiful view of the magnificent Gila Wilderness Area and learned a little about Aldo Leopold.

I would like to share with you some of the things we learned about this remarkable man who was truly one of the guiding lights of the environmental movement alongside Thoreau, Muir, Carson, and others.

Leopold was born in Burlington, Iowa in 1887. Even as a boy he was drawn to the outdoors and his interest in nature drew him to Yale where he received a master's degree in forestry in 1909. He spent nearly the next two and a half decades in the US Forest Service, serving much of that time in the national forests of Arizona and New Mexico. In 1933 he left the Forest Service to join the faculty

of the University of Wisconsin at Madison. In 1935 he purchased and restored the run-down, sixty-acre farm near Baraboo, Wisconsin that is so eloquently described in his now classic book, *A Sand County Almanac*. He died of a heart attack in 1948 while assisting a neighboring farmer in fighting a grass fire.

Here are a few of Leopold's accomplishments:

He virtually created the science of game management out of whole cloth and held the very first professorship for that discipline when he joined the faculty of the University of Wisconsin. His interest in game management came as an epiphany during his second year of service with the USFS as he watched "a fierce green fire" dying in the eyes of a wolf he had shot in the Apache-Sitgreaves National Forest. At that moment he came to realize that predators and prey are both necessary to provide a balance that nature needs. Read Leopold's own description of the incident [here](#).

In 1922 he proposed the Gila National Forest be administered as a wilderness

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area to remain forever in a natural state unspoiled by human machines or construction. His proposal was passed into law by Congress in 1924, creating the first such wilderness area on the planet. In 1964 Congress expanded Leopold's concept of preserving wilderness areas with the passage of the Wilderness Act. Under this Act, United States has now created wilderness areas in 44 states and Puerto Rico, over 700 in total, and at least four other countries have also created such areas. You can read Leopold's concept of wilderness areas in his own words [here](#).

Leopold's philosophy of a "Land Ethic" is perhaps his most enduring legacy to the environmental movement. In his book, *A Sand County Almanac*, he defines "ethics" as the tendency of interdependent individuals or groups to evolve modes of cooperation. He describes a morally proper relationship between humans and the land—soil, water, plants, and animals—to be a cooperative one where humans are not above but part of the land. You can read Leopold's own definition of the Land Ethic as excerpted from *A Sand County Almanac* [here](#).

If you would like to learn more about Aldo Leopold, check out the [Aldo Leopold Foundation](#) website where you can read about his life and work. You may also want to watch a 13-minute trailer of a full-length video of his life called [Green Fire](#) that previously aired on Public Broadcasting Television. And of course you can read *A Sand County Almanac*, a copy of which is available in the Cochise County Library System.

Until next time, happy surfing!

Gary Gruenhagen, Master Gardener
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A Very Happy Accident

You see, I LOVE pickles—you know the kind that simply shout: DILL and GARLIC—the ones that make you sit up and take notice.

Well, in accomplishing my Bucket List dream of growing my own cukes for pickles, I stumbled on something fun. Just to make sure I had enough cukes to pickle, I planted one hundred seeds (oh my!), and considering the jungle of vines spewing cukes, I would say I could cross that one off my list. I planted four rows of seeds in one 4 by 12 foot "raised" bed with a 4 foot section of hog fencing between each row as a trellis. Thinking

there would be a wee bit of lonely ground between the rows, I planted a handful of mixed sunflower seeds. What a delight to see the vines use up all the trellis and just keep on going—right up the sunflower stalks. Have you ever picked cucumbers off of sunflower stalks? Well, it's a loving relationship, indeed...a new aspect to companion gardening.

For all you dill pickle lovers out there, I want to share this tried and true zesty recipe from a second generation farmer's wife, Donna Getchel, of Osceola, Wisconsin. Donna has departed but lives on with us in each and every one of these delicious pickles.

Deborah Hargrove
Master Gardener

DONNA'S ITALIAN DILL PICKLES

Wash cucumbers & jars. **Important:** make one jar at a time & keep jars, liquid & lids HOT but not boiling.

Mix together:

- 1 quart cider vinegar
- 1 cup canning salt (I use sea salt)
- 3 quarts water

Heat to boiling. Lower temperature and keep HOT.

In each jar add in this order:

- Sprig of fresh dill
- 1 teaspoon alum
- 1 clove garlic
- 1 hot pepper

Pack in cucumbers

Cover with liquid mixture. Wipe rim and seal jar immediately. Let stand to seal. If any jars don't seal, you can keep them in the frig! Start the next jar and seal, etc.

Author's Preferences:

1. 10 pounds of cukes = 10 to 11 quarts of pickles
2. If doing 10 pounds, prepare 1½ x the amount of liquid (brine)
3. I use 2 cloves of garlic per jar depending on size of clove
4. I use extra fresh dill per jar
5. I use 1 fresh cayenne or 2 small dried cayenne peppers

Be patient! Let each batch 'brew' for at least a month for the BEST dill pickles ever...I promise.



Tools of the Cactus Propagation Trade— Part 2

Continued from August 2016 . . .

9. **Tongs.** Keith showed us a variety of tongs he uses to gently grab plants ranging from the shorter kitchen tongs to the longer ones folks would use outside at a barbecue grill. Large medical forceps are a variation on this theme. He said they are great for removing debris that gets caught in cactus spines. He found hemostats hard to use, but he has some saying it almost takes two hands to release the catch on those.

10. **Scissors.** Keith uses plain old scissors for a variety of things and sharp needle-nose pruners to clean up plants. The pruners come in a nice carrying case he can slip on his belt. Something similar to misshapen scissors is a contraption called a fishhook remover. It has a grip like a caulking gun, a long barrel looking part, and then a tiny grabbing device on the end of it. He said it's great for reaching among plant containers to lift out the lighter ones. You can get these in the

fishing department of a big box store and they aren't expensive.

11. **Plastic bags.** These can be used when germinating seeds. Place a pot planted with seeds in a clear plastic bag and create a tiny germination container. The plastic bag keeps the humidity constant and allows you to see what is going on as the seeds germinate.

12. **Paper Envelopes.** Keith uses small coin envelopes to store seeds. This allows the seeds to dehydrate and keeps them from rotting. He said to use a glass jar only if seeds are really, and he emphasized really, dry. Don't forget to label them, too.

Keith gave us plenty of other tips on propagating cactus and succulents. If you ever get a chance to learn from him, you'll find he is brimming with information. He obviously enjoys sharing his love of prickly plants.

Terrie Gent, Master Gardener

(Editor's Note: Here is a [link](#) to a handy dandy Cactus Handler featured in the October 2008 Master Gardener Newsletter.)

Cuttings 'N' Clippings

✿ For information on the Cochise County Master Gardeners, go to the web site at:

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

or contact Valerie at:

valeriedavidson@email.arizona.edu

You can also follow them on Facebook at: www.Facebook.com/CochiseCountyMasterGardeners

✿ Join Water Wise on **Saturday, September 10, 9:00—Noon** at UASV for a lecture on Arizona Domestic Well Owner's Workshop presented by Dr. Janick Artiola, UA Water Quality Specialist and Gary Hix, former Pres. Arizona Water Well Association. Check out the Water Wise web site to see what else is happening in 2016 at:

<http://waterwise.arizona.edu/>

✿ The Cochise County Fair is September 22—25 at the fair grounds in Douglas, AZ.

Fall Plant Sale!!!

The Master Gardener Fall Plant Sale is set for **Saturday, September 17**, at the University of Arizona Sierra Vista Campus. A plant talk on the growth characteristics of each of the native and desert adapted plants for sale will begin at 9:00 AM in the Public Meeting Room in Groth Hall. The Plant Sale will begin at 10:00 AM on the SHADED, front north patio right outside the Public Meeting Room and continue through 2:00 PM. We have redesigned the traffic flow for the sale on the patio to avoid some of the "bottle-necks" during check-out we experienced in the past.

All proceeds from the Plant Sale will benefit the Discovery Gardens at the U of A Sierra Vista. We have come a long way in the last year developing these demonstration gardens which offer theme gardens, pollinator concepts, landscape concepts, educational and motivational ideas, and our brand new 20,000 gallon rainwater harvesting tank.

And remember—fall is the best time of the year for planting the majority of our native and desert adapted species! Yes...the best time! The air is

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September Reminders

- ◆ Keep on watering!
- ◆ You can always plant something—try cool season veggies
- ◆ Start shopping for bulbs

30 Great Landscape Plants for Fall Planting

This list and the description of the plants was compiled by Jan Groth, MG Program Coordinator and Jodi Sharp-Webb, Master Gardener. It can be found on our web site or you can click [list](#) to find it.

Annual Xeriscape Tour October 8, 2016

Water Wise and the Master Gardeners are developing plans for this year's Xeriscape Garden Tour to be held in five or six garden sites throughout Sierra Vista. Four to five homes will be featured. The commercial site this year will be The Discovery Gardens at the U of A Sierra Vista. Yes! This will be our first official day the Gardens are open to the public!

We are on the lookout for home gardens and landscapes which feature native and high desert adapted plants in varieties and settings that will be inspiring and educational for our visitors. If you have suggestions for a site that you think would be a great stop on this garden tour, please make note of the address and contact Rebecca Dailous in the Water Wise office at 458-8278, ext.2150, or contact Jan Groth in the Master Gardener office at 559-7078 or jangroth@email.arizona.edu

Watch for final plans for the 2016 Xeriscape Garden Tour in news releases and in next month's Cochise County Master Gardener Newsletter. This is another wonderful event to put on your calendar!

Jan Groth, Master Gardener Program Coordinator

A Lovely Flower With a Bad Reputation

The Sacred Datura (*Datura wrightii* or '*metaloides*) is a beautiful member of the Deadly Nightshade family. So let's get that bad reputation out of the way first. All of its tissues contain alkaloids, chemical compounds that can be fatal if ingested in sufficient quantities. Therein lies the important phrase "in sufficient quantities." All parts of the Datura plant contain the alkaloids atropine, scopolamine, and hyoscyamine. All these drugs are used routinely (in appropriate quantities) in modern medicine, and Datura has a long history of use in Native American medicine and shamanism. Atropine is used widely in anesthesia, scopolamine is used as an anti-motion sickness remedy, and hyoscyamine is used as an anti-spasmodic in ulcer treatment. However, don't try this at home. Those same alkaloids can cause hallucinations, delirium, and 'complete inability to differentiate reality from fantasy'. But as a pharmacist, and a Cochise County Master Gardener in training, I am irresistibly drawn to both the beauty of the Sacred Datura flower and its medicinal and religious uses.

The Sacred Datura has been used since ancient times by spiritualists, holy men, witches, and medicine men and women. Mystics and sorcerers in the East Indies, Greece, Arabian and Asian countries, India, and our desert Southwest have reached for otherworldly hallucina-



tions via this lovely flower. In more modern times, recreational users have attempted to achieve visionary states with it, with varied outcomes, leading to that bad reputation I was talking about. Peter J. Furst said in his book *Hallucinogens and Culture*, Sacred Datura exists in the form of a deity, or god, called the Kieri Person in the beliefs of the Huichol people of Mexico. "With enchanting music he lures the unwary and bids them taste of his leaves, his flowers, his roots, and his seed. But whoever obeys his wiles suffers insanity or death." However, Sacred Datura has served as an important medicine among the Indian tribes of the desert. It was made into a paste or ointment by the Zunis for use as a "pain killer in setting broken bones or dislocation, alleviating localized pain and even relieving toothache."

Datura wrightii, also called jimsonweed or devil's weed, is a perennial herb found in all the major deserts of the American Southwest. The large, trumpet-shaped, 5-petaled

blossoms bloom for only one summer night each. The luminous 6-inch long bright-white flowers tinged with lavender, open at twilight on magical moonlit nights, releasing a strong lemony scent. Sphinx Moths are its main nocturnal pollinators, but other insects arrive the following morning to enjoy the pollen at the heart of the trumpet. The magnificent flower fades by noon the next day. A plant of great beauty, Datura grows in sandy washes, arroyos, and along roadsides. As a native, it requires no additional water, and can be easily propagated by seed from its dried seedpods. If grown in a pot as a specimen plant, it will require some watering to prevent drooping.

The Sacred Datura blossom has been a visual inspiration to artists, in addition to spiritualists and mystics. It appears in paintings by Georgia O'Keefe, for example. Perhaps it was the inspiration for her comment, "When you take a flower in your hand and look at it, it's your world for the moment." Welcome the spectacular Sacred Datura into your garden and you may enjoy the beauty of its world as I have.

References

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Kris Williams, RPh, Master Gardener

It's a Bloomin' Cochise County Native Plant of the Month—The Devil's Claw

The intriguing monsoon-blooming Devil's Claw, or Unicorn Plant, has been attracting human attention for centuries. Its family, the *Martyniaceae*, includes five New World arid land genera, most with hooked seed pods, wide-throated flowers, and glandular, mucilaginous, cold and clammy hairs which earn the label 'protocarnivorous' (hairs capturing insects but not digesting them). This group was once considered part of the Old World Sesame family.

The devil's genus *Proboscidea* has many species in tropical America, and a handful in the US and Mexico. These latter center mostly in the southwest, but reach into many states. Arizona's two species include a wild black-seeded annual, a domesticated white-seeded variety of this annual, and a yellow-flowered perennial.

P. parviflora, our most familiar Devil's Claw, has pinkish tubular hollow stems, large roundish horizontally-held leaves which shelter the whitish or pink flowers held beneath. This flower has magenta blotches on its upper lobes and a wide yellow landing pad/nectar guide that leads into the mysterious throat. This pathway is recognized by pollinating carpenter and bumblebees which are large enough to brush the stigma on the roof of the floral throat as they squeeze in to sip nectar. The small female *Perdita hurdi* bee has been observed cutting holes in the sides of closed flowers to enter and collect newly ripe pollen. She is not big enough to touch the stigma when entering an open flower, but in the floral mouth she may be pounced upon by the male

of her species. The ensuing double-sized tumble can brush pollen grains onto the expectant stigma above.

The curving green seed pods, a native food, are delicious cooked or pickled when immature, but later become fibrous and hard. As summer slides towards fall, the single-clawed pods, now brown, hanging under the withering roof, dangling against the stem tube that smells like bodily fluids, begin to emerge from their skins which shrivel, split and fall to the ground. Each single claw splits into two hooks and eventually falls, to grapple legs...or hooves which crush the double-chambered pods.



Survival is completely dependent on seed. The pod is designed to expect drought as well as hope for rain by holding its seeds for different lengths of time. When the claws

spread or are gently pulled apart, the first seeds fall out, ready for the next monsoon; the rest are held tightly in long rigid compartments not easily pried open. It takes years of exposure (or more hooves) to weaken these chambers enough to release the reserve. If the first seeds are not met with a favorable monsoon, the second can provide another chance. This two-phase strategy is some small insurance in an arid land.

The white seeded annual, *P. parviflora* var. *hohokamiana* or O'odham Devil's Claw, demonstrates the intense relationship of Devil's Claw to humans. It sports monstrously long claws no doubt enhanced by centuries of selective breeding. O'odham to this day split the claws and use them to create the distinctive black designs in their baskets. During the last century and possibly before, the southern Arizona basket-maker peoples traded seed with tribes in surrounding states, and the variety is presently found far afield.

The Western Apaches, as well as the O'odham and Pima, consider both black and white seeds good snack food, savoring the white 'milk' released when the seeds are chewed. Containing high quality oils and protein, these seeds were also boiled. They are still regarded by Apaches as a reproductive or sexual tonic, and thought to help eyesight. There is much native taboo and joking around the sexual implications of the Devil's Claw. Girls have sometimes been discouraged from

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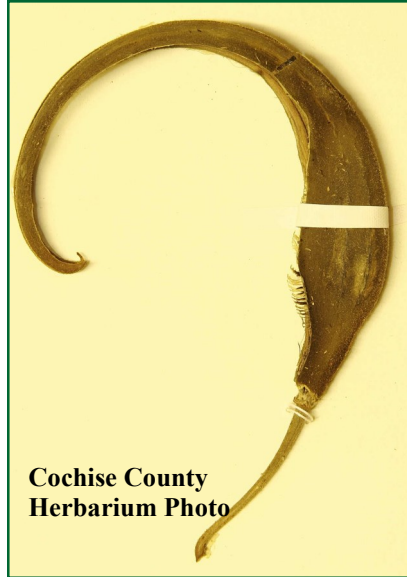
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eating seeds for fear of bearing only boy children, or none at all.

The perennial *P. althaeifolia*, is more prostrate and holds its larger yellow flowers above the smaller green shiny leaves. The flower has dark yellow and bronzy splotches in the throat and several parallel orange-yellow nectar guide lines. Its survival strategy is twofold: both seed and a large tuberous moisture-storing root that is commonly spindle shaped, but I have found them with long cylindrical roots growing horizontally for many feet, even yards, not far below the soil surface. Many I found were dug out, exposed, and eaten by animals. I only could find rabbit prints—no javelina? This yellow root was once a staple of the Seri who peeled it and ate all but the bitter core which was used as cattle feed in Mexico. I planted a section of that root on the

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Carolyn Gruenhagen



Cochise County Herbarium Photo

most arid sandy part of my alluvial land and it sprouted easily.

All species enjoy alluvial flats and bottomland. The annuals can ascend rocky hillsides and both love disturbed areas, sand, gravel, and adobe soil. And they catch gnats! Why not give it a try...and play with the devil!

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Cochise County Herbarium

www.cochisecountyherbarium.org

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cooling down and new plantings require less water on a continual basis to get started, yet the soil is still warm for root growth. Fall plantings can then use their energies in the remaining warm soil to become established so that when spring arrives, they can concentrate on growth, rather than “catching their breath” from new planting right before the long duration of heat and wind begin.

Another good reason for fall planting – autumn plantings have to deal with fewer pests and less disease than in the hotter months.

Best of all, the autumn months offer cooler temps for US! It’s fun and invigorating to be outdoors in your garden during Fall in the High Desert.

So put **Saturday, September 17** on your calendar for the Fall Plant Sale. There’ll be trees, vines, shrubs, perennials, cacti/succulents, and groundcovers for your gardening delight. Celebrate the Fall Planting Season!.

Jan Groth, Master Gardener Program Coordinator

Gila Wilderness as seen from Aldo Leopold Vista Picnic Area
Photo by Gary Gruenhagen



“A
thing
of
beauty
is
a joy
forever.”

-John Keats