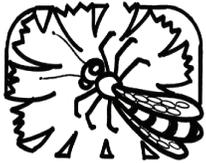


# From the Ground Up

A Gardening and Native Plants Quarterly

Colorado State University Extension-Pueblo County

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## INTERESTING INSECTS

### MANTIDS

by Orla O’Callaghan, Colorado Master Gardener, 2005, Native Plant Master, 2009

When I was assigned the Interesting Insect article, I immediately knew I would choose mantids. This summer, the outdoor classroom garden at The McClelland School that I created was the hunting grounds for more mantids than I had ever seen in my entire life. Whenever my son Dermot was in the garden he searched for his ‘praying mantis friends’ to play with. I was excited to research mantids to learn more. Here are the interesting things I discovered about mantids.

First let me clear up the confusion over the name - is it praying mantis or mantids? You should use the name mantid unless you can positively identify it as a European mantid whose scientific name is *Mantis religiosa* (or praying mantis). The best name to use is mantids.

Mantids are of the order Mantodea, family Mantidae, and in Colorado there are at least six species. Many mantids in the state are introduced non-native species, including the most commonly occurring mantid, the European mantid (also called the praying mantis). Chinese mantids (*Tenodera aridifolia sinensis*) are also relatively common in Colorado. Carolina mantids (*Stagmomantis carolina*) and California Mantids (*Stagmomantis californica*) are also found in the state. The smallest mantids in Colorado are the ground mantids (*Litaneutria minor* and *Yersiniops solitarium*). The European mantids are typically light brown, however, there are also green forms. They grow to be about three inches in length and can be identified by the distinctive bull’s eye marking on the ‘armpit’ of their forelegs.

If you purchase mantids from a garden catalog or center, you will likely receive a Chinese mantid egg case. They are the largest mantid found in the U.S., reaching lengths of four or more inches. They are generally brown in color with green or yellow striping along their wings. They are not well adapted to our climates, and rarely survive our cold winters. Other species of mantids native to the U.S., such as the Carolina and California mantids, can successfully overwinter. The closely related Carolina mantids and California mantids are green and have short wings that do not cover the whole abdomen.



Mantid photos courtesy of O. O’Callaghan



Continued on page 2

## INDEX



Interesting Insects .....	1-2	Know Your Natives.....	6
Sherie Caffey.....	3	Reading Catalogs.....	7-8
Wicked Weeds .....	3	Gamble Oak.....	8-9
Winter Composting.....	4	Fabulous Families.....	10
Garden Walks.....	5		



They are slightly smaller than European mantids. The continental divide effectively separates these two species. California mantids are predominately west of the divide while the Carolina mantids remain mostly east of the divide.

The two species of ground mantids (*Litaneutria minor* and *Yersiniops solitarium*) are gray-brown in color. They are small, growing only to about one-inch in length. All females and most male ground mantids are wingless (and thus flightless). They can be seen running or hopping on the ground in the shortgrass prairies of Eastern and Southeastern Colorado. Unlike the larger mantids in Colorado, some ground mantids can produce a second generation in a season.

Generally, mantids are big insects with long bodies and an enlarged prothorax. Except for the two species of ground mantids, most adult mantids in Colorado have wings. Immature mantids lack wings but otherwise look like the adults. Mantid's large, curved, spike lined forelegs are well designed to grab and hold onto their prey, namely other insects. Mantids have excellent vision because they have large prominent eyes set wide apart on their triangularly shaped heads. Mantids are one of the few insects that can twist their heads, giving them an almost 360° range of vision. They hunt fast moving insects by stealth. They will remain motionless until an insect nears, then they will strike with impressive speed.

There are some gender differences. Adult male mantids are smaller and thinner than females, especially after the female swells with eggs. Once the female mantid swells with eggs, she is no longer capable of flying. So, if you see a flying mantid, it is likely a male. If starving, females infrequently will decapitate the male mantids during mating and eat it. According to CSU Extension Fact sheet 5.510, Mantids of Colorado, "...the male may even continue to mate more vigorously after decapitation". Talk about an interesting insect!

Some gardeners use mantids in their gardens to control pests; however, mantids are not effective at pest control. Mantids are nonselective feeders; instead of controlling pests, mantids more often feed on beneficial flies and bees. In The McClelland School garden, the mantids would hang out in the Maximillian sunflowers and feed on bees and butterflies that ventured too close. When my son witnessed a mantid chomping a butterfly, I asked him if it made him sad. He said, "The butterfly was beautiful but the mantis needs to eat, and how cool is it to see the food chain in action!"

While mantids may not be the ideal pest controller, they are fun to watch. They also have really cool looking egg cases called oothecae (plural) or oothecal (singular). In late summer or fall, mantids can lay hundreds of eggs in mass, and then cover the eggs with foam that hardens to create a protective cover. This year was the first time I saw a mantid egg case. It was attached to the brick wall of the school near where the kids eat their lunches. Until I figured out it was a mantid egg case, I pondered what desiccated food could create this mass that resembled something between insulating Styrofoam and a foam packing peanut. I found other mantid egg cases attached to native grasses in the prairie bed of the school garden. Mantids emerge from the egg cases in late spring. The immature mantids feed on small insects like gnats. They will also cannibalize their mantid siblings emerging from the same egg case. Mantids grow quickly and go through several molts before maturing into an adult by late summer. As the mantids grow, the size of the prey they can capture and eat also increases. As adults, they can eat large insects like grasshoppers, large flies, bees or butterflies.

Mantids may be cannibalistic ferocious predators, but they are hard not to enjoy. If you don't have any mantids in your garden, come by The McClelland School Outdoor Classroom Garden next summer and check out our 'praying mantis friends' or look for male mantids flying around lights at night. You will be charmed by these incredibly interesting insects. 🦋



## Sherie Caffey, CSU Extension/Pueblo County Horticulture Coordinator

by MJ Fisher, CSU Extension/Pueblo County Director

Please join us in welcoming our latest staff member, Sherie Caffey. Sherie joined the CSU Extension-Pueblo County office in December 2015 as the new Horticulture Coordinator. Sherie graduated from Colorado State University-Pueblo in May of 2015 with a bachelor's degree in environmental biosciences, and she is currently finishing up her master's degree from CSU-Pueblo in biology. Sherie is a native of Pueblo and looks forward to working with the community in this new position. According to Sherie, she has a personal love of the outdoors and gardening, as well as an extensive background in public education, and she is excited to be involved with the horticulture program at CSU Extension-Pueblo County. In addition to all of the aspects the program has offered in the past, Sherie hopes to incorporate more community outreach and youth gardening events into the horticulture program. Providing opportunities to learn to be self-sustainable to those who do not currently have such opportunities is an important goal for the new Horticulture Coordinator. Please do not hesitate to stop in and meet Sherie at the office or by email at [caffeys@co.pueblo.co.us](mailto:caffeys@co.pueblo.co.us). 



Photo courtesy of S. Caffey



### WICKED WEEDS

#### WHEN A WEED IS NOT A WEED

by Tom Laca, Colorado State University Extension Agent, Small Acreage/Range/  
Natural Resource Management

Take a drive around Pueblo and Pueblo County and anyone will see we have had a bumper crop of “weeds.” To most these weeds are unsightly, a nuisance, and they serve no purpose. We see weeds as plants that rob us of production potential. I would suggest though that not all weeds are wicked.

There are many definitions for the word weed. They can be a plant out of place, an unwanted plant, or a plant that interferes with production. With these definitions it becomes apparent that any plant could be a weed and any weed could be a beneficial plant, it all depends on how it is managed. We tend to look at some weeds as stealing nutrients from our soil that could be used for crop production, but if that weed is returned to the soil where it grew, we just returned those nutrients to the soil which otherwise would have possibly been leached out of the root zone. While it was growing it was also protecting the soil from crusting and erosion.

By nature, weeds are opportunistic plants that move in after a disturbance. Disturbances include tillage, fire, flood, drought or any other stress. Most plants that we call weeds are pioneer plant species that have adapted to thrive in disturbed habitats. They are the first to move in and take hold following a disturbance. They replenish organic matter and restore soil life. Without weeds the topsoil lost from erosion would be far greater than it is now. They provide the soil with protection from the elements and biodiversity. Root systems aid in providing soil structure and leaves protect the soil from wind and water.

The flush of weed growth we saw this year is, in fact, a healing response after several years of drought and disturbance. This disturbance has left the soil vulnerable to erosion and degradation that, without the presence of weeds, would be further depleted. As these weeds grow on depleted soils, they are adding to it and preparing the way for other plant species with higher requirements to enter and thrive.

Before you all shoot me, let me say I'm not advocating that we leave weeds to just grow at will. I do believe though, that with proper management weeds can be of benefit in places. They play a role in the ecosystem that, whether man made or natural, needs to be filled. Our current situation has allowed for their propagation and if we continue doing what we have always done, we will continue getting the same results. Weeds are just nature's way of trying to heal and protect itself from past damages. 



## Winter Composting

by Deric Stowell, Colorado Master Gardener, 2014

Winter time is here! If you're like me, though, you long for the days of spring when you can continue growing your fresh organic produce. So, with that in mind, let's talk a little bit about the benefits of winter composting.

The soil benefits greatly from the addition of compost. Fertility, water-holding capacity, bulk density and biological properties are improved. Odors are reduced and fly eggs die due to the high temperatures occurring during microbial decomposition. However, certain weed seeds can pass through livestock and grow in manure applied on cropland. Few weed seeds remain viable in properly composted manure, which can reduce the amount of herbicide or tillage needed for weed control.

Larney and Blackshaw (2003) studied weed seed viability in composted livestock manures. After 21 days of composting, downy brome, false cleavers, foxtail barley, scentless chamomile, wild mustard and wild oat, weed seeds did not germinate. Some weed seeds were more difficult to kill. Those were green foxtail, redroot pigweed, round-leaved mallow, stinkweed and wild buckwheat. After 42 days of composting, those weeds did not germinate.

There are many resources around Pueblo for getting composted manure. Depending on the size of your vehicle, it could take you a couple of trips to gather enough for a garden. But, creativity is a good thing, right? With that and a box of trash bags I can do anything...

I also employ a tumbler composter at home. I use it for all my yard waste, and all my kitchen scraps. All I have to do to maintain it is to throw in an occasional bag of leaves, a shovel-full of dirt and some water. I also throw in a bag of coffee grounds from my favorite local coffee shop. I think it helps with the odor too, which is an added benefit.

An active compost pile through the winter is not only possible, but also quite easy to get started. In order to maintain temperatures required for decomposition one either needs to insulate a smaller compost pile, which sounded like a lot of work to me; or have a compost pile that reaches "critical mass" and insulates itself from the elements enough to sustain the temperatures required for decomposition to take place at its center.

Another method of composting yard waste is the old-fashioned "pig pen". The "pig pen" measures in at about 4' wide by about 7' long, with a 3' height. I figured that would be more than enough material to get a toasty little bed of decomposition started at its heart. With about 1-1.5 cubic yards of a roughly 80/20 mixture of browns and greens—that was naturally watered down thanks to Mother Nature and procrastination—I had my compost pile.

After a while; however, I realized that a simple way to insulate the pile and trap in the heat was to use one of those giant cardboard boxes used to ship watermelons or pumpkins. These boxes have the added benefit of being able to break down over time which becomes part of the compost.

After a few days had passed I buried my home beer brewing thermometer into the center of the pile to monitor any progress. After checking daily for the next few days, the temperature had not budged from its initial starting point of 32°F... a good 3-8°F colder than the ambient air temperature. I figured nothing would happen this year. A couple of weeks later I came home to find "the pen" cooking away at just under 140°F. I smiled, showed it off to a buddy, gave it a good stir and that's where we sit.

A couple of weeks later I came home to find "the pen" cooking away at just under 140°F. I smiled, showed it off to a buddy, and gave it a good stir. With any luck it will continue to process, even as winter (hopefully) intensifies. Yes, I love a good, cold, snowy winter. 🍷



Photos courtesy of D. Stowell



**Garden Tip:** Protect your outdoor container plants.

Now that the cold weather is here it is necessary to think about protecting outdoor plants that are in containers. To best protect outdoor container plants, gardeners should sink the plants, containers and all, into the soil. Once in the ground, the plants should be watered, mulched six to twelve inches deep, and checked periodically for dryness. For more information on this topic see *Planttalk Colorado*™ script 2028 at <http://www.ext.colostate.edu/ptlk/2028.html>.



## GARDEN WALKS

### CATTAIL CROSSING

by Janet Himelrick, Colorado Master Gardener, 2014

During the fall season at Cattail Crossing Xeriscape Demonstration Garden in Pueblo West, one feels tranquility while viewing the lovely planted beds and foliage areas. Autumn's rust colors of red, gold, orange and brown are now present as you wander down the winding garden path. This educational, low water conserver garden has vivid texture and depth. Plants of a variety of sizes, with leaves ranging from broad to slender are found in every zone of the garden, which displays plants that perform well in the hot and sunny location. This landscaped area was established as a public display to demonstrate the plants that are best suited for Pueblo West, even with all the difficult conditions and challenges of heat, wind, and poor soil.

Cattail Crossing has been recognized for its success over the years. Special honors were received from Plant Select® in 2013 with the Showcase Award. Another recent mark of distinction, in 2015 Cattail Crossing was recognized as an outstanding Public Habitat Hero Garden. The award recognized Cattail Crossing as an outstanding example of restoring habitat crucial to the survival of songbirds and pollinators. The award noted that Cattail Crossing provides shelter, laying and nesting opportunities for birds. The garden offers natural food from native and regionally adapted plants. The area provided fresh water for wildlife to drink and bathe. This xeriscape garden is recognized for being water-wise and energy efficient. Congratulations!

The Xeriscape Garden was installed in about 2002 by the Pueblo West Community Xeriscape Gardeners and is supported by several local and state affiliations. Volunteers include Colorado Master Gardeners and individuals, who enjoy sharing knowledge of how a beautiful, as well as, water-wise landscape can exist. Gardeners gather every Friday morning during the growing season, April through October, to pull weeds, prune or cut, plant new bulbs and seeds, irrigate, or just simply maintain the garden. Areas are grouped for arid, low water, and moderate irrigation. There are gardens of cacti, roses, groundcovers, perennials, spices, and annuals plants. With a drip irrigation system, volunteers can easily water the various garden areas.

The gardeners prune the plants mainly in the spring. After a glorious summer, stalks, dry foliage, seed pods, berries, rose hips, and leaves are left to protect, fertilize, and hold moisture, as well as offer the song birds and wildlife a food source. As the growing season winds down, the ornamentals grasses remain beautiful in the fall. As all gardens, Cattail Crossing is a work in progress.

Cattail Crossing offers valuable information and ideas for creating an efficient water-wise garden. The gardeners recommend amending the soil and choosing xeriscape plants with color and texture, also remember to select some ground cover plants. Vary heights and levels of plant beds to add interest. Create depth by adding rocks, wire or stone sculptures, or designed pieces. A drip system will help ease the watering. Using a layer of mulch, like the rock pebbles used at Cattail Crossing, helps retain moisture and shade plant roots.

A visit to Pueblo West or other xeriscape gardens can help create a colorful, year-round landscape with plants that adapt well to this area. Picking up a plant list may aid you in identify preferences. By utilizing these facts, you can boost the stardom of your own stunning, serene, conservative garden plot.

Good luck! 🍀



Photo courtesy of CSUE





## NATIVE GRASSES IN YOUR LANDSCAPE

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

It is never too early to plan for spring in your garden. Grasses in your landscape will add a variety of colors and textures spanning all four seasons. If you use native grasses, your gardens will be hardy and sustaining. Gardeners establishing a new landscape will find grasses are more adaptable because they grow better in poorer soils than many other garden plants. Grasses are useful in different types of landscapes and add variety to gardens including rock, wildlife, and xeriscape.

Grasses are one of the dominant plants native to the Colorado plains. Native and adapted grasses have recently become a valued addition to gardens. Few plants can match ornamental grasses for ease of cultivation, their color, texture and movement. When summer flowers are gone, the grasses continue to add texture and color even on a winter's day. Beauty and interest are highlighted in a fall or winter landscape when grasses are backlit by morning or afternoon sun.

Colorado garden centers and nurseries have increased the availability of xeriscape grasses that grow with little or no supplemental water. Among the shorter types, blue fescue is very popular for its mounds of bright green and blue grass. Native sideoats, grama, sand lovegrass, and June grass, also known as Downy Brome, are also good garden grasses.

Medium-tall prairie dropseed has a sweet smell and is gold to orange-red in the fall. Little bluestem is a good choice for mountain gardens because of its hardiness. It turns an orange to russet-red color in the fall that lasts well into winter. Other medium-height grasses include Indian rice grass and blue oat grass.

Two tall xeriscape grasses that are recommended are Big bluestem which has heads resembling birds feet in the fall, and produces a desirable orange fall color. Indian grass has delicate seed heads that are excellent for fresh or dried arrangements.

The Plant Select® program has highlighted many grasses over the years. The grasses have been bred and selected using natives and are varieties of the plants I see in our pastures. To see the plants, their growth habit and soil and water requirements go to the Plant Select sites.

WINDWALKER® big bluestem (*Andropogon gerardii*, 'PWINOIS') is selected for its powdery blue foliage that turns blue/purple in the fall with burgundy plumes high in the air. It will grow 6 feet tall.

Blonde Ambition blue grama grass (*Bouteloua gracilis* 'Blonde Ambition') is a form of the Western native with showy seed heads held high above the foliage through the winter. This blue grama grass variety will grow 30 inches tall.

UNDAUNTED® ruby muhly (*Muhlenbergia reverchonii* 'PUNDOIS') is a long-lived grass with fine-textured gray-green mounds, at 18 inches tall, sporting clouds of tiny ruby flowers in the fall. "Undaunted" retains its color through the winter adding punch to the garden.

These are a few examples of grasses that will anchor your garden all year long. This gardener hopes you will try some soon. 🍷



Drawing courtesy of:  
USDA-NRCS PLANTS  
Database / Hitchcock, A.S. (rev.  
A. Chase). 1950. *Manual of the  
Grasses of the United States*

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, U.S. Department of Agriculture and Pueblo County cooperating. Extension programs are available to all without discrimination.



## Be Aware While Reading Plant Catalogs

By: Elizabeth Catt, Southeastern Colorado Water Conservancy District

Nowadays, there are lots of places to purchase plants including online and mail order catalogs. These are fun to peruse, especially during those short, brown, dried out days and long, cold, nights of winter. Plant catalogs are the stuff garden dreams are made of. These catalogs and websites contain much information and often need to be taken with a grain of salt. Always keep in mind they are in the plant selling business, and typically trying to sell plants and seeds, to as large a market as possible, some of them globally. I view gardening websites from all over the country, bearing in mind where they originate from. The High Country catalog/website, because it is based in the southwest, tends to be full of applicable information for our region, and their plants are now grown in Colorado. Knowing where these companies are headquartered and growing their wares is one of the most important things to know. Knowing where *you* garden and what your environmental realities are is just as important.

Most catalogs will include a key to help you graphically understand their products. These often include a range of hardiness zones, watering requirements, soil types, bloom times, usefulness for pollinators, and deer or rabbit resistance, to name just a few. These keys are based generally on the local environments of the producer. What you *need* to know is what soil pH and texture you have, as well as what kind of water (pH) you have either from your water provider or other water source. In Southeast Colorado soil texture can range from heavy clay, to rocky shale or sandy soils. I mention soils first because that is the most limiting factor next to water and climate. In catalogs you will find hundreds, if not thousands of plants marked as hardy in zones 4, 5, and 6, and that covers most everywhere (including our zone 5/6) through the middle of the country! Rainfall is one of the greatest soil pH factors and makes all the difference between the low pH (acidic) soils like those of the wet Northwest (and upper Midwest) and the high pH (alkaline) soils of the arid Southwest. A catalog, that features a cold hardy rhododendron might not really begin to cover its other requirements including soil requirements. For example there are rhododendrons that will flourish in the Lake Tahoe basin (6,000' to 8,000') with its heavy snows and cold, high altitude, that would not survive our hot dry summers, cold dry winters and *alkaline soils*. Always keep in mind that lots of plants loving the cool ocean breezes *in full sun* on either coast, would not last a week here in July in full sun. Even tomatoes and peppers seem to suffer from our intense solar radiation by showing their sun scalded shoulders as they ripen. Remember, we have higher pH water, so you can try and try, to amend the soil to lower pH, but you will always be watering with our “native” alkaline water. Ever notice how happy plants are here after a rain? That’s because the water out of the sky is not alkaline! Try to use the plants that do work here and stop gardening like we live in Seattle or Chicago.

Having a true, deep respect and understanding of where you garden is the bottom line. There are a *few* plants that tolerate a wide range of soils and climate and many of these are most likely North American natives that have evolved and spread around the country as well as those imported from similar soils and climates. Study carefully all the micro conditions on your property as these should influence your selections. Do you have a sunny well-draining slope, perfect for really xeric native plants? Perhaps you have a warm southwest facing wall that can provide protection for plants from a warmer zone. A north facing, shady area, perhaps near your house, is a good spot for hardy evergreen shrubs (think boxwood) or shade tolerant perennials such as hellebores or sweet woodruff. If you have a low spot, say the bottom of a slope where water collects after a rain, that would be better suited for plants with higher water needs.

I must confess, I love looking at *any and all* gardening catalogs I can get my grubby little hands on, and Mother Nature only knows how many foolish purchases I have made. I can truly speak in a voice from the school of hard knocks based on my many garden faux pas. I am originally from



Image courtesy of: CSUE

Continued on page 8



the California coast-just imagine a place where gardeners long to grow beautiful lilacs and peonies and have to work hard at growing Gaillardia, Agastache, Lavenders and Penstemon because of the typically heavy, wet winter soils.

As much as I like daydreaming through plant catalogs, I still prefer to buy locally as much as possible. By holding a plant in my hand, touching it and seeing first hand its vigor or lack thereof affords me great pleasure and a sense of quality control not found in a website or catalog. I only purchase plants unavailable to me locally online, and encourage local nurseries to acquire them for future sale. Whether one buys from a catalog or a local nursery/garden center, basic knowledge needed for smart purchases remains the same. 📖

## The Gambel Oak, an Old Reliable Native

by Mary Ellen Donley, Colorado Master Gardener, 2006

*Quercus gambelii* is the Latin name for the Gambel oak. Other common names are scrub oak or oak brush. This native shrub or small tree is easily recognizable by its oak shaped leaves and small acorns. It thrives in the foothills and mountains of southern Colorado. They tend to disappear as you drive north of I-70 due to killing frosts and drought conditions. On average, Gambel oaks grow 10-16 feet tall and 15-20 feet wide. In ideal growing conditions, they can grow as tall as 30 feet. Our recent moisture has helped out the health and vigor of the Gambel oak in Pueblo County. Gambel oaks can tolerate drought, they are able to re-establish themselves after drought related diebacks without a lot of fuss. Scrub oaks grow best in alkaline soil and full sun, but they can also grow well in rich soil if they do not have to compete with other plants. This shrub thrives in areas with 12-24 inches of annual precipitation.

The oak's hard dense wood and irregular yet flexible branches enable the shrub to withstand heavy snows without breaking. The bark is brownish-gray and has a rough texture. The leaves on a healthy Gambel oak are shiny green on top, while the underside of the leaves are more pale and soft to the touch. They have alternate leaves with deep rounded lobes that extend almost half way to the leaf rib. The average length of the leaves is 3-5 inches and the width is about half the length. The cool fall evenings can turn the leaves to orange, yellow, or red giving mountainsides bright autumn colors. Gambel oaks grow heartily by my home near Beulah and provide beautiful fall color, especially when mixed with the yellow leaves of cottonwoods. They represent fall to me.

Gambel oak acorns are small, growing approximately three-fourths of an inch in length, and one-third of that is enclosed by a scaly cup (cap). The new growth on the acorns is green and becomes golden brown as they mature. Scrub oaks rarely reproduce from the acorns that drop, instead they usually spread from underground stems, causing the Gambel oak to grow in dense thickets. Flowers of this shrub are inconspicuous and bloom in the spring. The flowers are unisexual, that is the flowers are either male or female. A shrub can have both male and female flowers on the same plant, this is known as monoecious. Some Gambel oaks are pollinated by insects, and others are pollinated by wind, which causes cross pollination with other oaks, resulting in hybrids.

When hiking in the foothills in Pueblo County, you might take the Gambel oak for granted, due to its' abundance. Gambel oaks' dense thickets can make it difficult to hike off a trail or gather cattle in mountain areas as my husband would attest to from years of working cattle on his family's ranch in Beulah. Ranchers please be aware that in the spring, the young twigs, leaves, and acorns contain high levels of tannic acids that can poison some livestock. Although the Gambel oak has some negative attributes, we should not



Photos courtesy of  
O. O'Callaghan



take it for granted. Mule deer, wood rats, porcupines and some livestock feed on the scrub oak leaves. The acorns are eaten by scrub jays, turkeys, black bear, squirrels, chipmunks and many other small rodents. Many of these animals cache the acorns during the winter when food is scarce. The acorns were also an important source of protein for Native Americans. After leaching the acorns, they ground them into flour to make meal, cake, and bread. Native Americans also used the scrub oak for wood and sources of medicine.

Gambel Oaks also serve as the host plant for several insects, including our state butterfly, the Colorado hairstreak butterfly. These beautiful blue butterflies roost in the Gambel oak. In summer, they lay eggs on the oak twigs and eat the leaves. Other insects use the Gambel oak as a host plant. Small wasps inject growth hormone into the oak's leaves, twigs or branches and lay an egg at the site. The growth hormones cause plant tissue to grow abnormally, forming a gall around the egg. The wasp larvae develops inside the gall feeding on the plant tissue within. Once mature, the tiny wasp will eat a hole in the gall and fly away. The exit holes are visible on galls, so check for them the next time you see a scrub oak. The shape and size of the galls vary, depending on the species of wasp causing it. The galls I have seen in Pueblo tend to be one of two types: smooth galls that turn red in color, commonly known as oak apples, or a spiky yellow-orange colored gall. Most galls do little damage to the shrub, however, heavy gall presence is a sign of stress.



In 2009, I learned to truly appreciate the reliability of the Gambel oak, while on a hike with the Native Plant Society in the Mason Gulch burn area. Seven years prior, the area had been devastated by a large fire. On the hike, we saw new trees, grass and flowers growing out of the ashes. Evergreen trees were only several inches tall, while the Gambel oaks were abundant and several feet in height. Fire actually stimulates suckering of Gambel oaks. These healthy plants glistening in the sun told us all “you are not going to destroy me!”. One hundred years is a long time for a human, but for nature it is a blink of an eye. It takes a long time for trees to grow back, and in the interim the Gambel oak stabilizes the soil and is a wonderful source of food and shelter for wildlife.

I have much more appreciation for this “mighty oak” even though it may not look tall and majestic. The next time you are out hiking take a minute to appreciate the Gambel oak. It has much to offer to the natural landscapes and wildlife in our beautiful state. 🍂



JOIN US FOR THIS EDUCATIONAL FORUM

**March 19, 2016**  
9:00 a.m. - 3:30 p.m.

**Keynote Speaker: Benjamin Vogt**  
Author and Owner of Monarch Gardens, Lincoln, NE  
Presents “*The Ethics of 21st Century Gardening*”  
For full slate of speakers, visit [www.westernlandscape.org](http://www.westernlandscape.org)

Tickets on sale now at CSU Extension,  
701 Court Street, Suite C, Pueblo, CO 81003  
Advance tickets— 2 for \$30/\$18 each  
*By advance tickets only- No tickets sold at the door.*  
Event Held At PCC Fortino Ball Room

## 2016 Yard and Garden Class

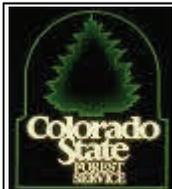
### Vegetable Crops and Soil Fertility



- Date: Monday, February 1, 2016
- Time: 5:30 -7:30 p.m.
- Where: CSU Extension/Pueblo County  
701 Court Street Suite C
- Cost: \$10 per person (cash or check)
- Instructor: Dr. Michael Bartolo,  
Arkansas Valley Research Center

*Registration deadline is January 25.*

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**Seedling Tree Program**—Our office is currently taking orders. The link to the order form is:

<http://pueblo.colostate.edu/agri/agri.shtml>. Please check the current inventory: <http://csfs.colostate.edu/seedling-tree-nursery/seedling-nursery-inventory/>

No minimum acreage required.





## IT'S FOUR O'CLOCK SOMEWHERE

by Greg Nolan, Native Plant Master, 2010

I like plants in my yard that are native to Pueblo County. With Pueblo natives I can be rather lazy and not worry much about watering. The Nyctaginaceae family offers one of my favorites, the native perennial *Mirabilis multiflora* or more commonly, the Colorado four o'clock. I like the Nyctaginaceae family because, like me, they seem to come alive at the end of the day when it cools off around four-o'clock, just in time for happy hour. This is a plant that is easy to admire and recognize. If you take an afternoon hike on the prairies through the shale flats above many of our canyons, you will see it blooming at the foot of pinons and junipers, generally on the east side of the trees. However, it is not uncommon at all to see them unprotected, growing out in the open. Colorado four o'clocks can easily be found in Pueblo, Fremont and Las Animas county. This past year, with our wetter spring, we were excited to see a much smaller version of the *Mirabilis multiflora*, the *Mirabilis rotundifolia* growing on the prairies. This was the first year I had noticed them; it is a rare sighting.



Photos courtesy of S. Caffey

The Colorado four-o'clock's have beautiful light purple pinkish (magenta) flowers opening in late afternoon until morning. They have large, thick, deep green leaves that typically look clean and polished. The leaves are heart shaped, oppositely arranged, and are generally about three-inches long and a couple inches wide but can be as big as your hand. The branches are spreading so the plant will typically be about a foot high and 18 inches or so wide forming a small mound, but can grow much larger up to 30 inches high, and will fill the base of a pinon as it sprawls out. If you see a few growing together, they can fill an area several feet wide. The funnel shaped flowers have five lobes and are a couple inches across. They are not on tall stems but rather sit atop the plant intermingling with the leaves. On the baron shale flats the plant can be striking in its beauty and brightness... magenta flowers against a deep sea of green leaves.



While looking for the Colorado four-o'clocks, keep a lookout for the *Abronia fragrans*, or sand verbena. Think snowball plant. This plant is similar to the Colorado four o'clock with large heart or spear shaped leaves and a sprawling nature, the plant is typically about 18 inches or so across but can sprawl much larger and further. The many flowers form a white snowball. The flowers are small, deep, trumpets that are typically white but can be tinged pink. They sit atop a tall, sticky, hairy stem prominently above the main plant. The snowballs can be seen at a distance and are distinctive even while in a car traveling at a good clip. As their common name suggests, they do like dry sandy soils. While you will find the Colorado four-o'clocks on or near the shale flats, you will find the sand verbena a little further above the shale flats in washes, or in the base of the canyons. When you see one, you will recognize it readily by the snowball and they are not uncommon in Pueblo.

Hiking, biking and looking for flowers and birds in the pinon junipers of Pueblo County is one of the best kept secrets in Colorado. With our long beautiful springs and falls it always does my heart good to be hiking in a protected canyon and see a flower blooming in late November or in February. The best of Pueblo is just a short hike away. Get out there and mingle with the natives. 🌿

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