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# Yellowstone Master Gardener



## NEWSLETTER

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### Meet Master Gardener Ann McKean

by Sheri Fredericksen

Ann McKean grew up north of Baltimore, Maryland, an only child to classically trained musician parents. She spent her formative years, as she put it, “under a bush” and believes that plants can be vessels for memories. Ann’s father was her beloved childhood gardening mentor and is probably from whom she inherited her casual gardening habits. Her paternal grandfather’s beautiful roses were also an early influence.



Ann McKean

Ann created her first “garden” when she was four years old. She gathered different mosses to create texture, then added plants like rhododendron, wild violets and anything else she could find that would survive the shade of a huge Norway maple. Jean Worthley, Ann’s nursery/kindergarten teacher, was a naturalist and horticulturist and taught Ann the joy of being immersed in nature and its importance.

In 1982, Ann followed her soon-to-be husband, Paul McKean, to college at Arizona State University in Tempe, AZ, and graduated with high honors in 1986 with a Bachelor of Fine Art in Sculpture. After school, Ann and Paul returned to Maryland. She found she did not enjoy the art world as much as she enjoyed art, but being a creative spirit, Ann combined her two loves of nature and art and found her

joy through flowers. At 23 years of age, she joined a garden club where she met Clare Stewart, a kind and incredibly talented floral designer and Master Gardener. This meeting proved to be a pivotal turning point in Ann’s life. She worked with Clare for eight years where she literally “blossomed”, learning everything she could about flowers and creating floral arrangements.

Ann’s husband received a job offer in Naples, FL, and in 1994 the family relocated there. Ann’s mentor Clare encouraged her to start her own floral design business in Naples. She continued to grow her business until she was severely injured in a car accident in 2003, and eventually had to completely focus on her recovery. Ann and her family moved from Florida to Billings in 2007 where she was thrilled to have all four seasons again. She started working at Canyon Creek Nursery in 2016, and managed the nursery until she left at the end of the 2023 season.



Ann conducting a flower arrangement class in 2022

Ann joined the Yellowstone County Master Gardener (MG) program in 2017. She tries to let nature be her guide but admits that her biggest gardening challenge is that she probably plants too many things because she wants to try everything! She believes that gardens are

*continued on page 3*

# Attracting Beneficial Bugs To Your Garden

*A Natural Approach To Pest Control*

by Jessica Walliser

First let's clear up use of the term "bug" in this book. There are true bugs (order Hemiptera) and there are other insects, but many people refer to almost all insects as "bugs." The author takes the simpler path and uses "bugs" to refer to insects.

This fascinating book is about how to develop an insect-friendly garden environment and has changed my thinking about the way I garden. My approach has been to promote diversity in the garden – planting flowers and herbs in addition to vegetables – to attract beneficial insects like pollinators, to add beauty, and to improve the soil environment. This book has opened my eyes to seeing the needs of beneficial predator insects as well, broadening my focus and helping me learn how to meet their specific needs. I learned about who the predators are, their enormous benefits, and which plants can provide food and shelter for them.

*Attracting Beneficial Bugs* is arranged helpfully into the following sections, all well-illustrated with beautiful and instructive photographs:

**Bugs:** Concise and fascinating profiles of predators and parasitoids including assassin bugs, big-eyed bugs, damselfly and dragonflies, pirate bugs, stink bugs (not all "bad"), flies of various sorts, beetles, parasitic wasps, lacewings, praying mantids, spiders and mites (the last two being arachnids, not insects).

**Flowers:** How flowers provide food and shelter, considering structure

and accessibility of plant parts, structure of insect mouth parts, size of insects, provision of nectar, timing of bloom, usefulness of weeds, and the place of native plants. Over 35 plants are profiled, indicating whether annual or perennial, USDA zone, size, time of blooming, and what insects they support.

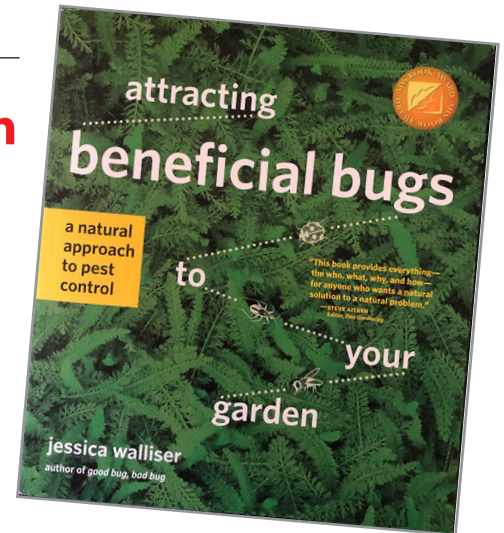
**Insectaries:** How to plan a border of flowering plants that will attract beneficial bugs, in particular the predators, to help other plants in your yard and garden. You are invited to add the profiled plants throughout your property and/or develop an insectary border, along boundaries, in lawn islands, or near gardens or buildings. Several plans with plants listed are provided to illustrate how to develop an insectary.

**Companion Planting:** An interesting and informative chapter on the benefits of companion planting.

**Summary Chart**, p. 202: "Putting it all together: who the beneficials eat and what to plant." This helps to draw the information from all the previous chapters together in one place for reference use.

**Purchased Beneficials:** What products are available commercially such as ladybugs and praying mantis, bug lures, and seed mixes. Explains the pros and cons of such products.

**Resources:** Suppliers of beneficial insects and related products and



soil test purveyors.

I learned so much from reading this book. Here are samples of the interesting information I gained:

When attacked by a pest such as aphids, many plants send out semiochemicals, which are a signal to beneficial predators to help the plant. These chemicals are even specific as to what is attacking the plants and thus call for different predators depending on the prey. This is chemical communication between species.

Many predator bugs can use nectar and pollen or plant juices to supplement their diet when prey species are scarce. For some species nectar and pollen are used to enrich their diet before laying eggs and they may lay fewer eggs if nectar and pollen are not available.

Plants can produce extrafloral nectar (EFN), i.e. nectar found on other plant parts than flowers. EFNs are viewed as a reward to predators who arrive to take care of a problem like mites, aphids or crop-eating caterpillars.

There are annuals and perennials and there are short-lived perennials, like coreopsis, delphinium,

*continued on page 3*

# Winter Sowing Seeds

by Sheri Fredericksen

I went to a **Winter Sowing Seeds Workshop** at the Gainan's Heights Garden Center this past winter and found it to be quite fascinating!

Here's what you need to get started: empty plastic container (remove the cap), utility knife, drill, potting soil, water (to moisten the soil), seeds, and seed markers and/or a permanent marker to write on the container what you've planted.

Note: Gainan's recommendation for the best growing success for our area are cold hardy annuals and perennial seeds. Check seed packages and look for ones that can be planted prior to our last frost date (May 15th) or you can also "cold stratify" seeds (see link below).

Once seedlings are starting to emerge, make sure to keep the plants moist but not wet. Depending on the type of seeds you grow, once the container is opened for the plants to receive full sun, make sure to keep them watered. Watch as they mature and thin according to the instructions on the seed package. If desired, you can plant the entire contents as a "pillow". A pillow means



cutting the container down on all sides and planting the entire contents as a single plant. (I started poppies and sweet alyssum and both containers were ready for planting the latter part of May. I planted the containers as pillows in the Veteran's County Courthouse garden and they did quite well last summer!)

The PennState Extension's website is very detailed and provides a lot of great information for winter sowing:

<https://extension.psu.edu/starting-seeds-in-winter>

If you're interested in cold stratification, the following website is also very interesting:

<https://www.americanmeadows.com/content/how-to-cold-stratify-seeds>

Happy winter sowing!

## BOOK REVIEW *continued from page 2*

dianthus, columbine, and gaillardia. These last a few seasons, then die out. Many do self-seed.

Blooms in populations of predator species lag behind blooms in prey populations, so patience in waiting for the predator to catch up can have good overall results, preventing the hasty application of pesticides that kill beneficial bugs as well as pests.

The quantity of bug species is mind-boggling. For example, there are over 3,000 North American species of rove beetles.

It is gratifying to have recent research and trends regarding soil health, plant diversity, and insect biology dovetail into a way of gardening that avoids synthetic chemicals, creates a plethora of diversity as well as beauty, and results in a healthy and productive garden environment. *Attracting Beneficial Bugs* is an informative and useful addition to my garden library. I hope you have the opportunity to read this delightful book.

## ANN MCKEAN *continued from page 1*

always evolving, but that is part of the challenge, the learning and the fun.

Ann loves to cook and has quite a "living spice" area in her kitchen. Her favorite plant there is a Calamondin orange tree. She says the wonder of nature never ceases to amaze her and makes her life more fulfilling. She also loves history and traveling to other countries to experience new cultures. Ann is always excited to learn new things, and now that she will have more time, looks forward to finally attaining her MG Level 3. She still likes sitting under a bush.



# Reducing Winter-Related Injury In Landscape Trees

by Abi Saeed

Montana can have harsh winter conditions that can sometimes challenge even our hardiest trees and shrubs, especially if steps aren't taken to set them up for the best success. Last winter was especially tough on many of our landscape trees and shrubs, and we saw significant amounts of winter injury across the state.

Follow these tips to set your trees and shrubs up for a more successful winter this year by allowing them to harden off and protecting them from common winter-related injuries.

## Dieback in Deciduous Trees

Dieback can occur on sensitive shoots and buds during temperature extremes, and can especially be an issue in marginally hardy trees and shrubs. Floral buds are more susceptible to dieback than leaf or stem buds, which can result in a reduction or lack of flowering and fruiting in the following growing season. It can be difficult to completely prevent winter dieback, but a few steps can be taken to reduce the likelihood.

- Select regionally hardy trees, shrubs, and rootstock for your growing climate and make sure that they are well-taken care of and healthy going into winter.
- Marginally hardy plants should be placed in more sheltered locations and, if possible, planted in groups.
- Avoid fertilizing and pruning late summer and fall to reduce the amount of new tender growth going into the winter.
- Make sure trees are watered sufficiently throughout the growing season, and check soil moisture regularly. Watering should continue until the ground freezes. It is especially important to keep watering newly transplanted trees and shrubs because they experience the most water-stress due to their underdeveloped root systems.

## Sunscauld

Sunscauld (also referred to as southwest injury) occurs when the sun heats up the bark of trees, which can begin stimulating cell activity in the winter. As temperatures drop after the sun disappears, these active cells can be killed, which results in cracking and splitting damage in the bark. This is especially likely in younger and newly transplanted trees, heavily pruned trees, as well as dark and thin-barked trees (such as cherries, plums, crabapples, ash, linden, maples, and honey locust). This is also more common in the south and southwest direction, where sun intensity is highest.



Trunk damage from sunscald

- Protect susceptible trees by wrapping their bark in white tree wraps, plastic guards, or white latex paint to reflect the intense sunlight.
  - Remove tree wraps and plastic guards in the spring as active growth resumes, to prevent constriction and girdling.

## Evergreen Winter Injury

Winter injury (also referred to as winter burn and desiccation) can be an issue for evergreen trees and shrubs, especially during long and dry winters. Unlike deciduous trees and shrubs, evergreens continue to lose moisture through transpiration in the winter. When the ground is frozen, and especially during periods of low humidity, low precipitation, and high winds, these evergreens can lose more moisture than they can replenish, which results in drying out and browning of

*continued on page 5*

## FEDERAL FUNDING FOR URBAN FORESTRY

The Yellowstone Valley Citizen Council met in the community room of the Billings Public Library on December 12th, 2023 to explain many aspects concerning the use of the federal grant that was awarded to Billings for urban forestry. There are several steps to put in place before October 2024 planting of trees, starting with forming a tree board, establishing a tree care ordinance, committing \$2 per capita annually, and celebrating Arbor Day.

*Text and photos by Sheri Kisch*



## St. John's United Greenhouse Tour

On December 13th, 2023, Master Gardeners toured the St. John's United Greenhouse and Urban Horticulture Education Center, part of what was Gainan's Downtown building. The greenhouse utilizes aeroponic vertical farming techniques to grow produce which is sold to St. John's culinary services. It is also an education center for young people to learn how vegetables are grown and harvested, and to gain on-the-job experience in urban agriculture for high school credit.

*Text and photos by Sheri Kisch and Suri Lunde*



*Cassy Crafton, St. John's United Greenhouse manager, conducted the tour*



## WINTER-RELATED INJURY *continued from page 4*

needles and leaves. Damage is most often seen on the south, southwest, and windward sides of the plant, but can sometimes affect the entire plant. Although all evergreens are susceptible, this can be especially problematic on broadleaf evergreens due to their larger leaf surface area and subsequent potential moisture loss.

- Plant marginally hardy and highly susceptible evergreens in locations protected from high winds and intense winter sun.
- Avoid late summer and fall pruning and fertilizing (which encourages new growth), because new growth is more susceptible to winter injury.
- Make sure trees are watered sufficiently throughout the growing season, so they are not water-stressed going into the fall.
- Make sure they receive plenty of water in the fall (October) until hard freeze.
- On sunny winter days during periods of very limited or no snow cover, these evergreen trees may need occasional supplemental watering
  - Water trees mid-day when temperatures are above 40°F to replenish moisture lost through transpiration.
  - Most tree roots are located in the top 6 to 24 inches of the soil and can extend 2–3 times past the circumference of the tree. Watering trees at the base/around the trunk is not very effective, as that water is not getting

to where it is needed most in the roots. Apply water around the drip-line (the area underneath the circumference of the tree branches) which is also referred to as the critical root zone.

- Water slowly to encourage deeper water penetration into this root zone.
- Barriers such as burlap can be used to protect particularly sensitive trees and shrubs, especially if significant winter burn has been a problem in the past.
- Anti-desiccation and anti-transpiration sprays can have variable/limited success, and are not an effective replacement for properly watering your trees.

If you have additional questions about tree care, your local Extension Offices are a great resource. Resources with more information on preventing winter-related tree and shrub injury:

### **Protecting Trees and Shrubs in Winter**

<https://extension.umn.edu/planting-and-growing-guides/protecting-trees-and-shrubs-winter>

### **Fall and Winter Watering**

<https://extension.colostate.edu/topic-areas/yard-garden/fall-and-winter-watering-7-211/>



*Photo by Eva Grimme*



# Tips For Remaining A Master Gardener

by Laura Estes

As with all successful organizations, volunteer or otherwise, it's worthwhile to occasionally review where we came from and where we are going. Extension Master Gardeners are land-grant university-trained volunteers, distinguished by a set of National Standards. Dr. Bob Gough created the Montana Master Gardening program in 1995, having previously created a program for the state of Rhode Island.

Master Gardeners serve communities throughout Montana by volunteering. Volunteer projects must be horticulturally related, not for profit, and give back to the community.

Sarah Eilers, Montana Master Gardener Coordinator, recently reminded us that individuals remain Master Gardeners as long as they volunteer, regardless of what Level they have achieved. Dues are not paid to remain a Master Gardener. **Ten hours of volunteer work and four hours of horticulture continuing education (CEU) per year are required to maintain status as a Master Gardener.** If you achieved Master Gardener status and then took a few years off, simply complete the 10 hours of volunteer work and 4 hours of continuing education to regain good standing. Many volunteer and continuing education opportunities are available, some for every season. See example lists below.

Volunteer hours must be recorded in the Volunteer Management System. Visit the MSU Master Gardener webpage at <https://www.montana.edu/extension/mastergardener/> for more information, access to CEUs and to record hours.

Supporting our county agent in educating the community about why to use certain plants and not others is an important aspect of being a Master Gardener. Equally important is that you enjoy your volunteer time and feel you are making an impact. If you have new project ideas that take advantage of your talents, please work with the Yellowstone County Extension Office to develop them (phone: 406.256.2821). A new horticultural specialist will be coming on board in the new year. We can work with them to notify Master Gardeners of new opportunities as they present themselves.

## Examples of Volunteer Opportunities

- Assisting in the Extension office, especially with Master Gardener classes, demonstrations or workshops
- Staffing a Master Gardener information booth at the farmer's market or county fair
- Writing or contributing to Master Gardener newsletters, news articles, local press or other materials

- Working with local retirement or assisted living communities on adaptive gardening for the elderly and physically challenged
- Assisting with trial research projects, demonstration gardens, plant sales or garden tours. (e.g. Montana Rescue Mission, Yellowstone Arboretum/ZooMontana gardens, Northern Plains Resource Council)
- Collaborating with the city parks department to help beautify and maintain public spaces in a sustainable manner (e.g. fairgrounds demonstration garden)

## Examples of Continuing Education Opportunities

- Cultivating Healthy Plants Webinar series <https://extension.usu.edu/pests/slideshows/>
- MSU Urban IPM DigitalChalk Portal <https://urbanipm.montana.edu/certification.html>
- Presentations by Master Gardening groups (approved by county agent)
- Community, horticulture focused presentations sponsored by local county extension
- Master Gardener conferences (state and national)
- Presentations from green industry professionals, e.g. county agent approved nursery presentations
- Presentations from non-profits like The Native Plant Society, Audubon, etc.
- Xerces Society Webinars, <https://xerces.org/>



### URBAN LANDSCAPING PRESENTATION

A presentation on **Urban Landscaping** was hosted by the Seed Library at the Billings Public Library and moderated by Elizabeth Waddington on November 18th. Ann McKean and Anthony Sammartano covered color, size, bloom time, shapes, trees, and shrubs that are of interest to pollinators, birds, and insects that each of us can plant in our own yards to increase healthy spaces in our neighborhoods.



Text and photo by Sheri Kisch



# Lavender Demystified

by Ann McKean, photos by Ann McKean

I have a confession. I *love* lavender. Sadly, lavender has not always loved me. I've struggled for years to get it to grow in various gardens in various states all over the country, but I think I've finally cracked the code!

*Lavandula angustifolia*, common name English lavender, or narrowleaf lavender (*angustifolia* means narrow leaf in Latin) is native to the Mediterranean region where it has been cultivated for millennia. Because of where it evolved, it performs best in full sun and rocky, infertile, neutral to alkaline well-drained soil and is intolerant of constantly moist roots. It does best with a good soak and then time to dry out. Because our soils are usually heavy and poorly drained, you are the lucky gardener if you have a sloped area in your yard. Barring a natural slope, you can create one by adding soil to form a low berm or elevated area on which to plant your lavender. Alternatively, you can heavily amend your soil with sand and gravel (don't use compost!) to increase its drainage, although, adding a couple wheelbarrows of soil is probably easier! Even a little bit of elevation helps, although I have happy lavender on level areas too. Remember to hold the root ball a little high in the hole and don't overwater!

Plant your lavender next to a path and you will release its fragrance as you brush by. Most English lavender varieties are a zone 5 and I have seen them survive all over Billings and even in downtown Red Lodge. Plant breeders have released several varieties which they claim to survive a zone 4. Of the two I have tried, I



Try different varieties of lavender

nutrients from the past season can gently compost back into the soil, critters can find food and cover, and I think that even in death, the plants are beautiful.

I prefer 'Cynthia Johnson' over 'Super Blue'. She seems to be more forgiving of too much water. 'Hidcote', popular for its darker purple color, also does well here. 'Munstead' is a lighter purple, and 'Opal Rain' has pink buds opening to white blossoms. 'Provence' is a tall, graceful variety that I adore but has given me inconsistent results.

When I planned my front garden to be a wildlife habitat, I included a few lavender plants because I just love it so much and the deer conveniently do not. They tend to avoid most silver foliated plants. I installed a meager drip system which only covered the original few plants. In the seven years since I planted those original plants in the lousy fill dirt that was here, they have taken hold and multiplied prolifically. Most are now growing where there is no supplemental water source. Take note that when planting a new plant of any kind, the roots can never be allowed to fully dry out, so consistent supplemental watering will be necessary for establishment. While drip irrigation is always preferable to sprinkling, as this reduces the risk of fungal infections, never sprinkle at night.

Lavender is a woody subshrub and can be a little temperamental about pruning. Throughout my garden, I try to mimic nature by leaving the season's growth standing all winter. That serves multiple uses: the remains of summer serve to protect the crowns of the plants and the soil from harsh sun and weather thus keeping the soil moisture and temperature more consistent, some

Invariably, there will be tip damage to your lavender plants by spring. Wait until the threat of a deep freeze is past and new growth is starting to show and then prune all the dead material away just into the live growth. You will see tiny shoots along the basal woody stems. If you cut too early in spring or too far back into the old wood, you run the risk of killing the plant or at the very least, the branches which were cut too short. Pruning out all dead wood creates air flow, reducing disease risk and stimulates fresh growth. Additionally, you can shear after the first bloom but only cut the spent bloom stems and not back into the wood. Depending on the weather, you will see a second flush of blooms late in the summer.

Bees and small butterflies of all sorts cover my lavender all summer. I enjoy harvesting stems for making lavender wands, and potpourri. I especially love to make a lavender and rhubarb simple syrup to pour over iced club soda. Garnished with a sprig of lavender, it's a treasured taste of summer.

Although lavender may seem difficult to grow, now that you know the right planting and care, it will give you years of pleasure. If you've thought about growing it, go for it!



Let lavender self-sow

# Yellowstone Arboretum

by Laura Estes

Nestled among ZooMontana's animals and gardens is a resource you may not know – a tree library! An arboretum is an area devoted to specimen plantings of trees, woody shrubs and vines. Distinct from a forest, nursery or park, it is a place where historical and experimental varieties are displayed and nurtured for research, educational, and ornamental purposes.

The first trees were planted in 1992 with the expansion of ZooMontana grounds. The collection now contains about 200 accessioned trees of more than 180 species. "Accessioning" is collecting extensive data on each individual tree (shrub or vine) including taxonomy, location, age/history, site conditions, etc. One interesting piece of data recorded is monetary value. Characteristics such as photosynthesis, storm water storage, utility conservation (shade and wind protection) and increase in property value are plugged into a formula and translated into an annual dollar benefit.

Recorded data can be viewed on the Arboretum website and is also shared with partners such as the National Phenology Network which monitors



how plant species are adapting to climate change. Once you identify a tree of interest, go to the Zoo and see it up close in all its splendor. Or find a splendid tree on your visit to the Zoo and go home and find out all the facts. It works both ways!

Yellowstone Arboretum was accredited by ArbNet, (Interactive Community of Arboreta) in 2018. Tizer Gardens in Jefferson City was the only other accredited arboretum in the state. Since then, the Rocky Mountain College campus has also been accredited, and the City of Billings is seeking accreditation for Centennial Park as a third Billings arboretum.

Just as zoos educate and play a role in protecting animals and their habitats, arboretums are places where endangered trees can be studied and protected. For instance, the collection includes a Koyami Spruce (native to Japan) and a Serbian Spruce (native to southeastern Europe), both listed as endangered due to deterioration of their native habitats. Their presence

here allows for further study and possible propagation.

A ginkgo tree was added to the collection in early May at the west end of the parking lot. It was originally scheduled for demolition in the Elks Club remodel. The Arboretum sought permission to relocate it and Montana Tree Movers agreed to donate their services. Ginkgoes are slow growers, one of the oldest known surviving tree species. The city forester was told that a previous mayor of Billings had ordered ginkgo trees shipped to Billings directly from Asia many decades ago. While we can't confirm if this ginkgo is one of those trees, "Stan" (named for the tree mover) has been a Billings resident for more than 40 years and thanks to the Arboretum, now has new digs.

I learned about the Arboretum at a tree pruning workshop they presented on a crisp fall day last October. Future educational programs are planned for both children and adults on how to care for our urban forest, a most valuable resource.

For plant lovers, the benefits of the Arboretum may be summarized as "a beautiful place for people to visit, learn and enjoy." Consider volunteering throughout the year to help maintain the collection or in one of their projects. Simply fill out the volunteer form available on the website (<https://www.yellowstonearboretum.org/>) and Arboretum staff will contact you. Volunteer hours count toward remaining a Master Gardener in good standing.

## WORMS PRESENTATION

On November 24th, Sandy Stroth from Hungry Worms Products gave a presentation on cultivating worms, how they make worm castings, and the benefits of using the castings for indoor and outdoor plants.



Text and photo by Sheri Kisch



# Hügelkultur – What ‘Tur?

by Sheri Kisch

I so wish I had remembered some information that Amy Grandpre passed along many years ago before we began making our high raised bed; it would be so much better than it is now at three years. It was called hügelkultur, a German word for “hill” or “mound culture”. To fill a 4'x10'x4' bed needed way more dirt than we had envisioned. Using hügelkultur would have been much better for the environment, conserving water, and as the wood decays over time worms, fungi, nematodes, and microbes are releasing nutrients. I think of it as a neat experiment and more fun too.

Hügelkultur was first developed in Germany centuries ago using logs and branches topped with a lot of smaller wood pieces, leaves, grass clippings, manure, and yard and food waste. Soil, compost, and other natural materials can be mixed on top. Finally, your choice of soil mixes for planting.

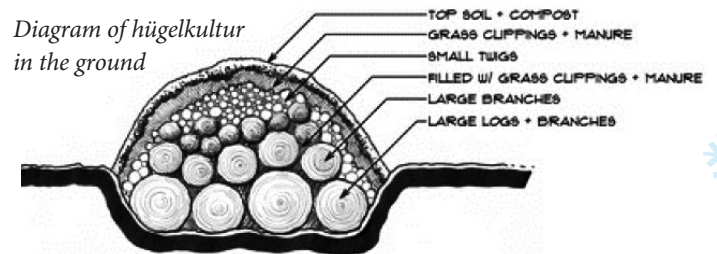
I've heard people say that they don't have woody debris on their property. I took a drive between Billings and Laurel and there are a lot of piles or fallen trees that maybe a property owner would like to have gone. You have only a car? No one said you had to haul a whole trunk home. Cut it up in pieces and put them on a tarp in the vehicle.

This winter would be a good time to look or ask about gathering wood and planning where you would start hügelkultur. It could be a new bed, in the ground, on top of the ground, or an existing planter of any shape or size. The hügelkultur can be any shape you envision. It can be a sustainable storm water retention place.

About six years ago, Jim Cooper and Paula Berg put together a hügelkultur in the garden of Northern Plains Resource Council on 27th Street downtown Billings. They planted nitrogen fixing peas the first year and found that



A cross section view of a hügelkultur bed



Hügelkultur bed at Northern Plains Resource Council

vines (cucumber, squash) grew best. Paula can be reached at 406.248.1154 for questions.

Hügelkultur is easy and adaptable, giving you more space to plant than on flat ground. It can produce food, improve soil by self-composting over time, and can be a tool for carbon sequestration.

There is a lot of information on hügelkultur in books and videos for you to look at. This isn't for everyone but would make an excellent experiment. We would love pictures and stories of yours.

[https://www.researchgate.net/publication/349573814\\_HUGELKULTUR\\_WHAT\\_IS\\_IT\\_AND\\_SHOULD\\_IT\\_BE\\_USED\\_IN\\_HOME\\_GARDENS](https://www.researchgate.net/publication/349573814_HUGELKULTUR_WHAT_IS_IT_AND_SHOULD_IT_BE_USED_IN_HOME_GARDENS)

<https://extension.okstate.edu/fact-sheets/sustainable-landscapes-creating-a-hugelkultur-for-gardening-with-stormwater-management-benefits.html>

<https://www.almanac.com/what-hugelkultur-ultimate-raised-bed>

<https://mgsoc.org/2019/01/hugelkultur-what/>

Photo courtesy of Washington State University Extension



## ~ Gentle Reminders ~

Make sure that **INFORMATION** (e.g. email, phone number, home address) on your **ACCOUNT** on the MSU Master Gardener webpage (<https://www.montana.edu/extension/mastergardener/>) is correct and up-to-date so that you can receive important emails and news promptly.

Please **RECORD** volunteer hours, food donation, and continuing education units (CEU) regularly. This is helpful data that can be used to highlight major needs for program growth and to demonstrate the incredible impact our Master Gardener Program has generated in our community.

# Ladybugs/Lady Beetles

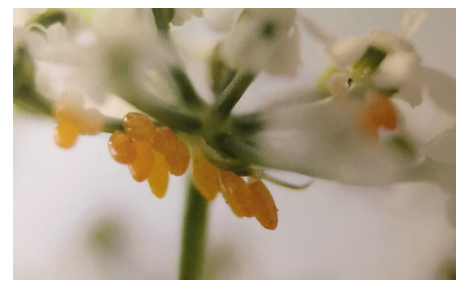
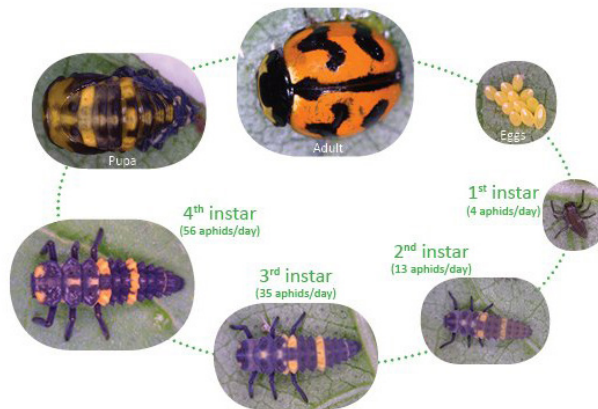
by Ann McKean

An extremely beneficial group, the insects commonly known as ladybugs are not true bugs (order *Hemiptera*) but are in the order *Coleoptera* (beetles) and are more accurately called lady beetles or ladybird beetles. It is thought they received their common name in the Middle Ages when they were believed to be sent by the Virgin Mary (“our Lady”) to help farmers. They are found from forest to field, and there are more than 5,000 species in the world, more than 450 in North America, and at least 11 species in Montana, including the recently discovered “headless ladybug”, which was put in a unique genus with one other new discovery in Baja and is the rarest lady beetle in the United States.

Most lady beetle larvae and adults are voracious predatory insects and are best known for consuming large quantities of aphids, scale insects, mites, other sap feeders, insect eggs

Lady beetle lifecycle – don't kill that scary looking bug!

Courtesy of thebeatsheet.com.au



Ladybug eggs are yellow and bullet shaped.



Ladybug larvae are nearly as diverse as the adults. They are small and alligator-like in appearance, with assorted markings and colorations. All are predaceous, feeding on various insect prey.

and occasionally each other's young. A single lady beetle can consume up to 5,000 aphids in a lifetime. Many species supplement their diet with pollen and nectar. A rare few, including the Mexican bean beetle and the squash beetle, eat plants and one eats fungus, notably, powdery mildew.

Although some are metallic blue, grey, solid brown and even black with red spots, most lady beetles are red to orange with varying numbers of black spots. The invasive and

aggressive multicolored or harlequin Asian ladybird beetles, (so named for their many colorations and markings) introduced in the early 1900s, can be identified by their white 'cheeks' and the black M-shaped markings on

their pronotum (head covering). Although all lady beetles can harmlessly bite for self-defense, Asian lady beetles are particularly pesky. Billings hikers reported the invaders covering rocks on the Rims this fall and experienced their irritating nibbles first-hand.

Most lady beetles lay clusters of upright cylindrically shaped golden colored eggs near aphids or other prey and reproduce one to three times in a season. The larvae look a little bit like a black-and-orange alligator and can travel up to 40 feet across an area as they search for prey. As all beetles, they undergo complete metamorphosis, going through four instars as they transition from egg to larva to pupa and finally, beetle. Many lady beetles overwinter as adults and often gather in groups at the end of the season, hibernating in leaf litter and crevices in buildings. The multicolored Asian lady beetle gathers in especially large groups in October, which has earned it the nickname Halloween beetle. The



Photo courtesy of the New Hampshire Union Leader Newspaper



Photo courtesy of Griffin Dill via Bangor Daily News

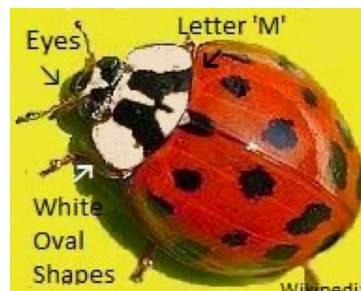


Photo courtesy of Wikipedia

Above: Multicolored Asian Lady Beetles; Right: Multicolored Asian Lady Beetle identification

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## LADYBUGS/LADY BEETLES *continued from page 10*

native convergent lady beetle also gathers in large groups to migrate.

Natural predators of lady beetles include birds, small mammals, and predatory insects such as wasps. Their red coloring warns predators of their natural defense: toxic, smelly yellow blood which is exuded from their leg joints if they are attacked, discouraging repeat offenders.

Threats to dwindling native lady beetle populations and their diversity include competition from introduced, non-native Asian lady beetles, pesticide use, and loss of habitat. Native convergent lady beetles are also wild-collected for sale as natural pest control, but unfortunately, most of those that survive the trip from capture to their new locale fly away upon release. A much better strategy is to plant nectar sources to attract lady beetles to your garden with umbelled blossoms, such as alyssum, butterfly weed, cosmos, coreopsis, fennel, dill, sunflowers and even dandelions. They are also grateful for any water source.

The increasing population growth of the invasive Asian lady beetle combined with weather conditions that saw a heavy aphid season led to a high concentration of congregating lady beetles as temperatures dropped this fall. People reported structures in town and rocks on the Rims covered with the non-native insects as they gathered in warm places to hibernate. Most native lady beetles do not display this behavior.

Besides planting a variety of plants, including natives to support the lady beetles in your neighborhood, you can participate in The Lost Ladybug Project. It is a national citizen science project through Cornell University and is a great way to learn more about ladybugs and help entomologists better understand how to save the rapidly declining native populations. The next time you are gazing in delight at a ladybug at home or on your travels, snap a photograph and send it to <http://www.lostladybug.org> and help save our beloved native ladybird beetles!

### 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.

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Suri Lunde • Ann Guthals  
Ann McKean • Laura Estes  
Sheri Fredericksen • Sheri Kisch

### CONTRIBUTORS

Abi Saeed • Joann Glasser  
Sherry Doty



**RECIPE** *submitted by Ann Guthals*

## Easy Lentil Soup

Yields: 5 servings

### Ingredients

- 3/4 tbsp olive oil
- 3/4 cup chopped onion
- 1 cup dried lentils (picked over and washed)
- 1 quart cold water or homemade vegetable broth
- 1 Yukon Gold potato (scrubbed and diced)
- 1 carrot grated
- 1/2 tbsp chopped fresh basil
- 1 cup fresh or canned tomato juice
- Dash of salt (optional)
- 1/2 cup shredded fresh spinach

- 1/4 cup white wine (optional)
- grated Parmesan
- sprig of fresh basil

### Directions

Heat oil and saute onion until transparent. Add lentils and liquid. Bring to a boil, cover and simmer over low heat until lentils are tender (about 1 hour). Watch water level and replenish as necessary to keep lentils covered.

Add potato and carrot, basil, tomato juice and salt. Cook until potato is tender. Add spinach and



cook until spinach wilts and turns dark green (about 4 minutes). After the mixture returns to a boil, stir in white wine and serve with grated Parmesan and garnish with a sprig of fresh basil.

*Recipe adapted from The New York Times New Natural Foods Cookbook, Avon Books*

# "I Thought I Knew How To Garden..."



Every gardener has at least an experience which was strange, disappointing or frustrating at the time, but later turned out to be a funny faux pas, laughable surprise or just growing gone wrong. Don't be shy and come share your humorous story with fellow gardeners by submitting it to [ynergardener@gmail.com](mailto:ynergardener@gmail.com) to be published in future newsletter issues. We all could use a laugh or two!

## Garden Huckleberries (Or Not)

by Joann Glasser

I was in Barnes and Nobles last winter perusing the magazine rack when I came across *The Whole Seed Catalog* and just had to have it.

Thumbing through was like a kid in a candy store. But one plant really caught my eye: Garden Huckleberry (*Solanum melanocerasum*). Oh yeah! Definitely getting that one. Couldn't wait to try it. Got the seeds, planted up several, got six to germinate, gave one to Heidi, kept two for myself, and planted three in the straw bales at the Metra demonstration garden.

They began to grow. And grow. They got to three feet tall. They started to bloom. I was a little bit confused. The blooms looked like night shades? I went back to the catalog and reread the description. 'Similar to tomatillos'. OK, that explained the blooms. Let's see what they do.



Waited until they turn dark purple black before eating as the green ones are slightly poisonous. And... yuck! Bitter dirt. OK, maybe they aren't ripe yet. Waited a couple more weeks. Tasted again and... yuck! Still bitter dirt.

Well, it did say they changed flavor when cooked with a little sugar. I cooked some up and... yuck! Sweet dirt. What a disappointment! Went back to the catalog and reread the description. 'Wait until they are slightly soft and dull purple black'. So maybe I didn't wait long enough. Tried one that was soft and dull and... well, doesn't taste bitter any more but not the sweet juicy berry I was dreaming of when I saw them in the catalog.

Moral of the story: always read the whole description and take the taste references the catalogs say in the descriptions with a grain of salt.

## Building Up Vocabulary

by Suri Lunde

I grew up near the equator where flora grows all year round and the seasons are either rainy or dry. When I relocated to the U.S., I bought a beautiful caladium because it reminded me of the tropics. It was planted in a pot and I enjoyed it the whole summer. As autumn came, the leaves withered completely and I thought it had died; so I decided to reuse the pot for another plant by digging the soil out with a sharp gardening knife. To my surprise, I jabbed right through the heart of the bulb, which was very much alive! And that's how I added the word 'dormant' to my gardening-in-Montana vocabulary.



## Yucca Battle Wounds

by Suri Lunde

When planting yucca, consider their proximity to areas you might need to crouch down to weed, deadhead, put in plants, etc. From my painful personal experience, always bend or kneel down with your backside facing away from the plant or risk uttering many unprintable words after getting poked, scratched or daggered in the face or other body parts by the sharp leaves.

## Pretty Angels of Death

by Suri Lunde

One year, I decided to grow cabbage and cauliflower. I bought a few starts and planted them into my vegetable garden. They looked healthy with flourishing leaves and developing buds. As the weeks progressed, I saw some dainty white butterflies flitting around the vegetable plot and I was so happy because butterflies were a sign that my garden was attracting pollinators.



I did not tend my vegetables for a few days due to work schedule but I was confident all was well. Imagine my

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# How Gardeners Can Play A Role In Bee Conservation

by Abi Saeed; photos by Abi Saeed

Pollinators, especially bees, are critical to our agricultural operations and an important component of our food systems. In addition, bees also play a crucial role in sustaining native plant biodiversity, which supports other wildlife. Montana is home to between 500–750 species of bees, including 28 bumble bee species. Habitat loss and pesticide use are among many factors that play a role in declining populations of bees, but home gardeners can have a positive impact in bee conservation.



Bees need three main things in order to thrive in any landscape: food (floral resources), shelter (nesting habitat), and protection from pesticides. By intentionally incorporating practices that create a safe and welcoming environment for bees in our yards and gardens, we can play a role in supporting these important pollinators.

When considering floral resources for pollinators, there are countless lists available! Incorporate a diverse variety of flowering plants in your landscapes (and choose flowers that vary in color, texture, shape, size, and especially bloom time). Making sure that you have flowering plants from early spring and into fall is especially important, because bees need food all season long (early and late season resources can sometimes be scarce).

Nesting habitat for ground nesting bees (comprising 70% of bee species) includes providing access to bare (mulch-free) soil, in undisturbed sections of your home gardens. For cavity nesting bees, leave your landscapes a little wild by leaving hollow-stem twigs and pithy branches and stalks (such as raspberry canes) in your landscape at varying heights, which act as natural nesting habitat. If using artificial nesting boxes or ‘bee hotels’ make sure

to clean these before reusing them, to prevent a buildup of pest and disease issues.

Finally, make sure that your home gardens do not provide unnecessary exposure to pesticides (including insecticides, herbicides, and fungicides). Use Integrated Pest Management to reduce overall pesticide use and if pesticides are required, follow practices to protect bees (including reading and following all label directions, not spraying flowers in bloom, removing flowers that may have been contaminated by pesticides, choosing alternative formulations and timing to reduce risk to bees, and selecting products that have lower residual activity).

For more information on pollinator conservation in home gardens, check out this new MontGuide on Creating Native Bee Habitat: <https://www.montana.edu/extension/montguides/montguidepdfsforstore/MT202301AG%20Creating%20Native%20Bee%20Habitat.pdf>

## I THOUGHT I KNEW HOW TO GARDEN

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horror when I discovered the massacre of my brassicas. They were decimated: leaves and buds were gone, only skeletal remains of leaf midribs and stalks were left. The culprits were those lovely white fluttering insects: cabbage white butterflies! As they happily pranced around my vegetables, they were also laying eggs which eventually morphed into plant-destroying caterpillars. Those butterflies were angels of death in disguise! Nowadays, let's just say not many *Pieris rapae* dare enter my vegetable garden air space.



### IMPORTANT LINKS

**Yellowstone MG Newsletter Submissions**  
ymastergardener@gmail.com

**Yellowstone County Master Gardener Association**  
*(for information on the Association, Master Gardener projects and volunteer activities, calendar of upcoming events, minutes of past Board meetings, etc.)*

**Website** [www.ycmgamt.com/](http://www.ycmgamt.com/)  
**Facebook** [www.facebook.com/ycmga](http://www.facebook.com/ycmga)

**Montana Master Gardener Program**  
<https://www.montana.edu/extension/mastergardener/>

**Montana State Master Gardener Facebook**  
<http://www.facebook.com/MTMastergardener>

**Master Gardener links and resources**  
<https://mtmastergardener.org/linksandresources/index.html>

**Schutter Diagnostic Lab** (*plant diseases, insect damage, and environmental plant problem, how to send samples*)  
<https://diagnostics.montana.edu/>

**Montana Frost/Freeze/Precipitation Data by County**  
<https://mtmastergardener.org/linksandresources/frostfreezedata.html>

**Yard and Garden MontGuides**  
<https://store.msuextension.org/Departments/MontGuides-by-Category/AG/Yard-and-Garden.aspx>



# Summary Of Yellowstone County Master Gardener Association Quarterly Meeting

by Sherry Doty, Secretary, YCMGA

**15TH NOVEMBER, 2023**

## Old Business

**Tour:** Paul Scarpari set up a tour of St. John's United Aeroponic Greenhouse on Wednesday, 13th December, 2023 at 5 pm. The address to the greenhouse is 502 N. 30th Street, Billings. Sherry Dotty will email Association members. Joann Glasser suggested advertising this tour on the website and Sherry suggested adding to the Facebook page as well.

Sherry said the Association's Facebook page has been listing items from the MSU Extension's Facebook page. Joyce Hendricks suggested that whoever chairs the education committee should be sure to advertise on both pages.

## New Business

**By-laws:** MikeWalz mentioned some items to think about before redoing the by-laws.

**Term Limits for Board Members and Officers:** Joann said that the limits and responsibilities should be clarified and simplified.

**By-laws Committee:** Mike said we will set up a by-laws committee. We will announce it at the November 20th fall social and recruit members of the Association to help.

**Active vs. Inactive Master Gardeners:** We need to define the requirements for membership.

**Social Budget:** Steve Restad made a motion to approve \$50 budget for the fall social. Seconded by Joyce. All approved.

**Survey Results:** Sherry briefly read some of the results from the

survey that was sent to Association members. There was some discussion of the ideas on the survey. Paul will talk with Karen Botnen about having the Spring BBQ at the ZooMontana. Joyce suggested having a speaker at the BBQ. We all agreed. Mike suggested the Plant-a-Palooza at the BBQ to trade plants.

**Greenhouse Update:** Joann gave a quick update on the Metra Demo Garden Greenhouse. She is planning to put in some heaters and fans with a goal of a spring completion date. She is doing some research on heaters and working with the Metra workers to help with the approval and installation.

**Brochure:** Sherry requested putting Association brochures in local businesses, including nurseries, etc. She will ask Heidi Schueler about the Master Gardener brochures as well.

**Association Dues:** Steve asked if we are keeping the Association dues \$20 per year and \$50 per 3 years. To be discussed when we redo the application.

**Refresher Class Fee:** Joann suggested the Association pay for members to attend the Master Gardener classes if a member wants to attend a second time.

**Landscape Design School:** Joyce announced that the Landscape Design School, Class 4, through the National Garden Club, will be held in Billings. It will be a 10-hour class stretched over 2 days. The dates are March 30th and 31st, 2024. Joyce will keep us posted and let us know when it is time to advertise.

Mike asked us for at least three things from the meeting to keep in mind

till next time: by-laws changes, Association brochures, survey results

**Next Meeting:** The next meeting will be held Wednesday, January 17th, 2024, at 5 pm in the large conference room at the Billings Public Library.



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