



# From the Ground Up

A Gardening and Native Plants Quarterly

Colorado State University Extension-Pueblo County

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## WICKED WEEDS

### PURPLE MUSTARD, *CHORISPORA TENELLA*

by Marge Vorndam, Colorado Master Gardener, 1997, Native Plant Master, 2007

Around Pueblo County, spring is heralded in the plant world by the appearance of two notable “exotics” — plants introduced from elsewhere, are very successful growers and so considered weedy in our area. Yellow-flowered Flixweed (*Descurainia sophia*) from Europe, and Purple Mustard (*Chorispora tenella* a.k.a *Raphanus tenellus*) introduced from Asia, color the landscape with masses of lemon yellows and blues along roadsides and in disturbed areas beginning in end-March to mid-May. Both plants are members of the Brassicaceae (Mustard, or formerly, Crucifereae) family and share the identifying characteristics of urn-shaped four-petaled 3/4” wide flowers with two short and four tall stamens. Flowers connect via pedicel to the stem terminal. Flowers are hermaphroditic, actinomorphic, and hypogynous, while also glandular pubescent. Ovaries are two-chambered, and the distinctive slique or silicle pods house the seeds. Here, we will further explore *C. tinella* that has many common names, including Blue Mustard, Purple Mustard, Crossflower, and Musk Mustard.



Purple Mustard Weed

Purple Mustard was introduced into the U.S. from Siberia in 1929 and was first reported in Lewiston, Idaho. It spread from there and was identified in Keith County Nebraska in 1953.

As with most plants, the nomenclature for the scientific name originates from Latin or Greek. For this plant, the Greek "Chori" means "separate", "spora" means "seed", and refers to the constricted seed shape of the seed capsule. "Tenella" means slender and could refer to the overall plant, or flower or seed shape, all of which are slender. The plant was named *Raphanus tenellus* in 1776 by Peter von Pallas (1741-1811) from Eurasian specimens and was then renamed *Chorispora tenella* in 1821 by Augustin Pyramus de Candolle (1778-1841).

This plant is an annual, growing from 1/2 to 2 feet tall. The leaves of Purple Mustard initially form a fleshy basal rosette, are simple or compound, lack stipules, are alternate, petiolate, lanceolate to narrowly ovate, shallowly toothed and are lobed. Stems are multiple from base with erect branching above. The plant is glandular pubescent—glands are slightly yellow-orange on close inspection. The fruits of this plant are terete, conspicuously beaked, on short thick stalks to 5mm long, spreading at

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right angles to stem and then upcurving toward apex of stems, glandular pubescent, to 1.5 “ long total - including a beak to +1.5cm long, and are many seeded. Germinated plants grow from seed in late summer and survive through the winter as the rosette. It is a particular “wicked weed“ issue in areas where annual crops such as winter wheat are grown. Since this plant reproduces by seed, any method preventing the plants from setting seed is effective as a control.

Purple mustard spreads readily from multiple seeds per pod. It is invasive in Colorado, and colonizes in human-made disturbed areas. It has a notably musky odor, and can taint the milk flavor of ruminant animals such as cows or goats that might feed on it. Despite this, it is not on the Colorado noxious weed list, but is included on these lists for other nearby states.

The nectar of the flower is accessible to long-tongued bees, bee flies, butterflies, skippers, and moths. Leaves are edible as an early spring-time salad. No medicinal uses are known.

Although it is an invasive species, the massed blue-purple colors of the flowers along roadsides and in meadows are notable harbingers of spring each year. 🌱



Purple Mustard Weed



### FABULOUS FAMILIES

## GOOSEBERRY/GOLDEN CURRANT OR BUFFALOBERRY— SOME PRETTY SWEET TARTS By Greg Nolan, Native Plant Master, 2010

Perhaps it is the time of year when you start dreaming of some tasty pemmican, or maybe you have been thinking about planting a golden currant or gooseberry or even a buffalo currant. I generally think about this infrequently often. Which is good, otherwise it might keep me awake at night. If it has been keeping you awake at night, after you get an appropriate mental health checkup, just plant a *Ribes aureum* species and you have planted the same plant, by different names, and can then sleep soundly. However, do not get them confused with buffalo bush, silver buffaloberry or buffaloberry as they are the species *Shepherdia argentea*, and they definitely will keep you awake at night.

If your home in Pueblo has a stream, road and a meadow running through it, you are in luck. *Ribes aureum* of the Grossulariaceae family and *Shepherdia argentea* of the Elaeagnaceae/Oleaster family typically grow alongside streams, roads and in meadows in the foothills and montanes of Colorado, and is widespread throughout the western U.S. from Canada to Mexico.

If your Pueblo home does not have a stream, road and meadow, you are still in luck. Both species do well in poor alkaline soil, are remarkably drought tolerant and appropriate for a xeric garden in Pueblo. The golden currant grows 4-5 feet tall and the buffaloberry typically grows 12-15 foot tall. The golden currant will struggle in the hotter, lower elevations of Pueblo and would probably appreciate some shade, water and sandy soil. It should do better in the higher elevations of Pueblo County such as Rye or Beulah. The buffaloberry should thrive throughout Pueblo County.

You are probably very familiar with the Elaeagnaceae family as the Russian olive is in this family, so it should be no surprise that buffaloberry resembles Russian olive. Both have elongated leaves in opposite pairs that tend toward silver green due to fine silver hairs that have a velvety feel. It would be easy to mistake the two plants while young. The golden currant has leaves that resemble an oak tree and are lobed.

Both buffaloberry and golden currant have a rich history of use by various Native American tribes as both have edible berries. The buffaloberry tends to be tart, to say the least, while the



Buffaloberry



golden currant will tend to be sweeter. If you can harvest them before the birds and Euell Gibbons eat them, both can be made into jellies, syrups, pemmican, granola bars, cereal fruit, and sauces. They also dry well and can be stored for later use. Both berries have been used as medicine, dye, and for ceremonial purposes. The buffaloberry berry is bright, and seemingly translucent red. The golden currant berry tends to be yellow to yellow orange but can range to very dark black purple particularly toward fall. Both plants are visited by wild creatures. Deer and elk forage on them, birds eat the berries, and bees get buzzed on the nectar.

Flowers of both plants are yellow while golden currant flowers can also range from cream to pale red. The golden currant flowers have a pleasant nose of spice, vanilla, and clove and have five petals in a circular arrangement around a red or yellow center in clusters of 15 or so. The buffaloberry flowers have a sweet pleasant nose of perfume and no petals but four sepals that tend to droop down around the pronounced filaments and anthers like a frilly, revealing four-part dress or slip and they bloom along the stem. Yeah, these sweet tarts smell good, look good in yellow, will keep you awake at night and need to be in your plant bed.

One place you can try buying these plants is through the Seedling Tree Program offered by the Colorado State Forest Service Nursery (CSFS) through your local CSU Extension office. The only restrictions are that the nursery stock is to be used for conservation purposes only. So, if you need trees for windbreak, to reforest or develop wildlife, check out this program. And, both buffaloberry and golden currant are offered through this seedling program but may be sold out for this year. Please check the CSFN inventory through the CSU Extension Pueblo County website: <http://pueblo.colostate.edu/agri/agri.shtml> for availability. If seedlings aren't available, you can also try propagating from soft-wood cuttings, planting seeds in the fall or stratified seed.

So, like many of the plants we study, the golden currant and buffaloberry can be used to fix and stabilize soil, provide food to living, walking or flying creatures, for shelter, beauty and to add to our enjoyment and the greater good of this world. Happy foraging! 🍷



Golden Currant

**COLORADO MASTER GARDENER<sup>SM</sup>**  
**PLANT SALE**  
FORMERLY THE ZOOTASTIC PLANT SALE  
**Saturday, May 7, 2016**  
**8 a.m. to 1 p.m.**  
**Colorado State Fairgrounds**  
**Colorado Building**

- ☉ Parking available in lot on the corner of Acero and Arroyo.
- ☉ Enter through the walk in gate on Acero.
- ☉ Come early to avoid graduation traffic.

JUST IN TIME FOR MOTHER'S DAY! CHOOSE FROM A WIDE VARIETY OF ORNAMENTALS AND VEGETABLE PLANTS!

**Cash or Check Only**  
Credit cards not accepted. ATM available at Fairgrounds



**2016 Xeriscape Tours**  
OF PUEBLO & PUEBLO WEST



Take a FREE self-guided tour of neighborhood Xeric gardens.

**Pueblo Locations -**  
**Saturday, June 4, 2016 only**  
9 a.m. until 3 p.m.

**Pueblo West Locations -**  
**Sunday, June 5, 2016 only**  
9 a.m. until 3 p.m.

Colorado Master Gardeners and Pueblo West Community Xeriscape Gardeners will be present to answer questions. Garden biographies and plant lists will be available at each garden location.



You are free to visit any and all of the gardens at your leisure and in any order you wish on the date for that community.



## Plants for Pollinators by Marti Osborn, Gardening Educator

It's that time of year again, when our thoughts turn to our gardens and we begin to get excited about what we can do. I don't know about you, but as I've gotten "more mature," I really like spring blooming plants. It makes me smile to see the lovely warm colors popping up from what seemed to be bare ground, or out from leafless shrubs. Springtime also brings many of our native pollinators. When they emerge from winter hiding or, in some cases, where they survive only as eggs and hatch out, what do they eat and where do they find what they need? Fortunately, nature helps by timing all this so that when flowers bloom, there is usually food available in the form of pollen (protein) and nectar (carbohydrates amino acids, and other essential nutrients).

How can we help? We can make sure there is food for those early emerging pollinators. Here are a few of my suggestions and some of my observations, but blooming times and insect emergence times may vary, depending upon the weather. Many of you probably already know some of them, but let's take a look at a few possibilities. Of course, in my yard, one flower has been blooming since late December —Hellbore (Lenten Rose), with its abundant pollen. Crocuses poked their heads up in our yard in mid February, and although I have seen no bees, those little flowers are there for them to provide both pollen and nectar, if they show up!

*Aurinia saxatilis* (Basket of gold) often blooms later, usually in April, and its nectar is especially useful for early emerging solitary bees, hoverflies, and butterflies—morning cloaks are often one of the earliest seen butterflies.

*Phlox subulata* (creeping phlox) blooms about the same time and provides both nectar and pollen for bees. *Penstemon angustifolius* (Pogada Penstemon) blooms in April as well, while *Penstemon strictus* (Rocky Mt. Penstemon) blooms somewhat later. *Pulsatilla vulgaris* (pasqueflower) is an early bloomer. I guess I can't leave out another early one, grape hyacinths

(Musari). This is a great provider of nectar and pollen, but it has a downside— it spreads like crazy, and is hard to exterminate, if you no longer want it! And, it certainly blooms early! Other members of the Hyacinth genus are great early bloomers, as well, attracting a number of different insects, including bees, flies, and an occasional butterfly and wasp. Most of these insects are after nectar, although some short-tongued bees also collect pollen. Bee visitors include honeybees, bumblebees, and native bees.

Crabapples usually begin to bloom in early April, providing pollen and nectar for honeybees and bumblebees. Then there is Oregon grape holly—*Mahonia aquifolium*, which, in my yard, usually bursts forth in a profusion of yellow flowers, in April, providing both pollen and nectar for honey bees, and bumblebees. And last, but not least, *Prunus besseyi* (Pawnee Buttes creeping western sand cherry) blooms in April and May providing nectar and pollen for native bees and some butterflies.

One more important thought—pollinators can find food much easier if it is in mass, so put out plants in groupings! 📌

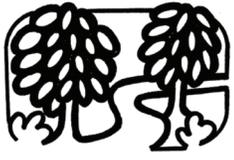
### **Garden Kudos:** Habitat Heroes Designation!

Pueblo is the proud home of two amazing gardens that have been deemed Habitat Heroes by the National Audubon Society of the Rockies. The first is the outdoor garden classroom at the McClelland School. This beautiful garden was created to help the students explore the natural world, and the relationship between plants and animals. The second is by the Gardeners of Cattail Crossing in Pueblo West. Plants, animals, and humans all enjoy this garden that is beautiful year round. Take the time this season to check them out!



Subscribe to this quarterly horticulture newsletter by contacting Carolyn at 583-6574.  
Available in paper and electronic formats.





## GARDEN WALKS

# PUEBLO MOUNTAIN PARK

by Linda McMulkin, Horticulture Educator

I suspect you have a favorite place where you go to feel the sun on your face, commune with nature, and find a quiet space to think. For over two decades, one of my places has been the Pueblo Mountain Park in Beulah, Colorado.

When my family first moved to Pueblo County, we looked for places to play outdoors. Pueblo Mountain Park offered us miles of trails and gravel roads to hike, playgrounds for the kids, and both covered and open areas to picnic while we watched for wildlife. Over the years, I've taken both youth and adult groups to the park on various adventures. But some of my favorite times in the park were just me, a day pack, William Weber's *Colorado Flora*, and a good pair of hiking boots. On every hike, I've stopped frequently to identify the plants and look for the animals that interact with the plants. Over the years, classes on low water landscaping and native plants, plus those hikes in natural landscapes, changed how I garden and the plants that I use in my personal landscape.

So, why is Pueblo Mountain Park such a favorite? For me, it is the amazing diversity of the 600-acre park, and how the plant communities change as I walk the trails that keeps me coming back every season. No matter when you visit, some plant is sure to catch your attention. There are both conifers and broadleaf evergreens to make a winter hike interesting. During the growing season, the tapestry changes weekly, beginning with *Claytonia rosea* (spring beauty) blooming as early as late January, and continuing through the asters of autumn.

The park lies in the foothills, which is the transition zone from the plains to the mountains. In the eastern part of the park, many plains species that are also common at Lake Pueblo thrive, while at the higher elevations the plant community more represents the montane area around Lake Isabel. Plant communities in the park include Pinon-Juniper woodland, shrublands featuring Gable oak and mountain mahogany, Douglas fir and Ponderosa pine forests, and riparian areas along four streams

Of course, there are lots of non-native plants in Pueblo Mountain Park. Some came from neighboring farm land and others may have entered the park during human recreation activities. Many of the non-native plants have blended well with the native plant community but there are populations of several noxious weeds.

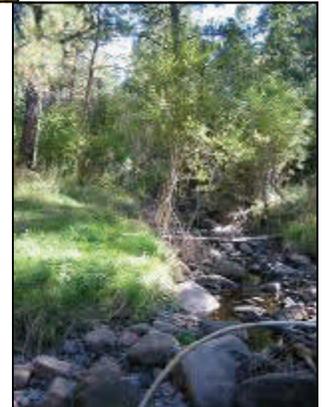
As part of another project, I started keeping records of the plants I found in the park. The list contains over 200 plants in more than 65 families and the list isn't complete yet. I'm willing to share that list or consider additions; you can contact me at [lkmcmulkin@gmail.com](mailto:lkmcmulkin@gmail.com).

Dave Van Manen, founder of the Mountain Park Environmental Center (MPEC), wrote a plant guide called *Plants of Pueblo Mountain Park*. The color photos and descriptions of over 100 of the park's plant species is an invaluable help to both new and experienced plant geeks. You can purchase the book in the MPEC gift shop in the Horseshoe Lodge. Trail maps are available at MPEC or online at <https://hikeandlearn.org/pueblo-mountain-park/trail-map/>.

I believe my walks in natural areas like the Pueblo Mountain Park have made me a wiser gardener, although there is still much to learn. I plan to continue to enjoy the sun, commune with and learn from nature, and find a quiet spot to identify an unfamiliar plant as I take a breather on the park trails this spring. Maybe I'll see you there. 📷



Above: Pinon-juniper woodland along Northridge trail. Left: Ponderosa pine forest on Tower trail. Below: Maples and willows inhabit the riparian corridor on South Creek. Photos courtesy of L. McMulkin.





## INTRODUCING SHERIE CAFFEY—HORTICULTURE COORDINATOR

by Marcia Weaber, Colorado Master Gardener, 2005, Native Plant Master, 2007

Sherie (Sure-ee) Caffey is the new Colorado State University Extension Horticulture Coordinator. She joined the staff at CSU Extension in early December 2015. This is the first opportunity for “From the Ground Up” to welcome Sherie to the office and introduce her to the Pueblo community.

Sherie is a Pueblo native and a recent graduate of CSU-Pueblo with a Master of Science in Biology degree. Her Master’s thesis was on *Mirabilis rotundifolia*, the Round Leaf Four o’clock, that is specific to shale soils at Lake Pueblo. Prior to starting her new position, Sherie worked for the Pueblo City Wastewater Department, and was also a part-time Biology Instructor at CSU-Pueblo and Pueblo Community College.

As Horticulture Coordinator, Sherie will be working with the Colorado Master Gardener<sup>sm</sup> Program and the Extension office’s diagnostic and botanic procedures. She will write monthly columns for the newspaper, participate in community education, and serve as a speaker. Sherie is on an Environmental Policy Advisory Committee for the Pueblo Area Council of Governments and a Food Advisory Council that promotes access to healthy local foods.

Sherie describes herself as “an outdoor kind of girl.” She and her boyfriend enjoy hiking, camping, running, rock climbing and traveling. She also enjoys working in her garden in the summertime. She has two four-legged companions, dachshunds. Please feel free to stop in and meet Sherie next time you are in the area. 🐾



### **Western Landscape Symposium** by Sherie Caffey, Horticulture Coordinator, CSU Extension/Pueblo County

The 2016 Western Landscape Symposium marks the tenth year for gardening and landscaping enthusiasts to come together and learn from knowledgeable speakers. The symposium has been a hit in previous years, and this year has delivered once more with six great speakers having presented at the event.

The keynote speaker this year was Benjamin Vogt owner of Monarch Gardens in Nebraska. Benjamin is a well recognized garden designer. His personal garden has been featured online at *Garden Design*, *Fine Gardening*, and *Apartment Therapy*. He has offered plant recommendations for many publications, including *Lawn Gone: Low Maintenance, Sustainable, Attractive Alternatives for Your Yard*. Benjamin spoke on the ethics of 21st century gardening. His presentation focused on gardening selflessly, and making your garden appealing to humans and wildlife, both above and below ground.

Another great speaker at the symposium was Cheryl Conklin, a design consultant, writer, and educator. Cheryl gave two interesting presentations. Her first talk covered what to do with those shady areas of your garden or yard. Her second talk was about getting the most out of small awkward gardening spaces.

Jodi Torpey, who is an award-winning vegetable gardener, master gardener and author of *The Colorado Gardener’s Companion* also joined us at the symposium this year. She delivered a fun and interesting talk on how to use edible plants as ornamentals in your landscape.

Another amazing presenter was Tammi Hartung, who gave us a look into the world of herbs and the many ways they can be useful in the landscape. Tammi and her husband own the USDA certified organic Desert Canyon Farm in Canon City.

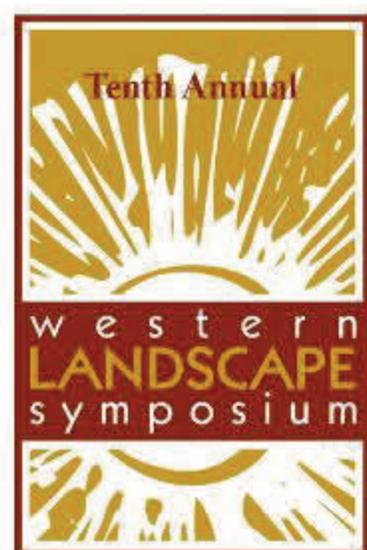
We were very excited this year to have Ebi Kondo join us. Ebi is the man behind the LePotager Gardens of the Denver Botanic Gardens since 2000. He delivered a talk on the meaning of the increasingly popular Japanese Garden.

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Last, but certainly not least, we were honored to have Jim Tolstrup, Executive Director of the High Plains Environmental Center in Loveland speak at the symposium this year. Jim talked to us about a very popular subject, native plants for native pollinators. We can help to remedy the decline of native butterflies, bees, and birds by being smart about plants we use in our landscapes, and Jim knows how!

This symposium is always a great event, and thanks to our generous sponsors, we are able to keep the cost of attending lower than for similar events. We would like to thank our corporate sponsors; The HARP Foundation, Keep Pueblo Beautiful, Pueblo Association of Realtors, Black Hills Energy, Xcel Energy, the City of Pueblo, Lower Arkansas Valley Water Conservation District, Colorado State University Extension-Pueblo County and the Southeastern Colorado Water Conservancy District for making the symposium a success. We also have many smaller sponsors whose support is greatly appreciated. 🍷



DIGGING DEEPER

## DOUBLE DIGGING

by Deric Stowell, Colorado Master Gardener, 2014

What exactly is double-digging you ask? From Wikipedia - Aeration (also called aerification) is the process by which air is circulated through, mixed with or dissolved in a liquid or substance. It is the process of loosening soil -- aerating -- to help make the ground loose enough for your plant roots to easily grow and expand. It adds air deep down into the soil and really enables the root system to grow. The fact is, beets, carrots, potatoes and other root crops need the soil they grow in to be loose so that their roots can grow deep and expand. This is also a perfect time to add peat moss or compost to make sure your plants have lots of organic material. If the soil where you want your garden is very dense or hard-packed, making the effort to do this will pay you back handsomely as your garden grows.

### How Deep Should I Dig?

Some people dig down the length of a shovel head, some people dig down twice that. In our rocky and clay soil you may only be able to go down a foot or so before you will need to break out the dynamite or a pick, if this is your first time doing a double dig. If you have done your double digging before, or if you have a well established garden space, you should not have any problems.

### When to double dig

The best time of year to do your double dig will be as soon as you can work the soil in the spring, and before you plant your crops.



Here's a simple way to do it.

- 1) Start At One End—Starting at one end of your garden, dig a 1 foot x 1 foot deep trench across the garden bed's width. Don't throw away the dirt you remove. Set it in a pile on top of a tarp or in a container for just a moment.

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If you need any special accommodation(s) to participate in any Colorado State University Extension event, please contact CSU Extension-Pueblo County at 719-583-6566. Your request must be submitted at least five (5) business days in advance of the event. Colorado State University,



- 2) Use a Garden Fork—Using a garden fork or similar tool with tines, go along the trench and loosen the dirt. Really make sure it's loose and fluffy.
- 3) Dig a Second Trench—Now, dig a second trench just like the first. However, take the soil you remove and place it into the first trench, only put the beginning of your second trench into the last part of the first trench. This is also when you can incorporate your organic material, alternating between the soil and the peat moss. Keep going until you reach the end of the garden bed.

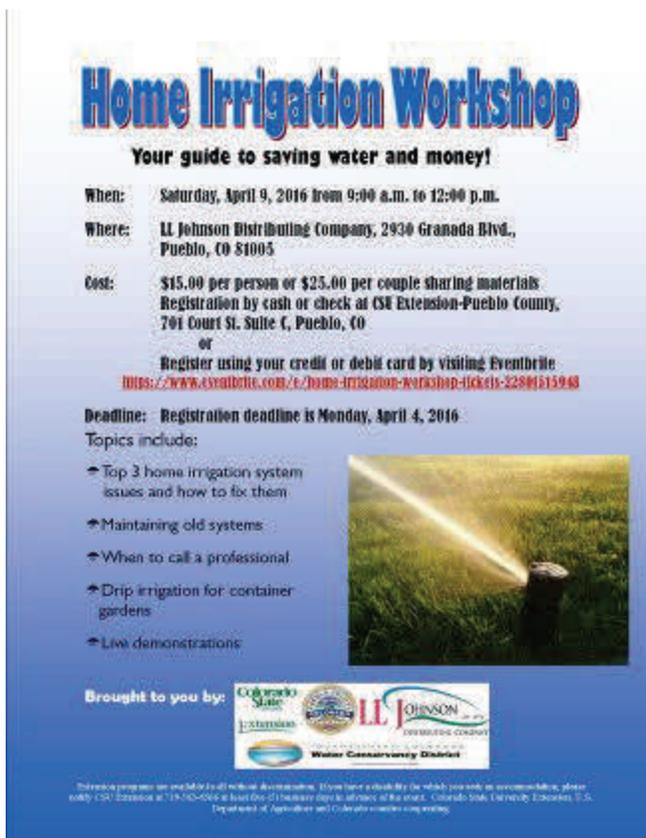
Once you've reached the end, take the soil from the first trench, that you have in a pile on top of a tarp or in a container, and use it to fill in the final trench. 📷

## Pre-emergent Control of Weeds

by Marcia Weaber, Marcia Weaber, Colorado Master Gardener, 2005, Native Plant Master, 2007

It is that time of year again to get a head start on weeds in the lawn and garden. Pre-emergent herbicides are often used to control annual lawn weeds such as crabgrass, knotweed, purslane and others. In southern and western Colorado, crabgrass seed can germinate from late March to early April; therefore, to be effective, the pre-emergent herbicide must be applied before the crabgrass seed germinates. Pre-emergent herbicides will not control existing weeds, but will, if applied before germination, control seedlings of annual or perennial weeds. After application, pre-emergent herbicides must be watered in or rained on to activate them.

Read the label to determine target weeds for particular brands. Pre-emergent herbicides will remain effective for a couple of weeks to 3 months or so, depending on the type and brand name used. Follow label directions and do not exceed label rates of application. Do not be tempted to theorize, "if a little is good, more should be better." Some pre-emergent herbicides may damage the lawn or other desirable plants, when applied in excess. For additional information on pre-emergent herbicides go to the Colorado State University Extension website and explore Plant Talk Colorado #2118 and CSU Extension Fact Sheet #3.101. 📷



**Home Irrigation Workshop**  
Your guide to saving water and money!

**When:** Saturday, April 9, 2016 from 9:00 a.m. to 12:00 p.m.  
**Where:** LL Johnson Distributing Company, 2930 Granada Blvd., Pueblo, CO 81005  
**Cost:** \$15.00 per person or \$25.00 per couple sharing materials  
Registration by cash or check at CSE Extension-Pueblo County, 701 Court St. Suite C, Pueblo, CO  
or  
Register using your credit or debit card by visiting Eventbrite  
<https://www.eventbrite.com/e/home-irrigation-workshop-tickets-22806151943>

**Deadline:** Registration deadline is Monday, April 4, 2016  
**Topics include:**

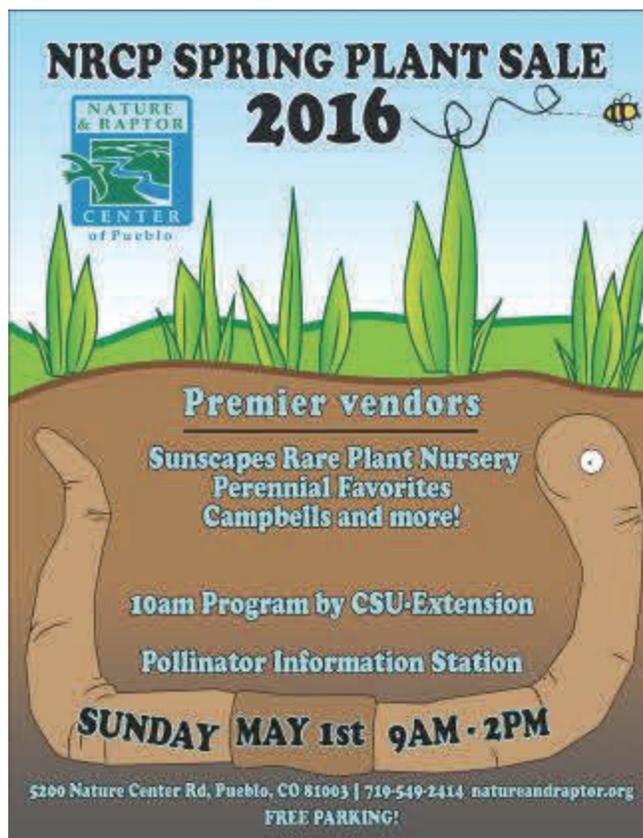
- Top 3 home irrigation system issues and how to fix them
- Maintaining old systems
- When to call a professional
- Drip irrigation for container gardens
- Live demonstrations



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This program is an Equal Opportunity/Affirmative Action program. If you have a disability for which you need an accommodation, please notify CSU Extension at 719-549-2414 at least 30 days before the date of the event. Colorado State University Extension, U.S. Department of Agriculture and Colorado Extension are working.



**NRCP SPRING PLANT SALE**  
**2016**



**Premier vendors**  
Suncscapes Rare Plant Nursery  
Perennial Favorites  
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10am Program by CSU-Extension  
Pollinator Information Station

**SUNDAY MAY 1st 9AM - 2PM**

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