Events & Activities

MG Association Meeting, Wed., August 18, Cottonwood, 6:30pm. See address page for map. Our speaker will be from Pro-Water Irrigation.

Annual Iris Rhizome Sale Sat, August 7, 2004, 10:00 a.m. until sold out! Sharlot Hall Museum, 415 W. Gurley, Prescott.

Dividing your iris this year? Consider donating rhizomes to the Prescott Area Iris Society for our sale. To donate rhizomes or for more info call 776-7217.

Yavapai Rose Society - August 16, 7:00 PM, First Christian Church, 1230 Willow Creek Road, Prescott. The program is on how to prepare roses for exhibition. For more information call Bob or Nancy at 771-9300.

Prescott Area Gourd Society, third Thursday of the month, 6:30pm, at the Prescott Library on Marina.

Pond Club - an informal group that meets every couple of months, usually the 3rd week. Email aquaticgardens@esedona.net for more information.

Organic Gardening Club, the 3rd Saturday of the month, 2215 E. Aspen St, 3pm. For directions call 928-649-3451.

Prescott Orchid Society, meets 3rd Sunday of the month, 2pm at the Prescott Library, call Cynthia for more information. (928) 717-0623

Noxious Weeds

This month's newsletter was prompted by a letter I received on the article I wrote on ailanthus a few months ago.

“After reading your tirade against ailanthus trees (known as Paradise trees in our area,) I thought I should speak up in their defense. Along our road, next to the Elks Lodge, Clarkdale, they are all that keeps a steep embankment from sliding down onto our roadway, (along which 5 families live.) They are excellent ground holders.

Our worry is the fear of losing many of them due to a fungus carried on the feet of birds which kills the trees that such birds land on. When we moved into our home in early 1978 there were a few large ailanthus trees in our yard. High water levels killed them all within the next few years.

I’ve heard that Chinese railroad workers carried their seeds in their pockets and spread them in several areas. They were probably planted around Jerome to keep the town from sliding down to Clarkdale.

Perhaps now you will better appreciate their valuable aspects.

Sincerely

Howard Poole

I do acknowledge that plants like ailanthus can have positive aspects and even be beautiful to look at but I also believe that as responsible gardeners we need to look at the overall impact our activities have on the environment. Planting invasive or noxious weeds is always a mistake. (Please understand that I know that most ailanthus are not deliberately planted, they just appear, which is one of the problems with them.) So this month’s issue is devoted to the problem of invasive and noxious weeds.

Nora Graf
Editor
Invasive plant species can easily move from open spaces into residential and commercial landscapes to become established. In other cases, people intentionally transplant noxious weeds from elsewhere to their own property because they think they are pretty. Furthermore, the nursery industry sells invasive plants for their aesthetic qualities without knowledge if their aggressive nature. Whatever the case, this is a serious environmental issue and, as Master Gardeners, we need to become more aware of these plant species and educate others about the threats they pose.

The least guilty parties are those that are ignorant of invasive species. Some people think Dalmatian toadflax (Linaria dalmatica) is a pretty plant, nurture it, and even transplant it. They may think that if it grows wild, then it must be a native. Wrong! Dalmatian toadflax is not only invasive but also noxious (labeled as particularly harmful by regulation or statute). Hikers, vehicles, livestock, and wildlife often spread invasive species when the seeds are unintentionally transported by them. Other people simply pick flowers of invasive species because they are pretty and inadvertently spread seeds to other non-infested areas.

The Nursery Industry is gaining awareness of invasive species. They realize that many plants they have sold in the past are known to be invasive. While many of these are still being sold, others are being phased out. The American Nursery Landscape Association (ANLA) is cooperating with the Federal Invasive Species Advisory Committee to implement voluntary codes of conduct to address invasive species concerns. This effort will focus on education and voluntary action over regulation. The ANLA is also guiding research funds into breeding programs to breed non-invasive cultivars. While these are small first steps, proactive nursery professionals are to be commended.

A nursery that sells listed noxious weed species intentionally can be stopped by the Arizona Department of Agriculture. While this regulation is not often brought into play, it does send a serious message and the offending nursery usually stops selling the plant when they realize the ramifications. The Arizona Department of Agriculture Noxious Weed List is available on their web site at: agriculture.state.az.us/PSD/psd.htm.

In my tenure as a County Agent, I have seen nurseries voluntarily remove plants that are not regulated (i.e. noxious) within Arizona. One of these is salt cedar (Tamarix ramosissima). Salt cedar has received lots of attention in the western US and its threat, especially to riparian areas, has made it very unpopular. Other trees that are invasive and threaten wildlands are Siberian elm (Ulmus pumila), tree of heaven (Ailanthus altissima), and Russian olive (Elaeagnus angustifolia). Some other invasive landscape plants, but not listed as noxious are fountain grass (Pennisetum setaceum), pampas grass (Cortaderia selloana and C. jubata), Scotch broom (Cytisus scoparius), common periwinkle (Vinca major), and English ivy (Hedera helix).

Noxious/invasive weeds are a serious threat to our environment. In Yavapai County we have several serious noxious weeds. If you would like a brochure with photos or other information, visit one of our offices. Each May, I offer an all-day noxious weed workshop to the general public that includes indoor seminars and a field trip to see the impacts caused by weeds firsthand. If enough Master Gardeners are interested, we could schedule a special workshop designed specifically for you.
I often get a burr under my saddle about noxious weeds and invasive plants. However, recent research is showing that we may be able to utilize chemical compounds found in invasive plants to control other weeds. This process, called allelopathy, is an interaction between two plants where one plant inhibits the growth or germination of another plant by excreting chemicals toxic to the other plant. Allelopathy has been known to exist in many species, including black walnut, sagebrush, sunflowers, and tree of heaven. How many other plants have you seen growing under a tree of heaven?

Scientists are working to harness the power of allelopathy and use these naturally occurring chemical compounds to create new herbicides. Spotted knapweed is a noxious weed with allelopathic properties. It is found throughout the West (including some isolate populations in Yavapai County.) A Colorado State University professor, Jorge Vivanco, recently isolated and extracted a chemical compound with herbicide qualities from spotted knapweed roots. The compound is called catechin and Vivanco found that it had herbicidal properties as effective as commercially available herbicides when sprayed on some plants.

Further research showed that in reduced concentrations the chemical only kills select plants while sparing others. That could allow farmers to protect a crop while killing a weed. Or it could be used as a preventative agent by mixing it with soil before weeds emerge. Other researchers caution that the public may see these compounds as being less harmful to humans. This is not necessarily true. Just like other compounds extracted from other plants, catechin and other naturally occurring compounds can be a danger to non-target organisms (humans, wildlife, pets, insects, crops, soil microbes, etc.) I know that when I have handled spotted knapweed plants, my hands tingled afterwards and now I wear gloves when handling it.

As mentioned above, Tree of Heaven (Ailanthus altissima,) also displays allelopathic properties. Locally, people know this tree as the one that keeps the Town of Jerome from sliding downhill and merging with Town of Clarkdale. Italian scientists recently confirmed that a chemical compound extracted from the Tree of Heaven (ailanthone) is toxic to many crop plants. They also identified four other poisons in Tree of Heaven roots. These will also be further researched to determine their usefulness as herbicides. Just smell the leaves of a Tree of Heaven sometime. It is very repulsive.

Salt cedar is another invasive species of concern in the Southwest. It is overtaking many riparian areas including the Verde River. Recently, scientists noticed that salt cedars occurring in the U.S. looked different than those found growing in their native Eurasia. DNA fingerprinting recently confirmed that the most invasive U.S. salt cedars are actually hybrids of two imported salt cedar species (Tamarix chinensis and Tamarix ramosissima.) Their native Eurasian ranges do not overlap. However, importation to other locales has allowed them to interbreed and it appears that hybrid vigor factors into their degree of invasiveness.

Invasive species are a growing problem worldwide. While we are trying to harness the power of invasive species in new herbicides, billions of dollars are still being spent each year to combat the spread of invasive plants. Meanwhile, natural resources are impacted and native ecosystems degraded. This has prompted the Nature Conservancy and other groups concerned about invasive species to start developing criteria to assess a plant’s invasive characteristics. The American Nursery and Landscape Association is also beginning to work on invasive species assessment. As gardeners, we must recognize that non-native plants can have far-reaching impacts.
The 1960’s and 1970’s heightened national awareness about pollution and environmental quality. At least that’s how I remember it. The television commercial showing a Native American man canoeing a polluted stream, looking at litter, then shedding a tear over what he saw was a powerful message. In general, I think we’ve done a good job reducing pollution and improving environmental quality over the last 35 years. Our success is related to the manner in which chemicals behave in the environment. The forces that carry chemical pollutants (gravity, diffusion, osmosis, etc.) are predictable.

Within the last 10 to 15 years, we have begun a new fight against pollution: biological pollution. I first heard this name used at an invasive weed conference and it really makes sense. Biological pollutants are invasive, non-native plants, animals, insects, and other living organisms that decrease our quality of life and cost billions of dollars to control (usually eradication is not possible).

The movement and spread of biological pollutants is much more difficult to predict. They do not follow the rules of physics. To make matters worse, spread of biological pollutants has been augmented by our ever improving transportation network and the expansion of world trade.

In Arizona, we have had first hand experience with biological pollutants. Imported red fire ants have been found in Arizona traveling in contaminated nursery stock. The ant populations were contained, but are still being controlled and monitored. Giant salvinia (a floating water fern) was found in irrigation canals along the Colorado River, where there is little hope of eradication. This plant can double its size in a week, forms a solid mat on top of the water surface, which eliminates light and prevents oxygen from diffusing into the water body. More recently, the glassy-winged sharpshooter (an insect related to leafhoppers) has been found in an Arizona nursery. This insect causes damage to a host of ornamental and agricultural plants, most notably it vectors the bacterium that causes Pierce’s Disease in grapes.

Having an interest in plant science, my attention is usually focused on invasive plants. In our local area, there are several invasive, noxious (state or federally regulated) weeds. In the Verde Valley, we have Dalmatian toadflax, Russian knapweed, spotted knapweed, yellow starthistle, hoary cress (whitetop,) and sweet resinbush. In the Verde River and its tributaries, we have floating water primrose, Eurasian watermilefoil, and probably others.

The Arizona Department of Agriculture is currently revising and adding 16 plants to the Arizona noxious weed list. Several of the proposed additions are plants commonly found in the Verde Valley. These include: tree of heaven (*Ailanthus altissima*), Russian olive (*Elaeagnus angustifolia*), giant reed (*Arundo tenax*), saltcedar (*Tamarix spp.*), Himalayan blackberry (*Rubus discolor*), and Malta starthistle (*Centaurea melitensis*). Citizens are invited to make comments on the rule revisions. For more information, contact Dr. Ed Northam, Noxious Weed Program Coordinator, at (602) 542-3309 or E-mail at ed.northam@agric.state.az.us.

The USDA Animal and Plant Health Inspection Service (APHIS) and Arizona Department of Agriculture are the primary regulators for plant and animal invaders in Arizona. However, many other groups are becoming interested and joining the campaign. The USDA APHIS web site is at [www.aphis.usda.gov](http://www.aphis.usda.gov). The Arizona Department of Agriculture web site is at [agriculture.state.az.us](http://agriculture.state.az.us).

Biological pollution is a serious threat to our day-to-day lives and I encourage you to learn more about it. The University of Arizona Cooperative Extension has publications and information on noxious weeds and non-native insects. Learning to recognize these unwanted visitors is the first step in controlling their spread.
This member of the sunflower family (Compositae) is an unwanted addition to Arizona's landscapes. When I asked Jeff Schalau which noxious weed is the biggest problem in the area, he said Russian knapweed.

Russian knapweed is on the list of prohibited noxious weeds. (Arizona maintains a list of noxious weeds lists are available on the web. (See earlier articles) The plant is native to Eurasia and is thought to have arrived in the United States in the 1900's as seeds in contaminated shipments of alfalfa seeds.

It grows in disturbed soils, spreading in cultivated fields, orchards, roadsides and ditches. Found in nearly every county in Arizona it has a wide range of habitats it can exploit. It grows at elevations that range from 1000 to 7000 feet. The plant displaces native plants and desirable forage species.

Knapweed is a bushy perennial with creeping underground stems. The stems can grow to a depth of two to four feet. Shoots form off the underground stems. Roots have been known to grow down eight feet, making it extremely difficult to eradicate.

The plant also reproduces by seeds. The thistle-like flowers are small, only 1/4 to 1/2 inch diameter. Flowers are pink to lavender and bloom from June to September. Each “flower” is actually a group of approximately 16 flowers. (Members of the sunflower family are distinguished by groups of flowers. What we call a single flower, like the traditional sunflower, the large head with multiple petals and large center are in reality many flowers. Each petal is a single flower along with the center being a group of flowers. Each flower produces one seed.) Since the plant flowers nearly continually through the summer and each “flower” produces 16 seeds, they have a tremendous capacity to reproduce.

It grows one to three feet tall from both creeping horizontal and vertical underground stems. Leaves are different shapes: the lower leaves are lobed two to four inches long, 1/2 inch to 1 inch broad; the upper leaves are 1/2 to 1 1/2 inches long and are narrowly oblong with a sharp pointed tip. Margins may be smooth or slightly toothed.

Once established this plant is extremely difficult to eradicate. It invades fields and is bitter, so livestock will not eat it. Russian Knapweed is also thought to have carcinogenic compounds and gloves should be worn if handling the plant.

Knapweed should be eradicated as soon as plants are found to prevent spreading. Cutting the tops off, mowing, or diskimg several times a year can slowly eradicate the plant as each removal of the top growth reduces the vigor of the plant. Hand pulling is useful only for small infestations and pulling needs to be done at least three times a year—spring, fall and summer. Various herbicides will also work to eradicate knapweed. Check the label; but the most readily available herbicide for home use, Roundup, does kill knapweed. If you find it in your yard, remove it immediately; otherwise, you and your neighbors may have more than you ever wanted.
Yavapai Gardens Now On-Line
The Yavapai Gardens (this newsletter) is now available on-line. (http://ag.arizona.edu/yavapai/ant/hort/master-gardener). Due to rising printing and mailing costs, we will soon be discontinuing distribution of the paper copy of Yavapai Gardens to in-active volunteers.

Meeting Schedule
There has been some changes to the Association meeting schedule, so please mark your calendar!

August 18, Cottonwood
September 15, Prescott, elections
October, No meeting, MG Conference will take the place of the October meeting.
November, MG Picnic, date to be scheduled.

Volunteer Opportunities

Yavapai County Fair (Prescott Valley)
Need MG volunteers to staff the Cooperative Extension both along w/ 4H. The fair runs from Sept 16th to Sept 19th. Volunteers will work 2 hour shifts & get free entrance to the fair. Contact Kathy Grant Lilley (e-mail kgrantlilley@cableone.net, 928-445-7196)

Schools
The Volunteer Projects Committee and Cindi Shaffer (MG who has done extensive work with Jr Master Gardener program at a Prescott school) met to better define what types of projects the schools generally ask MGs to assist with. In general, there are 3 types of projects:

#1) After school projects where the MG must be finger printed, submit application & plans, etc.

If you are interested in this, you might want to take some Junior Master Gardener training - Jeff can provide scholarship money if you are interested. Cindi Shaffer is available after August 8th to discuss the Jr Master Gardener program, sources of information, etc. if you would like to contact her (cindi@shafcomm.com, 928-717-0828). If you find a school you want to do this with, please submit a Project Application so we can track what schools are getting MG assistance.

#2) Classroom hands-on presentations that generally take 1 hour, with no security check required

We'd like to have some canned presentations available so that MGs can easily prepare and present specific topics that are geared to specific grades. Cindi Shaffer has offered to conduct a training session is late August / early Sept for MGs that are interested in this. This is an excellent opportunity to learn from Cindi’s experience. Please contact Charlotte Ewalt (caewalt@cableone.net, 928-443-5313) to attend the training.

#3) MG input on what types of plants the school might use in their Wildlife Habitats

Some schools are expressing an interest in developing certified wildlife habitats. We'd like to have a package of material available to MGs who can work with schools when they request MG assistance on selecting plants, etc. We are looking for a MG who would like to do some research and prepare a reference package. There is a lot of information available in the Prescott Extension Office & on the web, you can meet with Jeff Schalau to get his input, get input from Cindi Shaffer on certification criteria, etc. I estimate this to be a 15-30 hour project over a couple month's time. Please contact Mary Barnes (mcbarn1@cableone.net, 928-583-0889)

2005 Master Gardener Class Support - Prescott

* Looking for class assistants who can assist with the sessions (Wednesday mornings, Feb 2nd - May 11th).
* Looking for a Class Coordinator who will be responsible for putting the binders together (can get volunteers to assist), schedule class assistants, purchase refreshment supplies, etc. This work will begin in December.

Contact: Mary Barnes (mcbarn1@cableone.net, 928-583-0889)
I had some space to fill this month and when that happens I start browsing through my cookbooks. It’s an easy way to find something to fill space and I don’t think I know of anyone that doesn’t like to eat. I try to find recipes to highlight what’s in season. This time my browsing brought me to a perfect summertime treat. So browse your garden and enjoy!

Red Peppers Stuffed with Corn and Fresh Mozzarella

- 2 red bell peppers, halved lengthwise
- 2 tablespoons butter
- 1 bunch scallions, including the greens
- 2 1/2 to 3 cups kernels from 5 ears of fresh corn
- 2 tomatoes, peeled, seeded and diced
- 1 fresh mozzarella cheese (4 to 5 ounces), finely diced, or 1 cup grated Cheddar or Monterey Jack
- 2 tablespoons finely sliced fresh basil
- 2/3 cups bread crumbs
- salt and freshly ground pepper
- paprika

Preheat oven to 375°F. Lightly butter a baking dish just large enough to hold the peppers.

If the red peppers won’t stand upright, slice them lengthwise in half, leaving the stem end intact. Steam them for 5 minutes and set aside.

Melt the butter in a large skillet. Add the scallions, corn and tomatoes and cook for 3 minutes over medium heat. Turn off the heat and stir in the cheese, basil and half the bread crumbs. Season with salt and pepper. Fill the peppers and top with remaining bread crumbs. Set them in prepared dish, add a few tablespoons water to the dish, cover, bake until the corn is hot and the peppers are cooked, about 25 minutes. Uncover and brown the tops under the broiler. Dust with paprika and serve.
MG Association Meeting
August 16, 6:30pm, Cottonwood

Speaker: Pro-Water Irrigation

Arizona Cooperative Extension
US Department of Agriculture
Yavapai County
2657 Village Drive
Cottonwood, AZ  86326
Official Business
Penalty for Private Use $300