



Mohave County Master Gardener Program

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Featured Article

by

Bill Stillman, Bullhead City Master Gardener, Emeritus

Loss of Plant Life – Stuff Happens

As the Bullhead City Wind and Weeds recap said “it has been a tough year”. Pertaining to my plant life, it sure has. This summer I lost several hardy shrubs and trees. “We blame it on the Dog” (from the movie 10). Well, I actually think the root cause for the plant loss could have been due to one or two of the utility companies (water and power) in our city.

Utility Companies must maintain their equipment. This is a given. When the water companies or electric utility companies turn off the services to your area, your automated irrigation system could be affected. If you use irrigation controller (timer, clock) for setting the intervals (frequency) and duration (run time) the loss of electricity or water during what was to be your irrigation cycle could cause plant stress and, sooner or later, plant death. Like all good master gardeners, we try to conservative water and not over-irrigate our plants and we set up our irrigation cycles accordingly.

For example, if you have very sandy soil you might have to water your fruit trees every 3-4 days in the

heat of the summer months. If your water supply is interrupted during your irrigation cycle due to the water company working in your area, or if a power outage occurs (some controllers will not catch up with the valves missed) the trees affected by the outage will go from a 3-4 day cycle to a 6-8 day cycle. One way to prevent one of the two scenarios is to install a battery back-up for the controller, eliminating the electrical end of the equation. By using a battery back-up, the electrical power being off for a short period of time will not affect the irrigation timer. For the water service being turned off, there is not much you can do for back-up.

As a preventative measure for the water and electrical interruptions you could perform a daily test for soil moisture. You could use some mechanical means of testing such as a soil probe, hand held soil moisture meter or the touch and feel method. Other options for soil moisture testing are to install Irrrometer Soil Tensiometers, or another type of continuous soil moisture monitoring system. Soil Irrrometer Tensiometers measures soil water tension (see footnote). I was using Irrrometers for years to establish irrigation requirements, but maintaining them long-term is another story.



What I suspect happened to my trees was loss of water during an irrigation cycle. I have a battery back-up installed which can run the systems more than 30 continuous hours without any ill effect. Here is a clue about the possibility of a water interruption to my service area. I had been away and when I returned I noticed a newly patched area to the roadway on my street. This gave me my visual clue that perhaps the water supply line had been turned off for repairs (possibly over a several-hour period).

Two major citrus trees about 18 years old succumbed to this lack of sufficient water (summer stress) as did several desert adapted plants. I had the citrus roots and soil tested for plant pathogens with negative results. I made the decision to pull and replant. During the trees removal, I did an inspection of the root system and the vascular bundle of the two citrus trees. No damage was found during my inspection. The roots looked healthy and hardy as did the vascular systems. In hindsight, I might have been able to save these trees but did not want to try since they were under so much stress (they dropped more than 80% of the leaves). With the two citrus trees being denuded and exposed to the elements my major concern was the trees succumbing to sooty canker at a later date.



Other plant life lost during the summer months were one Vitex tree and several Cassia shrubs. The Vitex was on a 15-day irrigation (maybe on the edge) schedule and the two cassias were on a 4-6 day cycle. The Vitex tree saw full afternoon sun as did the Cassias. One might ask, how can you not see the plants go into stress? In my case there are some seventy-five non fruiting plants in my desert landscape area, including five large desert adapted trees. In the fruit area there were 12 citrus trees--some old, some fairly new, and some 50 pomegranate bushes. There are two irrigation controllers supplying about 25 irrigation zones. The controllers are split between desert landscape type plants and fruiting plants.



The lemon and other trees that did survive were also affected, but their closer proximity to the desert-adapted landscape provided them with additional shade and kept them sufficiently alive to make it through the unexpected reduction in irrigation and subsequent stress.



An obvious resolution to this situation could have been to monitor the soil conditions more closely, every day, morning and night. Linn Mills, University of Nevada Cooperative Extension and founder of the Southern Nevada Master Gardener program, used to advocate “casting your shadow on your garden every day”. In the summer months with continual 115-degree heat that remedy may be harder on the gardener’s body and health than is possible, particularly as we humans involved with the garden are also getting a little more age on us, and are ourselves less tolerant of heat stress!

Footnote: The Irrometer Tensiometer is the standard in accurate soil moisture measurement, offering growers an inexpensive and reliable means of measuring soil moisture for irrigation scheduling. An Irrometer will measure the actual soil water tension, which indicates the effort required by root systems to extract water from the soil. Because the Irrometer is a true measurement of soil water potential, the instrument is not affected by salinity and does not require site calibration.

(<https://www.irrometer.com/sensors.html>)

A Rose Blossom in Kingman on January 9th



Andrew's Corner

Well that was a year, wasn't it? We're all very aware of the Covid-19 situations, but we also had the additional challenges of extreme heat, exceptional drought, and plant die-offs.

While I'm delighted to see 2020 go away, many of the same challenges will continue well into 2021. However, I think good news with respect to a vaccine is closer and we will be able to get to a more normal environment soon.

Sadly, as many of you are aware, we made the decision to cancel the Master Gardener Training Class scheduled for Bullhead City this year. I didn't feel we could provide the same high quality program online as we can in-person; a 3-hour online lecture is grueling, for both students and speakers. I do know we have to make up the Entomology class from last year. I'm working on a solution to cover that class for the 2020 cohort that missed out on that opportunity.

We have also had a couple of changes in leadership for some of our areas. I would like to take another moment to thank Leroy Jackson, BHC, and Dan Alberts, LHC area coordinators. Thank you for your dedication to serving your respective MG groups for as long as you have and continue to do. Moving into their places are and joining Debbie Miller is Dennis

Lesowsky (BHC) and joining Sharon Gomez is Jamie Zimmerman (LHC). Thank you both for stepping into these critical roles.

I have decided to waive volunteer hour requirements for the 2020-2021 MG year. I don't anticipate resuming regular MG activities until well into this spring, maybe even summer. Without regular activities, I find it unreasonable to require volunteers to find those hours. However, I am not the waiving continuing education hours. We have, and will continue to provide, plenty of continuing education opportunities. With that, thank you to all the MG volunteers that continue to field and answer questions from the public.

Lastly, we are in discussions with Mohave County Health Department regarding eligibility to receive the vaccination under the 1B schedule, both Cooperative Extension staff and Designated Campus Colleagues (DCC's/Volunteers). Decisions of this nature can be dynamic, but when we receive a definitive answer, either way, I will let you all know.

Cheers to a better 2021!

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Bullhead City Master Gardeners

Debbi Miller, Coordinator
Dennis Lesowsky, Co-coordinator
Bonnie Muir, Secretary
Bill Stillman, Scribe

Happy new year from the Bullhead City Master Gardeners! We are hoping to start our regular activities soon, and that 2021 will offer fewer surprises than the year we've just ended.

All Library programs were suspended in March and, though we have our programming planned from January through June 2021, we're taking it a week, or one day, at a time. We're ready to go whenever it is safe to do so.

Our biggest activity every Fall is working with Mohave Electric Cooperative (MEC) on their Cool Shade event. Each September customers of MEC are able to purchase desert type trees at a reduced price. The purpose of this tree sale is to encourage customers to plant these trees on the south and west sides of their residences, thus helping to reduce electrical demand during the summer months. Customarily in October we present a "How to Plant Your Cool Shade Tree" event at the Library. The Library event had to be canceled due to Covid however we did volunteer at the tree dispersal in November when the trees were being picked up by those who had preordered them. We handed out planting instructions and answered questions from many of the locals, particularly those new to the area. Over two thousand trees were sold and picked up this year. The actual loading of the trees was done by students from the local high school service clubs. Everyone was properly masked and practiced social distancing, and the event ran very smoothly. There was a reduction in the numbers of volunteers working the event this year and we were among the few "adult" groups invited to participate. It was great to get together and we appreciate our close relationship with MEC.



We have had a few calls with "hotline" questions this Fall, and have primarily dealt with them on the phone or by email. The one call we did do in person was regarding a saguaro, and other types of cactus, which were showing signs of extreme stress. The homeowner had been a Master Gardener many years ago. A very tall, multi-armed saguaro was exhibiting "corking" which was working itself up the main stalk of the plant. There was no sign of bacterial necrosis.



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ML Robinson from University of Nevada Extension and Jan Emming, Mohave County cactus expert, both helped us out with the “corking” phenomenon. It was probably due to the extremely hot summers we’ve experienced the past couple of years which caused irrigation water to evaporate more quickly than usual (too little water for the heat) and also sunburn from the more intense sunlight. Eventually the saguaro is doomed, but that could be months or years, so the homeowner will have to decide how great a hazard it will be if the arms fall off or the plant crashes down, and plan the removal accordingly. She also had some palms that were pruned improperly by her landscapers, so she now plans to eliminate the annual fee she pays for that service for the next year or two!

Other phone/email discussions with homeowners included clients who were new to the area and were trying to find a landscaper to suggest what to plant on the virgin lot on which they had built a house. They started out by asking how and where to plant the trees they were buying from Mohave Electric and escalated into a request for us to help design their yard. We gave them an abbreviated course in all the things to consider (lifestyle needs, availability of water, time availability, budgetary concerns, etc.) and sent them the handout we developed for Mohave Electric. There is a need for a reputable landscape designer in this area, but they’d probably have to charge more in fees than the market would bear. Meanwhile, the available landscapers are the same ones driving around town pruning the palm trees to 11 and 1 instead of something closer to 7 and 5.

Another client had 3” lemon and grapefruit plants he’d grown from seed, and wanted to know when to plant them outside. Transplanting them into a succession of pot sizes and working up to at least 1 gallon was the basic answer, but we also brought up the issue of why citrus is grafted onto rootstocks

compatible with our alkaline soil and water here in Mohave County. A non-grafted citrus may not make it, regardless of how ready it is to be planted in the ground.

Another citrus question was from a homeowner concerned about how sick her tree looked. This request started in May (after it had been planted) and continue with Q/A until October when it was recommended to replace the tree with a new healthy one. Topics covered during these email exchanges include how to properly plant the tree, soil moisture testing using a soil probe, irrigation, use of shade cloth, staking (when necessary) and plant selection.

This has been a rough year for our own gardens as well. The aforementioned heat and sun, plus lots of wind, has taken its toll, and all of us lost some mature specimens of many different kinds of plants, from oranges to agaves and everything in between. Even when you think you’re doing everything right, “farming” is not an exact science!

We are very disappointed that the Master Gardener class in Mohave County won’t be held in 2021. Many in our group are taking the University of Nevada classes which will continue after the new year and give us certification to continue our programming in Laughlin once their Library reopens. Like Arizona, the in-person interaction has been severely limited by the Covid numbers in the Las Vegas portion of Clark County.

Let’s all hope that life gets back to something resembling “normal” by the time our next newsletter is published. Happy new year.



Helpful Hints from Container to Ground

by

Bill Stillman,

Bullhead City Master Gardener, Emeritus

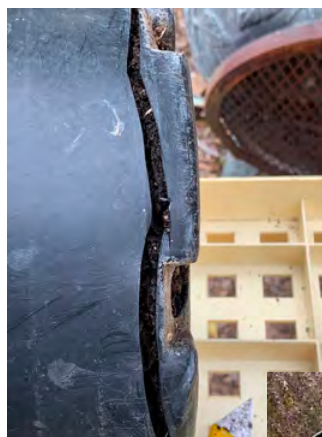
Nurseries used to sell their plants in wooden boxes, burlap root wraps or metal containers. Over time, the metal containers changed to plastic containers. Removing the plants from the metal cans gave you few options. One choice was to lay the container on its side, beat the sides and hope the root ball held together as you removed the plant. Another option was using metal-cutting tin snips or using a special container shear (if you had one). Both exposed the user to the sharp edges of the opened container.

Plastic containers came along sometime in the mid-60's and they worked quite well. Normally one could take the container, lay it on its side, give it a couple of slaps on the side and slide the plant out. Most of the time the entire root ball would hold together, allowing you to place the plant in the pre-dug hole.

Lately, the plants I've been purchasing seem to have been transplanted too soon from a smaller pot to a larger pot, and then prematurely sold by the nursery. When I have removed such plants from the containers I have been finding they lack the root system to hold the root ball and planting medium together when removing the plant from the pot.

Here's a method I've found that works to keep the root ball together. Do not water the plant prior to planting (this adds weight to the planting mix, and additionally adds a pulling tension to the roots). Use a box cutter and cut the rim of the pot on one side only. Laying the container on its side, remove the bottom of the container by cutting completely around the container with your cutter. This will remove the bottom of the container exposing the bottom of the root ball. Leave the plant in the container, and place the container in the pre-dug and pre-watered hole. Now finish cutting the side of the pot from where you

cut the rim and all the way down that side. Spread opens the container and remove it from the plant and the planting hole.



Pots made of cardboard or peat are becoming more prevalent for vegetable-type and small container plants. These are normally small and easy to handle, but it still helps to remove the bottom and slice one side for ease of planting



Kingman Master Gardeners

Linda L Reddick, Coordinator
Melissa Palmer, Co-Coordinator

Hello All -- HAPPY HOLIDAYS!

Winter is upon us -- a welcome time for some and not so much for others. Are you aware you can slow a Master Gardener down, but you can't stop one? Due to the virus we, as a group, have been halted: no workshops, no personal client calls, no meetings; but as individuals we've been industrious. Furthering our knowledge, we have been attending webinars about soil, raised beds, scale, pollinators, insects, native plants, invasive plants, bees and many other topics. I am very impressed with the number of education hours Kingman Master Gardeners have logged in viewing webinars, expending their knowledge.

The best part is that they have not just been viewing all these subjects, many of them have put their new and old knowledge to work. Izzy build her first raised bed with cement block and used old irrigation hose and rebar as a brace for the row cover.



Mary C started preparation for a new flower bed removing old vegetation and conditioning the soil. Cathy B expanded her hydroponics and is growing broccoli, cauliflower, lettuce, bell peppers, hot peppers and even has tomatoes setting.



(KNG Continued from page 7)

Mary M has undertaken re-landscaping their yard with new shrubs and plants. Nancy S is working tirelessly producing the MG videos for YouTube. If you have not had an opportunity to make one, get in on the fun and call Nancy. Don R moved his raised beds from one level of his yard to a second level, then used an existing swing set for a cover frame, if necessary. It's like a green house you can walk in! He also rebuilt a key-hole garden which is ecstatically perfect. Not to mention he is very skilled at moving grown trees from one location to another with an amazing successful survival rate.



Another industrious person, Bob C, has taken 2 gallon buckets with a lid and made bee feeders. He is tending a magnificent swarm of friendly bees.



Now, let me ask, how many of you would take on building a rock wall, 3 feet high and 26 feet long with cemented-in boulders. That's what Shelley is doing, and it looks fabulous. She poured a footing, used a backhoe to move huge boulders into place, then cemented smaller rocks in the empty space. It looks like something you would see at a resort -- beautiful, artistic, and an effective retainer.





As for myself, upon learning we have 7 different types of bees in Mohave County, I built 3 different bee houses in hopes they would over winter. It might have been a little late to set them out, so I may not see any results this spring, but hopefully next year.

Because all of the schools' after school activities were cancelled, I had ample extra winter vegetables plants, some of which I shared with others and as for the rest, let's just say I will have an abundant crop. That will not be a problem as I can share the produce or freeze it.



Unfortunately I was not able to contact all of the Kingman Master Gardeners, but as you can see this has been a busy group. Creating, revitalizing, experimenting, growing and expanding our knowledge, no one here is going to let Covid-19 get them down. Keep on going fellow Master Gardeners! I, for one, am very proud of each and every one of you. We are together in spirit, sharing and caring.

Stay safe, stay busy, stay well
2021 will be a new, bright, exciting, productive year!

Linda Reddick
Coordinator
Melissa Palmer
Co-Coordinator



Lake Havasu City Master Gardeners

Dan Alberts, Coordinator

Sharon Gomez, Co-coordinator

Hello and Holiday Greetings to all. The season is here and it is a bit different than it was in the past as we limit our social activities due to COVID. This group did not have our usual Holiday potluck as we usually do in December. I am looking forward to next year when again we can participate in this annual event. With the emergence of an effective vaccine for COVID, I believe that it is the beginning of the end for this virus. I know that we all are looking forward to normalcy once again.

Our group here in Havasu has had hotline inquiries concerning citrus trees, mesquite trees, mulberry trees, sooty canker, and more. These calls keep us active for now. Hopefully, in the next several months we will be able to conduct Home Garden Day at the Library once again. Lastly, December the 31st, I will be stepping down as the Coordinator of the Havasu group. Sharon Gomez, who has been the Co-coordinator for the past few years, will replace me. Jamie Zimmerman will be the new Co-coordinator. I plan on continuing as a Master Gardener.

Help Save the Desert – Go Hike-Weeding!

by

Sharla Peterson

Lake Havasu City, Master Gardener

2020 was a year to remember ... or maybe forget. One thing I learned in the 2020 Master Gardener course, and in my Lake Havasu City garden, was to be proactive in ridding my garden of invasive Sahara mustard, which I wrote about in the Spring 2020 *Wind & Weeds*. And since being socially distanced in nature is a healthy place to be these days, why not do something that's good for you and the desert? Go hike-weeding! Amy Nickel sent me the article below that told me to do just that – pull up Sahara Mustard in the desert, where it poses a serious threat to native wildflowers (the photos in this article are stunning!): <https://janemming.com/2020/05/20/sahara-mustards-why-i-weed-the-desert-and-why-you-should-help-me/>

As I discovered in my own garden at the Desert Hills area home where we live in winter and spring, pulling up Sahara mustard in winter before it sets seed had a definite positive impact

on the growth of native wildflowers. On hikes in the National Wildlife Refuge down the street from our home, off London Bridge Road north of downtown Lake Havasu City, I found myself pulling up Sahara mustard as I hiked, and wondering if that was okay, but thinking it might be more okay than letting Sahara mustard do what it does – since it's "allelopathic" – it produces chemicals that inhibit growth and reproduction of plants around it.

Amy told me that the author of the article in the link above, Jan Emming, is a horticulturalist who lives in Yucca, and is good friends with ML Robinson who taught our 2020 Lake Havasu City Master Gardener class on native plants. Emming sounded an alert that I want to share, as I had seen that a few minutes of weeding on a mid-winter hike in Desert Hills yielded noticeable growth of the beautiful purple sand verbena, shown below left, in only a few weeks.



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Left, sand verbena, and right, the dreaded Sahara mustard in flower, at a prime time to be removed!

Emming also discussed globe chamomile (stinknet), another invasive plant, which has led to desert wildfires. See links below for additional information on globe chamomile (*oncosiphon-piluliferum*):

http://www.arcadianews.com/local_news_and_features/stinknet-poses-dangerous-threat-to-arizona-neighborhoods/article_3705c9a4-d1c4-11ea-9300-93d4b11e25df.html?utm_medium=social&utm_source=email&utm_campaign=user-share

[\(https://www.cal-ipc.org/plants/profile/oncosiphon-piluliferum-profile/\)](https://www.cal-ipc.org/plants/profile/oncosiphon-piluliferum-profile/)



Photo by Ron Vanderhoff

Rather than restating what Emming has so skillfully described about these two invasive species and addressed in the article, as my takeaway, I will quote the call to action for my fellow associates and master gardeners who may be moved by urgency:

“Even populations [of these invasive species] in between 3 and 6 years old with a small soil seed bank can be reduced 90% the first year and fully extinguished by year two ... Hand weeding small and isolated populations of Sahara mustard [which also applies to globe chamomile] is a highly effective mode of control ... All it takes is one person to understand the threat and take action. For larger invasions a small group of committed weeders working for an hour or two can have essentially the same positive impact.”

Emming’s method is as follows:

“Just make piles [of Sahara mustard/globe chamomile] in an inhospitable, dry, open spot, and pin the pile down with a rock or tree branch.” Emming said they “will dry out quickly in the Arizona sun and be unable to reproduce,” and that you “don’t need to remove it or carry it out, let it dry out and decay in place,” they are “annuals and don’t regenerate from roots if they break off.”

In conclusion, I was inspired:

“After all, doing nothing is precisely how these invasive weeds spread. Anything you do to get in the way of that is a benefit to the ecosystem ... it does work with some sweat equity and elbow grease and targeted effort.”

Go get ‘em, Master Gardeners, and anyone you can enlist who shares this vision. I figure we can make a difference where we are – whether it’s in our neighborhood, or if we are able to travel; or in our local and regional parks, like SARA Park south of Lake Havasu City. We can do something, rather than nothing.

