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*We want to hear from you!*

*Send your submissions for the newsletter to [ymastergardener@gmail.com](mailto:ymastergardener@gmail.com) by June 1st for the next issue.*

# Yellowstone Master Gardener



## NEWSLETTER

Volume 13, Issue 2 • April/May/June 2024

## Meet Master Gardener Sheri Fredericksen

by Ann Guthals

In 2015, realizing that she would be retiring in three years, Sheri Fredericksen looked around for ways to fill her time meaningfully when the day of retirement arrived. She joined the astronomy club, took sign language classes, and then discovered the Master Gardener program! She took Level 1 in 2016, Level 2 in 2017, and Level 3 in 2018. Before taking these classes, she took a square foot gardening class at Gainan's and grew veggies in two square foot garden boxes for a couple of years.

Sheri was born in Glasgow, MT, but lived in several other states while growing up. In 1975, at the age of 17, she began her career with the federal government at Glen Canyon Dam in Page, Arizona. Not one to "settle" for just any job, she applied and was selected for various positions in Colorado, Utah and eventually Billings in 1981. Sheri has a daughter living in Billings and a son in Helena. She retired in 2018.

Because of her peripatetic life, Sheri did not have a gardening experience or mentor as a young person and took to gardening and the MG program with enthusiasm. Her house has a small yard with a lot of landscape rock so her partner, Gordon, constructed a "senior" 3'x16'x2' raised bed garden for her. He added a seat around the edge, making access to the beds easy. She grows peppers, squash, cucumbers, and some herbs.



Sheri Fredericksen

Sheri had her bedding plants replaced two seasons ago and a drip system installed. She looks forward to adding more plants to the beds in upcoming seasons. Her biggest gardening challenge is a west-facing house which gets very hot in the summer. This year she will try growing succulents in some pots. Sheri also enjoys raising houseplants.

Her favorites are African violets and her dwarf umbrella tree.

Sheri has enjoyed the camaraderie experienced through her volunteering at a number of MG programs over the last several years, including the Zoo, the Veteran's Garden, the Square Foot Garden at the Metra, the information booth at the Farmer's Market, and currently the newsletter committee. Sheri loves to do the MG interview for the newsletter, getting to know other Master Gardeners.

Sheri's advice to beginning gardeners is: "Take the classes and do your homework!" She believes beginners will learn a lot from the classes and also meet other gardeners when volunteering. Sheri has learned much from her interactions with other Master Gardeners, especially at the info booth at the Farmer's Market.

Sheri has come a long way in developing her gardening knowledge and experience and looks forward to enjoying new plants and garden experiences in the coming years!



# Celebrate The Power Of Trees: Arbor Day, April 26th

by Laura Estes

From backyards to tropical rain forests, trees are hard at work. They clean our air and water, provide habitat for wildlife, connect communities, and support health and well-being. Arbor Day is an annual recognition of this contribution, typically the last Friday in April. But communities around the world will host various celebrations in late April/early May depending on local schedules.



In Billings, the City Arbor Day event will take place on May 9th in Riverfront Park where sixteen 4th grade classes will converge to learn more about Billings' trees and their many connections in the natural world. Morning events start at 9am and include planting a special Arbor Day tree (one fitting the riparian forest of Riverfront Park) and environmental education presented by local organizations, Tree Board members and other urban forestry enthusiasts.

This year Billings is celebrating its 40th year as a Tree City USA member (Arbor Day Foundation). In addition to May 9th events, tree planting days in various local parks are being scheduled for early summer. Trees planted will add diversity to parks. Contact Steve McConnell, the City Forester, at 406.237.6227 if you would like to volunteer.

Beyond education and tree planting, Billings' Tree Inventory will be updated. An essential tool for maintaining the urban forest and quantifying the benefits it provides, the Tree Inventory currently includes trees in all city parks, Mountview Cemetery, some downtown public areas and the Par 3 Golf Course. In 2024, boulevard trees in a designated Inflation Reduction Act Urban Forestry Grant project area will be added. Eventually, a complete inventory of trees on public lands will be compiled and an urban forest geographic information system (GIS) layer will be added to the interactive, online Billings maps available to the public.

## Quick Billings Forest Facts

- Billings Forestry Division maintains 10,000 trees in parks and other public areas.
- Billings Parks has a young to medium aged urban forest with some old relic trees that will soon need to be removed.
- The trees of Billings Parks are worth almost \$34 million.
- Each citizen in Billings receives \$9.90 each year in environmental benefits from park trees.
- The average tree in Billings Parks provides \$123.73 in environmental benefits each year.



## Remembering Pam Jones-Hahn

by Sheri Kisch

Pamela (Pam) Jones-Hahn was born at St. Vincent Hospital in Billings, MT, and grew up on the family ranch, Twodot Land & Livestock Co., 10 miles south of Harlowton along with her two brothers, Bill and Bob. She married Ed Hahn in 1979 at the fifth-generation ranch.



Development firm, for the next 20 years.

Back home in Billings, Pam and Ed were very active retirees. Her dedication to walking and hiking was limitless. She power walked for at

least two hours every morning for more than 40 years.

On December 12th, 2023, Pam passed away in the hospital where she was born after a short illness. A memorial is planned at the Billings Depot on April 6th, 2024, and will be zoomed around the world for her co-workers and friends.

We, Master Gardeners, will miss this energetic and enthusiastic lady.

# Interesting Dry Beans

by Sheri Kisch

## Tepary Beans

The tepary bean (*Phaseolus acutifolius*), is a legume native to the southwest US and Mexico. It has been grown since pre-Columbian times by native people and is considered a major food source.

Tepary beans are high in protein and fiber along with copper, selenium, calcium, manganese, folate, potassium, iron and zinc. It is more drought resistant than common beans (*Phaseolus vulgaris*) and has adapted to hot and dry conditions.



Tepary beans are an annual, climber, trailing or erect plant (up to 13 feet in the wild). Fruit pods in the wild can be 1.25–3" long having 2–7 seeds. Domestic plants are bushier about 12" high and 20" wide maturing in 60–120 days. They complete their reproductive cycle rapidly to avoid eventual drought.



Colors are varied from brown, beige, black or mottled. Leaves follow the sun turning parallel to reduce heat. Plant beans 4" apart in rows 12–16" apart and 1½" deep. They require wet soil to germinate but little water after. Wait till the leaves wilt or the plant looks dry between watering. Overwatering can hinder pod production. The beans are self-pollinating and relatively disease free unless grown in very humid areas. Proteins (protease inhibitors) contained in tepary beans have been shown to inhibit the growth of some types of cancer cell (Source: Garcia-Gasca et al. 2002. Effects of Tepary bean (*Phaseolus acutifolius*) protease inhibitor and semipure lectin fractions on cancer cells. Europe PMC).

Sources:

<https://garden.org/learn/regional/view/1532/>  
[https://en.wikipedia.org/wiki/Phaseolus\\_acutifolius](https://en.wikipedia.org/wiki/Phaseolus_acutifolius)  
[https://plants.usda.gov/DocumentLibrary/plantguide/pdf/cs-pg\\_phac.pdf](https://plants.usda.gov/DocumentLibrary/plantguide/pdf/cs-pg_phac.pdf)

## Anasazi Beans

The Anasazi people were a prehistoric native American people living in the 4 Corners area of the US (Utah, Colorado, New Mexico and Arizona). Anasazi beans (*Phaseolus vulgaris*) are burgundy- and cream-colored beans prized for their sweeter flavor, versatility and firm texture which cook much faster because of their thinner skin. There is much confusion and folklore about how the Anasazi beans came to be known in present day.

Anasazi beans can be either bush (2' by 2') or trellis (vigorous growers). They require damp soil to germinate and much less water during the growing period. Prepared soil should be well drained and in a sunny spot. Use fertilizer that is low in nitrogen (5-10-10). The 5–7"



pods mature on the vines in about 120 days. Some sites say that Anasazi beans should be soaked in water for 14 to 16 hours and then cooked properly, four to six hours. Their beautiful color fades to tan when cooked.

There is no scientific data base for Anasazi beans but they are rich in soluble fiber, protein, iron, potassium, and lectin, a compound studied for its powerful anti-tumor and antifungal properties. They have low glycemic levels, help increase good bacteria in the gut, and produce less gas than their pinto bean cousins. On the gas issue, I found no definite conclusion. It can be from the body not used to digesting bean fiber, the lectin that the plants use as a defense, improper cooking method, or something called raffinose in our gut. Take your pick.

Grown in small gardening spaces will only net you enough for one meal. Acres will give you pounds of beans. I'm still going to try them.

Sources:

<https://www.indiancountryextension.org/the-anasazi-a-prehistoric-native-american-people>  
<https://homehealthup.com/anasazi-beans-nutrition-facts-health-benefits-side-effects/>

**RECIPE** submitted by Sheri Kisch

## Southern Peas

### Ingredients

12 oz. fresh or frozen peas  
1 cup cheddar cheese, cubed  
½ cup red onion, chopped  
1 cup ranch dressing  
1 package bacon, cooked, drained, cooled and chopped

### Directions

Lightly boil peas and strain. Combine all other ingredients, adding salt and pepper to taste. Pour into a large serving bowl.



# Sprouts And Microgreens – Easy Indoor Gardening

by Laura Estes and Ann Guthals

**S**prouts are now widely available in grocery stores, but they are easy and fun to grow at home. They provide concentrated nutrition not otherwise abundant in winter months and are less starchy and easier to digest than unsprouted seeds. Almost any edible seed, including grains and beans, can be sprouted. A quart canning jar and cheese cloth will do the job, but plastic lids or stainless mesh inserts are inexpensive and simple. Seed catalogs and local grocery stores sell seeds and seed mixes specifically packaged for sprouting.

## Plain old sprouts

Approximate timing, depending on the seeds, warmth and moisture.

**Day 1:** Add 2 tablespoons seeds to a quart jar. Fill halfway with filtered water. Swish around to get rid of clumps. Put in a dark place (e.g. kitchen cabinet) overnight.



**Day 2:** Drain, rinse twice with filtered water. Shake to distribute evenly over jar walls. Place upside down for drainage and put it back in the dark. Drain and rinse one more time later in the day.

**Day 3–4:** Continue draining and rinsing twice per day and returning to the dark space. A soft white fuzz is ok if odorless; it is probably root hairs. If you notice a smell, the seeds are too wet. Rinse thoroughly and drain well, distributing sprouts around the jar; don't let them clump together. Leaves will start to appear.

**Day 5:** Continue draining and rinsing twice per day, but put the jar in indirect sun so the leaves start to green.

**Day 6:** Rinse sprouts thoroughly in large bowl. (Skim off unsprouted seeds if desired.) Shake and drain well. Place on a paper towel to absorb excess moisture. Refrigerate and eat within a week.

Raw sprouts are a nice complement to soup, salads, sandwiches and hummus, or freeze and throw them in a smoothie. Many dogs like them, too. Heartier sprouts from beans can be used in cooking, and sprouted grains can be used in baking. Rinse water is great for house plants or outdoor gardens.

## Sprouted Flour

Sprouting grains reduces gluten content so expectations

or recipes may need adjustment. Sprout larger quantities using the same process. For instance, if you want 6 cups of wheat flour, use 4 cups of hard red wheat berries in a half gallon jar. Soak overnight, then sprout (rinsing 2x per day as above) for about 4 days. To make flour, dehydrate them with low heat (<125°F). Grind when thoroughly dry (6–8 hours). Consider using a variety of seeds (e.g. spelt, beans, millet, wheat, barley) for “Ezekiel” type bread. Flour is best used immediately after grinding but may be kept refrigerated or frozen for a bit longer. Bread with sprouted grain flour is also best kept frozen or refrigerated.



## Growing Microgreens Hydroponically

One way to enjoy the tangy taste and healthy nutrition of sprouts is to grow microgreens. These are sprouts which are harvested by cutting above the root. They are often grown in trays or in small plastic tubs. They can also be grown hydroponically in indoor hydroponic gardens such as Aerogardens. (The author uses Aerogardens, so will describe the process with this brand. Other brands are available.)



Both the Harvest and Bounty models of Aerogardens have microgreens decks available for purchase. These flat trays replace the regular decks. The bottom of the trays are grids over which one places a felt-like growing medium that comes with the microgreens kit. (Sheets of this felt-like material may be purchased from Amazon to make your own replacement growing sheets. On YouTube you can see other types of growing mediums that people have tried for growing microgreens in Aerogardens.)

A wide variety of sprouting seeds may be used, such as broccoli, radish, clover, sunflowers, alfalfa, kale, cabbage, etcetera. My current favorites are broccoli and clover seeds.

The growing medium is dampened and seeds are sprinkled on it. No fertilizer is added to the water for this process. There is a clear plastic dome for each of the two sides of the microgreens deck that is placed over the seeds until they are well-germinated.

*continued on page 5*

# Billings Community Seed Library 2024 Events

by Elizabeth Waddington, Kristi Picchioni, Patti Doble & Anthony Sammartano



For updates and additional information, please visit our Facebook page <https://www.facebook.com/BillingsCommunitySeedLibrary>

Vegetable and flower seeds are available year around in the cabinet on the second floor of the Billings Public Library.

## MARCH

**BCSL Seed Swap** • March 23rd • 9am–noon • Billings Public Library  
*Join us for the 2nd annual BCSL seed swap! We'll provide the table, and you bring the seeds and supplies for creating seed packs to swap. Don't have any seeds to share this year? No worries. Come browse our collection to get growing this season and check out our hands-on activities for gardeners of all ages.*

## APRIL

**Reading A Seed Packet For Seed Planting Success**  
April 12th • noon–2pm • Billings Public Library • MSU Extension's Sarah Eilers will help you make sense of the information on a seed packet and share seed starting secrets for planting success.



**Magic City Community Garden Information Event** • April 13th • Billings Public Library • *Are you interested in growing your own fresh, healthy, and affordable food but are short on space? Would you like to make new friends and get gardening tips from seasoned growers? Consider joining a community garden. Come learn about the many opportunities in our community!*



## MAY

**Jack And The Bean Stalk Story And Activity For Kids** • May 14th • 4–5pm • Billings Public Library • *Calling all junior green thumbs! You*

*are invited to join us for a story about a fabled gardener named Jack and then plant seeds to grow your own magic beanstalk. Reserve a spot for you child with the BPL Children's Librarian.*

## JUNE

**Springfest** • June 1st • Moss Mansion • *SpringFest at the Moss Mansion delivers a day of shopping, live music, delicious food and fun activities for kids of all ages. Come visit the BCSL tent to talk gardening and browse our collection of seeds.*

**Pollinator Festival** • June 22nd • 10am–2pm • St. Andrew's Community Garden • *Let's celebrate our local pollinators and the gifts they give us! Seeds, sprouts, and starts will be available to all who come and visit our booth.*

## JULY

**Strawberry Festival** • July 8th • Downtown Billings • *We'll be at the 35th annual*



*Strawberry Festival. Stop by, say "hi," and let's talk seeds and strawberries!*

## AUGUST

**Montana Fair** • August 9th–17th • Metra Park • *Meet us at the Fair! Stop by the Yellowstone County Master Gardener's booth to share this season's successes and troubleshoot growing fails. We'll also have seeds to share for fall planting.*

## SEPTEMBER

**Garden Scavenger Hunt** • September 14th • 2pm • Songbird Community Garden (1559 Songbird Drive) • *For kids ages 5–12. A snack will be provided, but participants should wear appropriate gear for playing outside and bring a water bottle. Children must be accompanied by a parent or guardian at all times. Contact Cynthia at [songbirdgarden59101@gmail.com](mailto:songbirdgarden59101@gmail.com) with questions.*

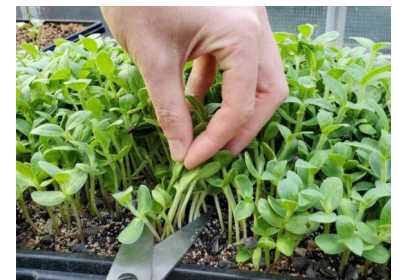
## EASY INDOOR GARDENING *continued from page 4*

For taller more easily-harvested greens, the light deck is raised higher than when growing lettuces or other such plants. The seeds sprout quickly and the greens are ready to harvest in about a week.

There are many informative YouTube videos on how to grow microgreens in Aerogardens if you have questions or need help.

### Growing Microgreens in Trays

Make sure what you use for a growing tray has drain holes. Dampen potting soil and spread about an inch thick into the tray bottom. Spread seed evenly but densely on top and cover with another light soil layer. Put the tray in a sunny location, misting 2–3 times per day to keep moist. A lid helps. When plants are bigger, gently move to the side when watering. Keep the soil moist, the leaves dry. If plants are lying down, overwatering or underwatering may be the cause. They are ready to harvest when 2–4" tall. Using scissors, snip into a bowl. Store in the fridge. The tray may produce a second cutting.



# Malus: A Brief History

by Ann McKean

**M**alus, which in Latin means both apple tree and evil, is a genus in the family *Rosaceae* and encompasses wild and domesticated apples and their kin. Growing around the planet in temperate zones, the genus is native to the global northern hemisphere. While the earliest fossil evidence for the genus is close to 50 million years old, apples were probably domesticated somewhere between 4,000 and 10,000 years ago.

Over 150 years ago, early settlers in the Bitterroot Valley and later in many areas of Montana, including the Yellowstone Valley and Billings itself, recognized that apples and crabapples could be great trees for Montana yards and orchards, bringing apple trees from the east coast and in some cases, even from Europe. The first commercial orchard in our state dates to 1870, but even before that, growers would board passing trains and sell their excess apples to passengers. The first homesteaders had to be completely self-reliant, and apples provided (and still offer) a valuable food source.

Some of the tough survivors from those early orchards are now being preserved by the Western Ag Center through the Montana Heritage



*Apple pickers in a Bitterroot Valley orchard in 1880s. McIntosh apples, dubbed 'Montana Macs' were marketed and shipped throughout the country.*

Photo courtesy of Ravalli County Museum Photo Archive



Orchard program. The horticulturists there collect and graft cuttings from trees 75 or more years old, often performing DNA testing on them to identify and even discover lost varieties,

propagating them, and making the young trees available for sale to the public. Among the trees they propagated last season was an unidentified apple tree from the old homestead at Amend Park. If you know of an old orchard or tree that has delicious apples, contact the Western Ag Center. Time may be running out and these trees can provide valuable insight and genetic material to help cope with our changing climate.

There are fewer commercial orchards

in Montana than at their early peak, but they still survive in the Bitterroot, Kalispell and Clark Fork valleys, among others, and we have many small thriving home orchards around the state. Join them and plant an apple tree this spring!



This is the first in a series of articles about what a great genus *Malus* is for growing in Montana and how you can grow and care for apples too; watch for more in upcoming newsletters!

Sources:

<https://agresearch.montana.edu/warc/mtorchards.org/index.html>  
[https://agresearch.montana.edu/warc/guides/apples/heritage\\_orchard\\_management\\_guide/montana-fruit-production-history.html](https://agresearch.montana.edu/warc/guides/apples/heritage_orchard_management_guide/montana-fruit-production-history.html)



# Montana Moth Project

by Ann Guthals

When the Executive Director of Northern Rockies Research and Educational Services (NRRES) realized in 2015 that there was no comprehensive inventory of moth species in Montana, the seed of an idea for the Montana Moth Project was sown. In 2017, the project became a reality and Director and biologist Mat Seidensticker was joined by Carrie Voss, field biologist; Marian Lyman Kirst, entomologist; and citizen scientist volunteers.



Above, from left:  
Wavy Lined Emerald Moth (*Synchlora aerata*),  
White Lined Sphinx Moth (*Hyles lineata*),  
Western Tent Caterpillar Moth (*Malacosoma californica*)

Left: Nevada Tiger Moth (*Apantesis nevadensis*)

Photos courtesy of [montanamothonproject.org](http://montanamothonproject.org)

The team began surveying Montana moth species with the goal of eventually surveying the entire state.

From the website, the project's goal is "to document the diversity, distribution, abundance, and ecology of moths in Montana through scientific research, education and citizen science." Along the way a museum at Colorado State University (CSU) became involved. CSU students, staff and volunteers help process and house the project's specimens.

So far 3,000 species have been documented in 52 of 56 counties. The team estimates that there will be 4,000 to 5,000 species found when the project is completed (compared to about 400 known species of butterflies).

Moths are often colored in a way that blends into the background so we are not as aware of them as we are of



butterflies. But moths are important as pollinators, herbivores, and prey for birds, bats, lizards, small rodents, skunks, and even bears

(from [nwf.org](http://nwf.org)). Bears eat moths to fatten up for winter and can eat up to 40,000 moths a day (from [yellowstonepark.com](http://yellowstonepark.com)).

On the project's website at [montanamothonproject.org](http://montanamothonproject.org), you can volunteer, see pictures and information on moth species, buy swag to support the work, join email or Facebook to get news, and donate to NRRES. You can contact the project at [info@nrres.org](mailto:info@nrres.org) or P.O. Box 1242, Lolo, MT 59847.

Sources:  
Billings Gazette article 9/18/23  
Montana Moth Project website  
[Nwf.org](http://Nwf.org)  
[Yellowstonepark.com](http://Yellowstonepark.com)



## EXTENSION

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# 2024 Northwest Flower And Garden Show, Seattle, WA

by Sheri Kisch, photos by Sheri Kisch and Joann Glasser

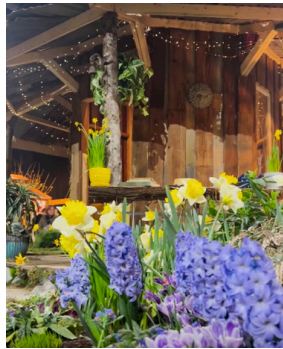
The “I Love Spring” show did not disappoint the thousands of people gathered to see beautifully decorated gardens, browse over 70 vendors, or take in seminars conducted by 92 speakers over a total of five days. Whew! Wonderful exercise and mind expanding also.

Many of the speakers had book signings and left pro tips online afterwards. Washington University provided a library area adjoining the seminar space that included more gardening books.

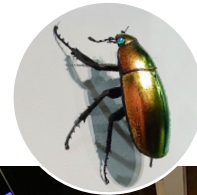
It is still hard to believe that exhibitors set up only 72 hours before the doors open. They hauled in full-sized trees, flowering shrubs, rocks, huge boulders, growing grass, tons of soil, set up wood and rock patios, and to top it all off, there are thousands of flowering or soon-to-be blooming bulbs and plants that had to last five days. They have everything down to a precise science.

One useful hint from the seminars to help with heat and drought is to keep some kind of ground covers on and around your vegetables and shrubs. This can be newspaper topped with mulch, compost/mulch, growing ground covers, companion plants, straw, or green manure plants. Always keep our soil covered.

Put a reminder on your calendar for this fall to start looking at good airfares and get those show tickets in 2025! You will enjoy it all.



Glass garden ornament



Metal bug garden ornament



A side trip to Chihuly Garden and Glass

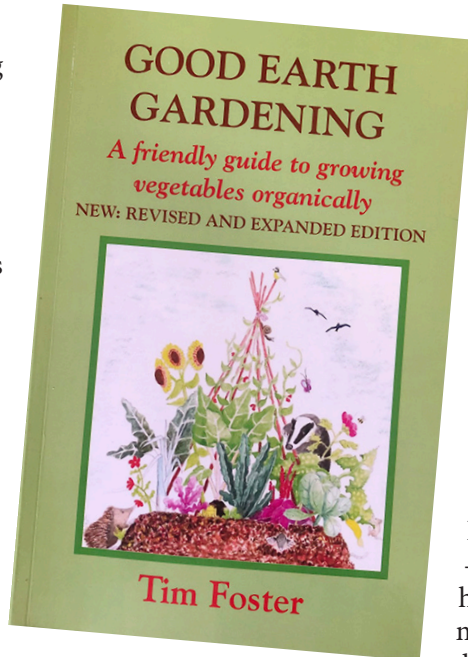


# Good Earth Gardening

## A Friendly Guide To Growing Vegetables Organically

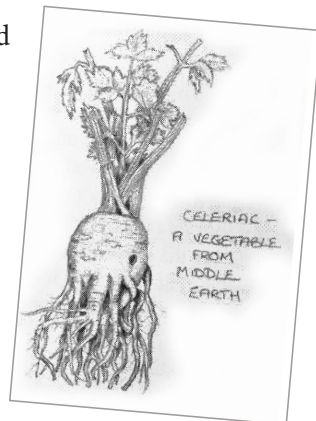
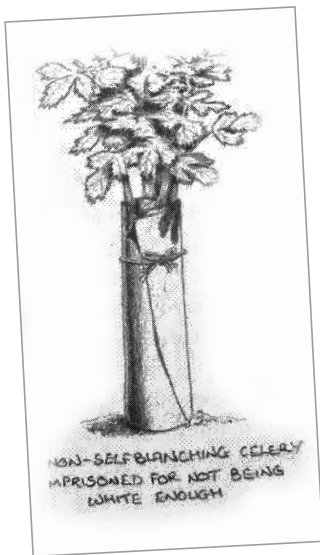
by Tim Foster

Here is a gardening book filled with wit and wisdom in equal measure for a truly delightful read. Beginners and experienced gardeners alike will enjoy and benefit from the information offered here. Like a good novel, I was sorry to see the book come to an end. There was good information right up to the last page and I enjoyed many a good laugh from his sense of humor.



Both the prose and the author's illustrations are informative and humorous. Here is a sample of the engaging text: "Your onions need moderate watering and nutrients and lots of sunshine, so choose an appropriate site – somewhere near the Mediterranean would be nice – Nice, perhaps... When planting onion sets (use a trowel, don't push them in, especially on heavy soils), you are supposed to leave the gnome's hat tip sticking out. This is so that the birds can get a good grip on them when pulling them out and throwing them away, two plots down the line." (p. 58–59)

All the advice was informative and useful with a few exceptions: the

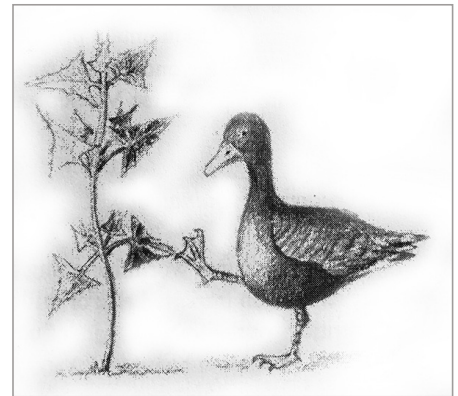


author is writing about gardening in England and thus the planting calendar is not appropriate for our shorter season. Also there seems to be a plethora of pigeons and slugs where Mr. Foster gardens – we do not have the same magnitude of these pests here

in Montana. But the rest of his advice translates well to our growing conditions. Surprisingly, one of my favorite parts was his explanation of the origin of the plants' scientific names.

*Good Earth Gardening* is organized in two sections. The first half of the book is useful information first about common garden plants, then a section on less common ones

that we might want to experiment with growing. For each plant, Mr. Foster describes planting seeds or transplanting starts, the plant's historical origins, pests and diseases, and illustrative "comments,"



*Goosefoots are named because the leaves resemble the feet of geese.*

which are the most fun part of each description. The second half of the book is devoted to organic gardening techniques. Topics covered here include soil and soil fertility, rotations, tools, composting, no-till gardening, season extension, and pests and diseases.

When I finally sat down to read this little book, I expected a fairly short and simple beginner's guide. But I was pleased to discover that Mr. Foster covers pretty much all the topics needed to grow a garden organically– he at least plants the "seed" of an idea if he does not treat the topic in depth (pun intended – as befits this author's humor!). Mr. Foster teaches at the University of Bristol in England – I wish I could take a class! Perhaps I will find one online sometime. Meanwhile we are gifted with his writings and drawings – happy reading!

### Yellowstone County Master Gardener Newsletter MISSION STATEMENT

The mission of the Yellowstone County Master Gardener newsletter is to "educate and inform," not to advocate or persuade. The Newsletter Editorial Board takes no position endorsing or opposing, approving or disapproving, any of the assertions or arguments in the contributed information. Information submitted to the newsletter is for your interest only.

# Using Seed Balls To Create Habitat For Pollinators

by Elaine Allard

**B**ees, bats, certain other insects and birds play a critical role in our food supply by pollinating many of our crops. However, in recent years, pollinators have come under threat due to loss of habitat. We can help attract more pollinators to our gardens by growing plants of different sizes, colors and textures, and growing plants with different shaped flowers. We can also encourage pollinators to stay and make themselves at home by providing a constant food source of nectar from early spring until late fall; this can be done by having a variety of flowering plants with different bloom times.



eaten by animals before the seed has a chance to germinate. Also, the soil helps retain water that is needed for the seed to germinate and provides nutrients, and a place for the roots of the new plant to take hold.

**Clay:** Clay acts like glue to hold the balls together. Some seed ball recipes call for red potter's clay or kitty litter, but I find that natural unfertile clay subsoil that is found abundantly in our area works best and it is free! It just needs to be dried and pulverized into a floury powder.

**Water:** Water is needed to combine the seeds, soil and clay into a doughy mixture that can be formed into balls.

## RECIPE FOR MAKING SEED BALLS

### Ingredients:

- 1 cup potting soil
- 1 cup clay subsoil (dried & pulverized)
- 1 teaspoon assorted pollinator friendly seeds
- 1 cup water

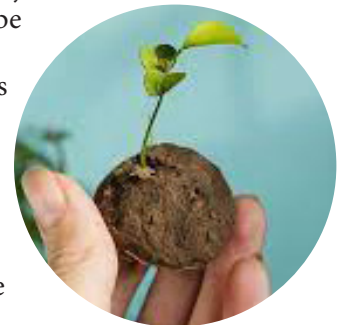
### Directions:

Combine soil, clay and seeds. Add

water and mix thoroughly until it is the consistency of thick cookie dough. If it is too dry, add more water. If it is not thick enough, add more potting soil. If it is not sticking enough, add more clay.

Roll the dough into balls that are from the size of marbles (for smaller seeds) to the size of golf balls (for larger seeds). Let the balls air dry for a couple of days. Then place or toss the seed balls in a bare or neglected spot in your yard. Do not bury the balls. The seed ball will gradually break down from the rain and other elements of nature. You may find the seed balls sprouting after we have had some nice spring rains. Sometimes, it may take a lot longer. The success of this project takes time, so be patient.

The seeds inside the seed ball can stay dormant yet viable for years.



One way to try to create habitat for pollinators is by using seed balls to help introduce more pollinator-friendly plants into our landscape. Seed balls are easy to make. Dozens of recipe variations can be found on the internet, but basically, all that is needed to make seed balls are seeds, soil, clay, and water.

**Seeds:** Pick seeds of pollinator friendly plants that are drought tolerant and grow easily in our area. Choosing seeds that are native to our region will provide better habitat. You can find lists of suggested seeds online. Seeds that I have had success with include cleome, salvia, yarrow, penstemon, lupine, borage, oregano, and prairie coneflower. Check to see if the seed you are using needs to go through a period of cold stratification.

**Soil:** Potting soil provides a safe haven for the seed so that it will not be baked by the sun, blown away by the wind, washed away by the rain, or



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# Borers And Bark Beetles

by Ann McKean, photos courtesy of forestryimages.org

**B**orers are wood feeding insects which can cause varying levels of damage (including death) to many trees and shrubs. These insects lay their eggs in crevices or holes of living or dead woody plants and include varieties of beetles, moths and wasps which undergo complete metamorphosis, producing a larval stage that tunnels beneath the bark and feeds in the phloem, cambium, sapwood, or heartwood, depending on the species of insect.

Metallic or flatheaded borers (*Buprestidae*) and longhorn or roundheaded borers (*Cerambycidae*) are both beetles. Look at the shape of the exit holes (which can be tiny) to determine which they are. Flatheaded borers attack the outer sapwood, vascular cambium and the phloem and make a D shaped exit hole in the bark. They are usually very small. Examples of these include flatheaded appletree borer, honeylocust borer, bronze birch borer, and the emerald ash borer. Flatheaded borer management includes wrapping the trunk in fall and trunk spray with contact insecticides such as permethrin in spring to target eggs and adults. \*Imidacloprid or dinotefuran, which are toxic to pollinators if they visit the flowers, can be administered systemically but should only be used as a last resort. Arborists can inject the tree, which keeps the chemicals out of the soil.



*Metallic or flatheaded borer*

Roundheaded borers produce a circular exit hole and attack the sapwood and heartwood. Roundheaded borers include the longhorn beetles (*Cerambycidae*), which are larger than flatheaded beetles and can have antennae almost twice the length of their body. Their attack can begin near the surface, but they typically burrow much deeper into the sapwood and heartwood of the tree. Some native varieties only target dead trees and are excellent decomposers. Management includes maintaining tree vigor. Insect-attacking nematodes can be a biological control option for some roundheaded borers, and if needed trunk spray in affected sections with contact insecticides such as permethrin or carbaryl to target eggs and adults and must be timed to coincide with peak flight periods.



*Longhorn beetle*

Common in our area, the pine shoot or white pine weevil lays its eggs in stems instead of bark and attacks the terminal branches of pines and spruce. While this kills the branch, it does not kill the tree. Management includes

clipping the infested central leader when the larvae are still inside the branch (before the end of July) and raking up and removing needles and debris under the tree in the fall to reduce overwintering sites. Chemical controls are only recommended if necessary\* and can consist of contact insecticides targeting the central leader when the adults are climbing up to lay eggs in the central leader. Systemic insecticides such as imidacloprid can be applied as a soil drench or injection in early spring, but are not imperative.



*Pine shoot or white pine weevil*

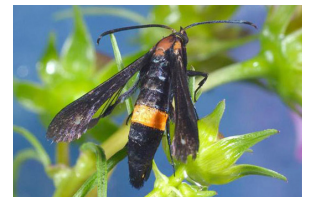
Bark beetles are tiny destructive beetles in the weevil family, which attack the living phloem of the tree just below the bark and include the pine bark beetle and the elm bark beetle.



*Bark beetle*

Woodpecker foraging can often signal bark beetle or other pest activity. These beetles not only destroy wood fibers, but they can transmit deadly diseases, including Dutch elm disease. Some bark beetles, called ambrosia beetles, farm funguses in their galleries. Management includes preventing stress and keeping your trees healthy, since stressed trees are more susceptible to bark beetle infestation. Treatment is complex and should be performed by a professional such as a certified arborist.

Found near the bottom of the trunk or even in the upper roots, the clearwing borer is a moth (*Lepidoptera*) and leaves a round exit hole, which is often obscured by a telltale glob of pitch. The peachtree borer is common in our area and attacks most trees in the *Prunus* genus. We also see the lilac-ash borer, the raspberry crown borer and the sequoia pitch moth. They can kill young trees or shrubs and leave older trees susceptible to further injury by weakening branch junctions. Management for the peachtree borer includes monitoring and spraying the vulnerable area of the tree with permethrin monthly in the growing season. Management for the sequoia pitch moth includes refraining from pruning between February and September (wounds attract females), removing the pitch masses (and the larvae buried in the pitch, which is gross but satisfying) and trunk sprays of permethrin or carbaryl in April and June.



*Peachtree borer*

Horntail wasps are non-stinging wasps *continued on page 12*

## BORERS AND BARK BEETLES

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which usually target dead or dying trees. They rarely attack healthy trees.

Importantly, while a few pests attack healthy trees, most borers target stressed plants, as they are less able to fend off attacks. Healthy hydrated trees can often repel a pest by producing sap to poison and push the insect out. Your best bet is keeping an area under your trees grass free and covered with mulch. Consistently offer adequate and timely water. Drought stress has become our biggest worry, and management requires observing the weather, the soil and your plants and then responding promptly and sufficiently. Always plant pest and drought resistant varieties, and don't move firewood (which can introduce pests to new areas).

\* Pesticides can have unintended consequences on beneficial organisms such as pollinators and parasitoids (which can help maintain pest populations at manageable levels in our landscapes). Therefore, prioritize Integrated Pest Management (IPM) practices such as prevention (planting resistant varieties), cultural controls (managing tree health and vigor), mechanical/physical controls (pruning, barriers), and biological controls (by following sustainable practices to protect beneficials in our landscapes) whenever possible. When using any pesticide product in your landscape, it is crucial to always read and follow label directions.

*Note: This article is a basic overview with general guidelines and is not intended as management recommendations. For more information, consult your local Extension Office for confirmation of insect infestation and best management recommendations.*

# Summaries Of Yellowstone County Master Gardener Association Quarterly Meetings

*by Joyce Hendricks, Secretary*

**17TH JANUARY, 2024**

## New Business

### By-law Committee

**Report:** Joyce reported that the committee consisting of Merita Murdock, Lori Buxbaum, Rayanne Schuler, with President Paul Scarpari attending the first, and Vice-President Mike Walz attending the second, have met twice and reviewed the document. Suggestions have been made and a draft is ready to be sent out for a final review. It was discussed how to send this out and was agreed that it should go out to the membership for a review for typos and grammatical errors. A final vote is planned for March 20th. The deadline to get corrections to Joyce will be March 1st.

**Financial Review:** Mike and Paul will carry out this review.

**Plant Sale (Greenhouse at the Metra):** This is planned for the spring in conjunction with the members of the Seed Library committee. It will include education for those who attend the sale, especially how to start plants. Joann Glaser has been looking into buying heaters and hot mats for the greenhouse so that plants can be started in March.

**Vice President:** Mike reported that he had received an email with some questions concerning the Association. This was reviewed.

**Recording Secretary:** Sherry Doty has resigned as the recording secretary as of December 2023. Joyce Hendricks has volunteered to serve in this position. Steve Restad moved



that Joyce be elected to serve. The motion was seconded by Mike. Motion passed.

### New Board Member:

Mike moved that Ron Hendricks be elected as a new Board Member.

Motion was seconded by Roberta Fuller. Motion passed.

**Spring Picnic:** The spring picnic will be held on May 8th from 4-7pm at ZooMontana. Prior to the picnic members will be asked to participate in a volunteer opportunity at the zoo from 2-4pm. Paul has the BBQ grill, Mike has agreed to cook and Merita Murdock will be asked to organize the food. Mike has suggested that we have a Plant Palooza at the picnic. Members will be asked to bring their extra specialty plants and Mike will organize the Palooza.

**Symposium in Helena:** Gold Country Master Gardener Association is presenting a symposium on March 30th in Helena. Joyce moved and Steve seconded a motion that our association send Mike to this meeting and provide up to \$500 for his expenses. Motion passed. The symposium is open to all members who wish to attend.

### Online/Social Media

**Communications:** Paul shared that his goal is to have all events put on the website and on Facebook to increase communication with the members. He will ask Corey Glasser, our webmaster to put the Helena symposium on these two forms of communication. Amanda Ullman moved and Roberta seconded.

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**20TH MARCH, 2024**

**Treasurers Report:** Steve Restad had sent out via e mail the Profit & Loss Statement for January–February, the Balance Sheet, and the Finance Sheet. There are currently 32 paid-up members. Paul Scarpari, Mike Walsh and Cindy Roesler did a financial review and found the books to be in order. Roberta Fuller moved and Tom Kress seconded a motion to accept the reports as circulated. Steve reported that the form for our 501c3 status and the 990 tax form have been submitted for 2023.

**Old Business**

**Spring Event:** We will host a “Gardeners on the Town” on April 10th from 5:30–7pm. This will be an ice cream social at Michoacan A Pedir De Boca, 900 South 24th Street West, Suite 6A. The purpose is to have time with the members to become better acquainted. Tom moved that the Board of Directors pay for the event. Amanda Ullman seconded the motion. Motion passed.



**Day at the Zoo:** On May 8th from 2–4pm members will work on a garden project for the Zoo. Following the work, we will have a build-your-own taco supper under the Shelter. Cindy moved that we fund this event. Roberta seconded the motion. Motion passed.

**Plant Sale:** One thousand and twenty-six 3½" pots were planted with tomatoes, peppers, herbs for the plant sale. Thirteen members turned out to do the planting and labeling. The heaters Joann Glasser ordered do not work so she has sent one back and is working with the company that manufactures them to get replacements. There are heaters running and large containers of water were placed under the tables to provide heat. Paul and Mike have been checking on them and watering. Paul will put out a schedule for members to sign up to do the watering. The pots and labels cost \$96.48. Steve moved and Cindy seconded a motion to reimburse Paul for these costs. Motion passed.

**Billings Community Foundation:** Participation in the Yellowstone Valley Givers Day was discussed. No action was taken.

**Bylaws:** The update of the YCMGA Bylaws was presented by Joyce Hendricks. A copy of this document was sent out in January for review by the members. Member Ann Guthals helped format the document. Members of the review committee were Merita Murdock, Lori Buxbaum,

and Rayanne Schuler. Paul attended one meeting and Mike attended one meeting. Rayanne read the major changes. The committee moved that the submitted document be approved. The motion passed by the majority present. There were no dissenters. The final document will be sent out to the members via email.

**New Business**

**Announcements:**

Saturday, March 23rd there is a seed exchange at the Library from 10am–12 noon organized by the members of the Seed Library. Helpers are welcome.

An information event on the Emerald Ash Borer is being held on April 2nd from 6:30–7:30pm at the Northern Hotel and Convention Center, sponsored by the Billings Parks and Recreation and GM Tree Service. Members are invited to attend.

Refreshments for the meeting tonight were provided by Suri Lunde and Rayanne Schuler. Joyce moved and Cindy seconded a motion to approve the reimbursement of \$23.44 to Suri and \$11.97 to Rayanne. Motion passed.

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## **YCMGA New Bylaws**

*by Joyce Hendricks*

**T**he Board of Directors appointed a committee in January 2024 to review the bylaws of the association and make recommendations for any changes that were needed to bring them up to date.

Joyce Hendricks agreed to chair the committee with Lori Buxbaum, Merita Murdock and Rayanne Schuler serving as members. The Bylaws were reviewed and recommendations were made for changes. Paul Scarpari, President, and Mike Walz, Vice President, sat in on the meetings and made suggestions as well. The changes were sent out to the members in February, suggestions were accepted and the final draft was voted on at the March 20th 2024 meeting of the Board of Directors. A quorum was present at the meeting and the Bylaws were accepted.

A copy of the Bylaws is on file with the secretary, Joyce Hendricks, and will be posted on the website (<http://www.ycmgamt.com/Documents.html>) for those who are interested in viewing them. If you would like a copy, send your request to [rnjhend@charter.net](mailto:rnjhend@charter.net) and a copy will be sent via e-mail.

A huge “thank you” to the committee and officers for their help in completing this important task.