

## Roots & Shoots

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Traveling Gardener

And many more!!

Cover by Kirsten Carter

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Maricopa County



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Via Linda Senior Center  
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## Invasive Species - Quagga Mussels in Arizona

A considerable segment of the public especially a large percentage of casual boaters and anglers remain uninformed about a number of **invasive species that exist in Arizona's water bodies.** Take the Colorado River for example; Quagga Mussel, an invasive bivalve was first discovered at Lake Mead in 2007. They have quickly spread to other **reservoir systems in the Lower Colorado River.** Lake Havasu's Parker Dam is currently the most affected Bureau of Reclamation dam on the lower Colorado River.

Quagga Mussel (*Dreissena bugensis*) is a small freshwater bivalve mollusk. Overall quaggas are rounder in shape and have a small byssal groove on the ventral side near the hinge. Color patterns may vary widely with black, cream, or white bands. They usually have dark concentric rings on the shell and are paler in color near the hinge. These mussels can form massive colonies potentially causing a shift in native species and disrupting the ecological balance of the water body. The colonies can also block water intakes, affecting municipal water supply, irrigation and power plant operations.

Efforts are underway by federal and state agencies to control the spread of this invasive species. After years of infestation a chemical toxicant for lake-wide control of quagga has not been developed mainly because it would be deadly to other aquatic life forms. Pre-chlorination has been the most common treatment for control, but if this method is used to control multiple species the amount of chlorine used may reach hazardous levels. Another alternative has been potassium permanganate, especially for drinking water sources, even though chemical controls are not the most environmentally sound solution. A promising method of control is using what may be a lethal bacteria, *Pseudomonas fluorescens*. It is a common soil bacteria found everywhere but harmless to humans.

What can you do? Boaters should take the following steps each time they visit a waterway anywhere in Arizona:

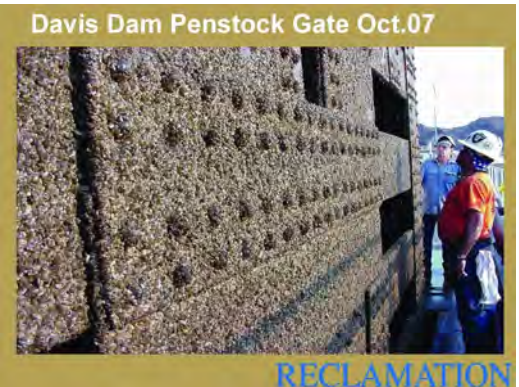
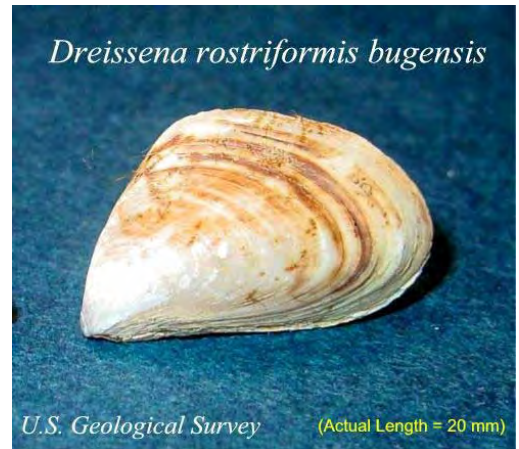
Before launching into the water:

- Thoroughly dry the boat, engine, trailer, livewell and bilge spaces or
- Power-wash the hull of the boat and its trailer and
- Flush bilge spaces with 140 degree water or household vinegar

Before leaving the water:

- Drain the water from the boat, live-bait well and the lower unit
- Clean and remove all plant and animal material from the hull and trailer
- Dry the boat and inspect all surfaces

Boaters are urged to wait five days before launching their boats at another location. This will aid in killing microscopic quagga larvae.



# DON'T MOVE A MUSSEL

Lakes Havasu, Mead, Mohave, Pleasant and the Lower Colorado River are infected with quagga mussels.



**These pests damage boats, fisheries, recreation areas and water systems!**

**Before launching in this or any other body of water, please:**

- Thoroughly dry the boat, engine, livewells and bilge spaces or
- Power-wash the hull of the boat and,
- Flush engine, live wells and bilge spaces with 140° water or vinegar.

**Before leaving this lake, please:**

- Drain the water from boat, livewell and the lower unit.
- Clean and remove all plant and animal material from the hull and trailer.
- Dry the boat and inspect all exposed surfaces.



Visit [www.azgfd.gov/mussels](http://www.azgfd.gov/mussels) for more information.

Images and info courtesy US Bureau of Reclamation, USGS, SRP

**WHO: Jeff Lee**

Gilbert Water Conservation Specialist Jeff Lee teaches numerous landscape irrigation workshops throughout the valley to homeowners, landscape professionals, and property management staff. Jeff has designed, installed and maintained landscapes and irrigation systems, from commercial to residential to freeway landscape water management and everything in between.

Jeff began his career in the green industries in 1983 mowing lawns and installing sprinkler systems in Minnesota of all places. In 1986 he came to Arizona finding himself once again in the landscaping industry chasing mowers and dragging rakes. Jeff soon settled himself back into the irrigation side of things, not that chasing mowers is a bad thing. After spending many years working for contracting and property management firms Jeff spent 2 ½ years working at Rainbird's technical services division assisting end use customers, contractors, and distributors in solving irrigation problems over the phone. Jeff was also trained and certified in the Golf Division central control software and hardware to support those customers as well.

In 1998 Jeff went to the light side by working at the City of Mesa Water Conservation Office helping internal customers save over 750,000,000 gallons of water on the parks, roadways, and medians of Mesa. In 2006 Jeff moved to the greener pastures at the Town of Gilbert Water Conservation Office. So far he has helped internal and external customers save more than 200,000,000 gallons of water.

**WHAT: Maximize your irrigation system; Happy Plants with Less Water**

We'll hear the latest on irrigation, new gizmos and their uses and strategies on living with your existing system. Having a well designed irrigation system is important to use the least amount of water possible to keep the landscape healthy. In most cases we end up with whatever was installed. Often that means a system that performs poorly and is masked by excessive water use. Learn how to identify the performance robbing problems in your system and what to do about them. You may be surprised, ripping out the old system and starting over is rarely needed.

Jeff will bring samples of some of the products (emitters, etc.) to pass around so that MGs can see them up close. He'll give us some information on our local water supply, introduce us to smart controllers and give us a good survey of the changing landscape of managing our watering habits via our irrigation systems. If you think this one is a repeat of previous talks, please consider this. There is always new information. Best practices do change and Jeff Lee keeps up on this and will help us do the same.

Come to this update for tips, tricks, techniques and some new products to make your plants happier with less water. If you're considering abandoning your old drip or sprinkler system, give Jeff Lee a listen first. You may be able to improve your existing system sufficiently.

**WHEN: JUNE 14, 2012, Thursday morning, 9:00 AM**

**WHERE: at the extension office, 4341 E. Broadway Rd., Phoenix**

## Diggings in the Garden

by Pam Perry

Summer is here! Thermometers reach into the triple digits, and seeds have sprouted again! There are summer gourds, trial greens, standbys such as okra, basil, Hibiscus sabdariffa, lima beans, and Armenian cukes. The asparagus has matured to great green ferny fronds. Tomatoes and peppers have ripened, and bush beans have made an appearance. This year we have a family heirloom bean variety called Rebecca Rabideau. It germinated quickly, and is producing tender, tasty, creamy pods with reddish blotches. Potato plants expired in the triple digit heat, but hidden treasures waited underground for the curious to dig. Mmm --- *fresh* spuds; so tasty. **It's a treat to be able to harvest real "new potatoes."**

A garden visitor shared that she plants potatoes in containers in September for a harvest of new potatoes at Thanksgiving! That could be worth a try! In other gardens, summer squashes have gone from mere sprouts to harvestable produce! Someone asked if I save hollyhock seed. NOT! Hollyhock seed is ubiquitous and available almost year round. Should MGs, Herb Association members, Rare Fruit growers or other extension volunteers want hollyhock seeds they are certainly welcome to collect some anytime they are on the grounds for a class, update, volunteer opportunity, or just passing through.

Gail Morris is hoping to work on the butterfly garden project on the Desert Trail. She hopes to have more plants available for a fall planting. Please contact Gail should you wish to help with this, and watch for list serve announcements for workdays and times!

Several agents and other members at the extension office have expressed an interest in how to best use the grounds around the MCCE. They have formed a Committee, and invited me to a meeting. Hopefully we will see new and interesting volunteer opportunities and maybe even some advanced training programs for **us!** Who knows, the sky is the limit when staff has new ideas and can procure funding!

Root knot nematodes have been diagnosed in the demo garden. No longer will transplants of seedlings from **this garden be offered to MG's, visitors, or at classes... and I do not** suggest helping yourself! Should you use your tools in the demo garden please take time to sterilize them before using them other places. Rinse tools well to remove all soil before leaving the MCCE Demo garden, and apply a 10% bleach solution, or alcohol for sterilization. Nematodes impact plant health and productivity.

Soil solarizing is a researched and documented procedure for controlling many soil problems. Although nematodes travel easily thru soil, we will follow guidelines outlined in <http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn74145.html> as the initial means to control populations. The ground has been cleared and clear plastic tarps have been requested. Soil tests performed for the May update indicated high salt concentrations in the vegetable garden. It is a tribute to compost that we grow and harvest anything. Studying ways to mitigate these salts is on the agenda!

These nematodes do not make root vegetables dangerous to eat. When cleaning root vegetables harvested from infected soils be sure to wash them in the sink and make sure to clean your sink well. Do not put peelings, parings, or any leafy parts that might have soil on them into compost, as it could contaminate the compost and be spread in an ever widening area. Remember, no diseased plant materials should ever go into your compost!

I wish to thank Amy, Janice, and Rebecca who transitioned from evenings, and all of the morning crew who gardened in May. While I traveled and visited far away gardens, they carried the ball by keeping the compost cooking, harvesting, weeding and seeding.

## Roots & Shoots

### Traveling Gardener, wandering, wondering, noticing... Jardin De Cactus

by Linda Larson

Cactus, succulents and rock are familiar features in South-west gardens. As a desert dweller, I assumed there were no more beautiful cactus gardens other than the ones here in the Sonoran desert. That idea was turned upside down on the other side of the Atlantic Ocean.

In Lanzarote, one of the Canary Islands of Spain there is a beautiful cactus garden. This garden is the creation of Cesar Manrique (1920-1992). Cesar, a Spanish citizen born on this island, was a painter, designer of wind toys, sculptor, ecologist, contemporary of Andy Warhol, and a gardener.

Cesar had great respect for the landscape of Lanzarote. As an ecologist, he wanted to protect the natural beauty of the Island. He had a well-established reputation in his artistic life when he committed himself to the protection and conservation of Lanzarote. He lobbied for respectful and sensitive planning in development of the island. One of his last creations is the Jardin de Cactus.

This artist had an inspired view of an uninspiring landscape. The Canary Island of Lanzarote is a creation of volcanic action providing a black, mostly flat, rocky and dry environment. Cactus plantations were growing in the area to cultivate the cochineal beetle, a parasite to the cactus, used to manufacture a bright red natural dye. In **the early 1970's Manrique obtained a section of land once used as a quarry for volcanic rock.** He dug down, shaping an amphitheater to create his terraced garden. He created an artistic spatial garden with monolithic standing stones and over 1000 varieties of cactus and succulents.

Every feature of the garden is visually beautiful. The entrance gate shaped as a saguaro and the window niches framing the view are works of art. You enter at the top of the garden and descend down one of two winding stone staircases to walk on pathways paved with smoothed sections of volcanic rock. The circular space is terraced into five levels. The plants are planted in pulverized black volcanic bits.

Cactus plantings are placed to weave you through the floor of the garden. Ponds provide reflective surfaces for the clouds overhead. Cactus and Euphorbias provide flowers, texture and dimension. Manrique planned every aspect of the garden, such as uniform pots marching up a staircase with variation provided by the plant within each



## Traveling Gardener Continued...

pot. The chandeliers used in the cafe and gift shop were his creations and modeled on cactus forms. Even the doors of the toilets were uniquely designed with stones clearly designating the genders.

Described by the Manrique Foundation guide as full of creative energy and ideas for the future, Cesar Manrique died in a car accident in 1992 at the age of 73. This artists' final work is a living masterpiece.

Nature continues to shape the garden as plants grow and change shape, but it remains a spatial masterpiece of natural materials, placement and plants. It left me in awe of such beauty. Traveling away from my garden provided me a new way to view a familiar combination of cactus, succulents and rock.



*Images courtesy Rich Larson*

### **Shade Tree Workshop By Katrina Farris**

The Valley Permaculture Alliance is gearing up for a couple of summer shade tree workshop only events.

#### **Saturday, June 23**

Shade Tree Workshop: Earn volunteers hours at our "Ask the Expert" booth and help SRP customers choose the best shade tree that suits their needs and desires. Location: PERA Club (Tempe). Sign-up here: <http://www.signupgenius.com/go/10C084FAEAD2BA46-srpshade3>

#### **Saturday, July 21**

Shade Tree Workshop: Earn volunteers hours at our "Ask the Expert" booth and help SRP customers choose the best shade tree that suits their needs and desires. Location: Chandler-Gilbert Community College. Sign-up here: <http://www.signupgenius.com/go/10C084FAEAD2BA46-srpshade4>

#### **Saturday, August 25**

Shade Tree Workshop: Earn volunteers hours at our "Ask the Expert" booth and help SRP customers choose the best shade tree that suits their needs and desires. Location: Fountain Hills Learning Center. Sign-up here: <http://www.signupgenius.com/go/10C084FAEAD2BA46-srpshade1>

A Tucson landmark, the 10-acre Mission in the Sun, at the foothills of the Santa Catalina Mountains, is now **on the National Register of Historic Places. Built by Arizona artist Ettore "Ted" DeGrazia and modeled after haciendas on Mexican ranches, this unique studio and home is now his resting place and a tribute to the man, his work and vision.**

A southwest style sanctuary, the Mission in the Sun, is open to the sky. Its adobe walls are embellished with murals of sweet-faced cherubic children; its altar a shrine for relics and mementos lovingly placed by its many visitors. Desert trees, cacti, brittlebush and succulents dot the landscape. Nearby, an old building with few rooms, the original house, is now an open air museum with life-size portraits and photos of the artist, his wife and friends. Original Mexican-style tile work protects the floor moldings between the few rooms and brings color to the kitchen. A pathway leads to a small museum which now features local artists. Ocotillo fencing, a variety of sculpture and an old fishnet covering a wall lend a whimsical air to the landscape.



**The main museum, The DeGrazia Gallery of the Sun, is the centerpiece of this artist's garden. DeGrazia built the large gallery using traditional adobe bricks crafted on-site, so his work "would feel good inside." The gallery houses more than 15,000 original works including oil paintings, sculpture, watercolors, ceramics and furniture, including tile-topped tables and other unique and colorful pieces. This "indoor garden" of the main museum is designed with colorful tile work, water features, stone and tile flooring, unusual furniture and sculpture. It explodes with a colorful mélange of patterns, shapes and designs in a mixture of Southwest and Mexican styles. Is there anything he couldn't design, form, paint or build? It seems not, because his talent, passion and vibrant enthusiasm radiate from every piece.**

The outdoor garden at The Gallery of the Sun is the natural desert landscape interwoven with his architectural work, picturesque wooden fencing and sculptural pieces. He started it as a construction project in the 1950s. Following a regional tradition of building a chapel or shrine as thanks for the land, he built his adobe chapel at the foot of the mountains. His friends made the traditional adobe bricks from straw and mud, and he hauled the water to the then-remote site in his Model A. The buildings, sculpture, pathways, fencing and outdoor living areas are natural extensions of the desert. The organic wholeness of the landscape and his **creations is a work of art in itself, and characteristically expresses DeGrazia's passion for the land, the indigenous cultures, and their ultimate bond.**

*If you go* – the gallery is located at 6300 North Swan, Tucson, and is open daily 10 am – 4 pm. Exit east from I-10 at Orange Grove Road and continue east on Skyline Drive to the gallery. There is no admission charge. Also see [www.degrazia.org](http://www.degrazia.org).

## Reporting System

*By Kristen Wagner*

In January 2012, we converted to a state-wide reporting system. If you have not created an userid and password for the system nor entered any hours, please do so soon as we are almost half-way through 2012. To access the page, please go to URL: <http://cals.arizona.edu/exact/volunteer/>.

Initial userid: acevol@cals.arizona.edu  
Initial passphrase: UNeed2ChangeIt!

The userid and passphrase need to be entered exactly as above. You will need to update your userid/email address, password, and enter some contact information before you can begin. We do appreciate you filling out as much information as possible as this assists us in our programming. For example, we are applying for a grant that requests the number of volunteers over 50 years old and we were able to get a fairly accurate number by using some of the profile information. Please note, the userid and password for this system is different from your MGCentral information.

We have also consolidated the categories as there is a Comments section in which you can enter specific program information, or the event for which you worked. The categories are (listed in alphabetical order):

- Collaboration Projects - projects not sponsored by the UA Master Gardener program, such as working at Desert Botanical Garden, garden clubs, etc. Please note the specific group in the Comments section.
- Extension Demo Garden - working at any portion of the Demonstration Garden at the Extension office. Please note the area in which you worked in the Comments field.
- General - any Master Gardener sponsored activity that may not fit in another category. This may include administrative tasks, like filing and entering other people's volunteer hours into the computer. Again, any specific notes can go in Comments.
- Public Response - Answering questions from the public or providing information to the public. This would include answering telephones at the offices, Ambassadors, etc.
- Public Training - Providing educational opportunities to the public, like the Citrus Clinics, Real Gardens for Real People, Desert Garden Institute, etc.
- Research Projects - working with Kelly on specific research projects, as assigned.

All categories also include an Other option, which you can choose and enter the specific information in the Comments box. For Educational hours, there is an open field in which to enter your activity. Please specify via the radio button whether it is an University of Arizona/Master Gardener sponsored publication or event versus a non-sponsored event, like a water conservation talk through Chandler, Mesa, Surprise, etc.

Records of volunteer service and continuing education must be submitted via the online system. Retain documentation of hours volunteered for personal records. Update the web site or office file at least quarterly (preferably monthly) for volunteer and education requirements prior to December 31. Hours must be entered by Jan 15th for the previous year (i.e. hours for 2011 must be entered by Jan 15, 2012). This information is also found in MGCentral under the Hours tab and instructions including screenshots can be found at <http://cals.arizona.edu/maricopa/garden/mgcentral/uploads/HoursInfo.pdf>.

If you have any questions or experience any problems while using the system, please contact Jesse Davenport, the MG Administrative Assistant, at 602-827-8200 x308 or [jmdavenp@cals.arizona.edu](mailto:jmdavenp@cals.arizona.edu) or myself at 602-827-8200 x311 or [krwagner@cals.arizona.edu](mailto:krwagner@cals.arizona.edu)