GROUNDED

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INSIDE THIS ISSUE

New Master Gardener Training Starts in September . . .

by Barbara Guilland

The Master Gardeners of Grant-Adams Counties will be offering a new training course to those interested in becoming certified Master Gardeners beginning September 7th. The training involves attending live classes and WSU Extension online courses that run from September to December.

Training community members to be certified Master Gardeners is the WSU Master Gardener Program's most important contribution to our communities' health and environment. Although many who take the training become lifelong Master Gardeners who teach classes, staff plant clinics throughout Grant and Adams Counties, and answer questions from the public about gardening through an online plant clinic, many others simply use what they learned in the classes or workshops to change the way that they garden and view the natural world and their place in it.

WSU Master Gardener classes are offered in Grant County every other year. Gardeners interested in becoming Master Gardener volunteers may apply for the program online at ga.mgvolunteers@wsu.edu, or call the Grant County WSU Extension Office at 754-2011 for an application, or pick an application up at 1525 Wheeler Road, Moses Lake, WA. The **deadline** for applications is **August 31st.** All of the live classes/ workshops will meet on Saturdays.

- **Saturday September 7th, 2019.** This orientation meeting will be held at the WSU Grant County Extension Office in Moses Lake. Enrollees in the program will be introduced to the WSU Master Gardener Program Coordinators and Andy McGuire, Director of Grant County Extension, who will give short introductions about the WSU Extension and WSU Master Gardener Program.

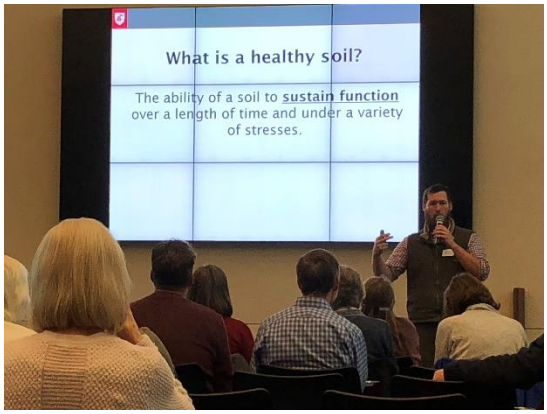
  Interns will meet the veteran Master Gardeners (MGs) who will serve as mentors to them as they work through the online course. They will receive the schedule of the live classes, usually held at 2-week intervals through the next three months; instructions for access to the online classes; and a handbook that will help them begin work with their fellow interns and MGs on the many Master Gardener projects throughout Grant and Adams Counties.

- **Saturday, September 28th, 2019:** 9-noon at WSU Sunrise Orchards Karen Lewis, who has been a WSUE Tree Fruit Specialist for many years and a friend of the Master Gardener program in Grant County since its inception, will cover tree fruit growing/management during an onsite tour of WSU Extension Research fruit tree orchards. This particular class/lab has been part of the curriculum for many years.
- **Saturday, October 12th, 2019:** 2-4 PM at the Huck Fuller Bldg. at the Grant County Fairgrounds, Moses Lake. Mike Bush, a pest biologist with the Washington Department of Agriculture and recently retired from WSU Extension, will speak about insect identification and plant problem diagnosis.
- **Saturday, October 19th, 2019:** 1-3 PM Cloudview Farms in Ephrata. Isaac Lnenicka, Certified Arborist and Head Gardener at Cloudview Farms, will present the class/lab, which is dedicated to growing food without the use of synthetic chemical fertilizers or pesticides. Cloudview Farms also promotes community wellness through children's educational programs. It strongly supports community events and programs like the WSU Master Gardener Program.
- **Saturday, November 2nd, 2019:** 1-3 PM at the Huck Fuller Bldg. at the Grant County Fairgrounds, Moses Lake. Paula Dinius, Chelan-Douglas Extension Urban Horticulturist, will present "The Basics of Gardening," which will cover site evaluation, plant selection, and watering. Paula has come to the Columbia Basin many times to present topics of interest to gardeners.
- **Saturday, November 16th, 2019:** 1-3 PM. at the Huck Fuller Grange Bldg. Mary Shinn, a Master Gardener presenter for the Spokane Master Gardeners will present "Sustaining Healthy Soil." Her topic will cover the challenges of sustaining healthy soil in the face of increasing population, urbanization, and consumption. Mary was formerly a WSU Grant-Adams Master Gardener and began in 2003.
- **Saturday, December 7th, 2019:** Time and place to be determined. Wendy Descamp, Education Specialist for the Washington State Noxious Weed board, will present "Weeds and Weeds Management." Wendy has degrees in Biology and Forest Resources from the University of Washington. Prior to her position on the state Noxious Weed Board, she was collections manager for the herbarium at the University of Washington Botanical Gardens.

Interns have until December 31st, 2019, to complete and pass the online portion of the WSU Master Gardener Program coursework. Then, interns have the following year to complete 50 hours of volunteer time that leads to their certification as WSU Master Gardeners.

Annual Gardening Symposium Rated Fantastic

The 5th Annual Columbia Basin Eco-Gardening Symposium, which was co-sponsored by the Grant-Adams Master Gardener Foundation and the Grant County Conservation District, took place on April 13, 2019, at the Technical Skills Center in Moses Lake, with just over 100 attendees. The free symposium focused on science-based presentations tailored to help home gardeners be more successful in their gardening efforts.



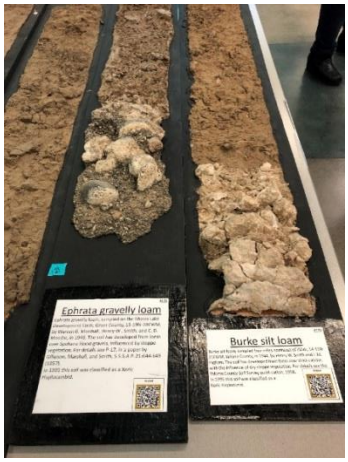
Presenter Isaac Madsen

Feedback from those attending this event rated the event extremely high, with comments like "best symposium I've attended in three years," "lots of valuable information," "food was great." Attendees also identified what specific knowledge they had gained after listening to each presentation in a written survey. The speakers for this year's event were Kurt Braunwart who spoke on using cover crops for the home garden, Julie Sanderson, on weeds and weed control options, and Isaac Madsen, on soil management in the garden. Kurt Braunwart is the owner of ProGene Plant Breeders in Othello, Julie Sanderson is Botanist Field Supervisor at the Chelan County Noxious Weed Board, and Isaac Madsen is a Research Associate with the Crop and Soil Sciences Department at Washington State University.

The symposium also showcased 15 vendors who shared information and handouts: WSU Crop & Soil Sciences, Audubon, BFI Native Seeds, Cloudview Farms, Ephrata Seed Library, Best Test Analytical Services, Grant County Noxious Weed Board, Wenatchee Chapter of the Native Plant Society, Worm Made Organics, Grant County Conservation District, Patton Worm Fertilizer, WSU Grant-Adams Master Gardeners, Natural Resources Conservation Service, Yakima County Pest Board, and Pheasants Forever.

Light refreshments were provided throughout the event, many door prizes were handed out, and plants raised by Master Gardeners at the Big Bend College greenhouse were handed out for free at the end of the program.

Presenter Kurt Braunwart



Vendor display of soil types in the Columbia Basin

Master Gardeners staffed 1 of 15 vendor tables

Each year the Eco-symposium offers presentations geared to the home gardener to help them:

- Learn the research-based principles and practices that help plants thrive in the Columbia Basin.
- Manage, conserve, and utilize our natural resources in ways that are cost effective, keep yards and gardens productive, and ensure quality habitat for beneficial insects and birds.
- Design sustainable landscapes to help protect water, soil, and air quality, and encourage the appreciation of conservation of all our natural resources.

Set your calendars for the 6th annual event, which will be held on Saturday, April 20, 2020.

Groundcovers . . . *by Diane Escure*

Sweet Woodruff *Galium odoratum*. Good for steep slopes. Grows in shade, moist soil Photo: D. Escure

Do you have places in your yard where lawn isn't practical or just won't grow? Can't get lawn to grow under shady trees? Maybe tree roots or steep slopes make lawns difficult to mow or you want to help control erosion on dry slopes? Here's a suggestion: Try groundcovers.

Groundcovers are low-growing (generally less than 24 inches), low-maintenance shrubs, perennials, or annuals that blanket the ground, spreading easily. As an alternative to turfgrass in some situations, groundcovers add pattern and texture, provide softer edges for walks and walls, help reduce soil erosion and suppress weeds, and can also provide a transition between landscapes. As long as you locate them where they prefer sun or shade, you don't need to pamper them. One caveat, unlike grass, most groundcovers don't do well being walked on.

Best uses for groundcovers:

- As a lawn substitute in shady areas.
- On dry slopes, landscape medians, parking strips, traffic islands and street rights-of-way.
- On hot, dry, south and west exposures as well as for dense, dry, shaded areas beneath trees or shrubs; along the north side of wall and fences; and in front of low windows.
- Along the north side of wall and fences and in front of low windows.

- At the base of trees to protect from the mower.
- In areas between buildings to reduce weed growth.
- In a bed of spring-flowering bulbs, can hide the fading leaves after flower bloom.

Groundcovers can provide a living mulch for plants that do best under cool soil conditions and they help conserve water when using drought-tolerant species.

In choosing a groundcover, first consider the effect you want it to achieve. Then select one that has the requirements (soil, sun light, drainage) that are best suited to the conditions of the site where you want to plant it. For a complete list of groundcovers suitable to the Columbia Basin, go to https://extension.wsu.edu/spokane/master-gardener- program/home-lawn-and-garden.

Pinks *Dianthus*. Gives excellent coverage; fragrant trim after flowering. Likes full sun and moist soil. Photo: D. Escure

It's best to plant groundcovers in April, June, and September (after heat has subsided). Small plants, 1 gallon or smaller, can heave out of the ground during freezing/thawing conditions if planted later than October 1st. It's important to prepare the planting bed to develop a dense, healthy groundcover.

Make sure that existing weeds are hoed, or pulled out, or the area is covered with clear plastic and fastened down for six weeks in June, July or August to generate enough heat to kill existing weeds and weed seeds. Perennial weeds can become a big problem later if they're not eliminated before planting groundcovers. While groundcovers generally choke out most weeds and hide the ground below them, most do not choke out all weeds, and can be a real maintenance nightmare if not established and grown properly. Occasional hand weeding may be needed. Some groundcovers spread by offshoots or runners and will fill in quickly when the soil has good aeration and drainage. Organic materials, such as peat moss, compost, or well-rotted manure, improve the water-holding capacity of sandy soils.

Hosta, many varieties. Easy to grow; tolerates tree root competition. Grows in part sun or shade, moist soil. Photo: D. Escure

When planting groundcovers, use a slow release fertilizer at the base of plants or broadcast 1 lb of 10-10-10 granular fertilizer over the entire planting areas after the groundcover is planted. Then water well. Watering, weeding, mulching, and feeding are the main requirements for new groundcover plantings. Water during dry periods. An occasional thorough soil soaking is better than frequently watering lightly. Be sure to water the groundcover well in late October.

Silver Mound Artemisia *Artemisia schmidtiana*.
Finely cut grey foliage, very aromatic.
Full sun; drought tolerant.
Trim to ground in spring. Good for steep slopes. Photo: D. Escure

Groundcovers take some time to establish. Since the first two to three years are critical in their maintenance, be certain to give them all the water and fertilizer they need. But also be certain not to over water. When you provide groundcovers with optimal growing conditions, they can better outcompete the weeds and provide beauty to the home landscapes.

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https://extension.colostate.edu/topic-areas/yard-garden/xeriscaping-ground-cover-plants-7-230/.

Ground Covers for the Landscape, by Don Janssen, UNL Extension Educator, University of Nebraska Extension
https://lancaster.unl.edu/hort/articles/2008/trygroundcovers.shtml

Swarming Honey Bees—Important for Pollination . . . *By Mark Amara*

Bees, bees, bees. They are super important indicators of the health of the ecosystem environment. As small as they are, these little buzzers contribute more than 18 billion dollars to the US economy pollinating more than 90 crops. In Washington State, ten of the most important commercial crops are dependent on bees for pollination. Honey bees are essential for fruit growers, vegetable producers, and seed farmers to produce sustainable crops, which add billions to the local economy. Blueberries and cherries are 90% dependent on bee pollination and some seed crops (carrot, broccoli, and onion) are entirely dependent on pollination by bees.

To remain productive, honey bees need a year-round source of good food and require a variety of wholesome nutrients and clean water. They can fly up to 5 miles from the hive but generally fly 2 miles or less. Though bees have been around for millions of years, their very survival depends on interactions with humans. Over time, stressors to bee health have become more and more challenging. As natural forage plants have been destroyed, food sources have literally dried up or become inadequate to sustain remaining populations. There continues to be infestations of insects like mites, diseases like colony collapse disorder, reduced genetic diversity, and exposure to certain types of pesticides that decimate bee populations. It is of critical importance to have adequate season-long forage and abundant pollinator plants.

Encouraging landowners to emphasize practices beneficial to honey bees should be one of our highest priorities and working with landowners and public land managers on planting or maintaining forage for bees, in working with noxious weed boards to minimize impacts to bees, and finding opportunities for public funding and cost sharing to support pollinator improvement programs. Efforts are also underway to control parasites and pathogens, improve genetic diversity, and educate people in pesticide misuse and use around bees, but these are continuing challenges.

In 2014 there were 983 beekeepers in Washington State ranging in size from 2 to 10,000 hives or more. Seventy three percent of those had 5 or fewer colonies while 27 registrants had more than 300. Nationwide, in the last 60 years, honey bee colonies have declined from 6 million in 1947 to about 2.5 million today. Colony losses of 20-40% between that time and now through 2014 are considered unsustainable to adequately provide pollination of commercial crops, and reduced honey bee populations pose threats to the very core of agricultural production.

Swarm of honey bees at Moses Lake residence

Honey bees live in hives called colonies. Each hive consists of one colony with its own queen. Swarming is a common phenomenon. If conditions are right with enough food and bees, swarming can happen naturally or with help. An older queen can leave with bees that accompany her and form a new colony while others stay with a new queen to help rebuild the original colony.

Many beekeepers use swarming to create new colonies or split their hives to manage it. Some beekeepers sell queens and colonies to people who want

to be beekeepers or to expand existing operations. So, when bees swarm, it can be quite an event especially when beekeepers come in to rescue those that are hive-less. Swarms that occur on their own are fascinating, and it is interesting watching them in action. Saving them to form new colonies is well worth the effort.

Beekeepers, Ken and Barb Caylor, rescue the swarm. All photos by Mark Amara

Bees get accustomed to their new home

A honey bee swarm was discovered by Moses Lake resident, Stephen Harger, in his backyard pine tree one evening in April 2019. He called the WSU Grant-Adams Master Gardeners to ask for assistance and/or a contact to save them. A beekeeper was notified and excitedly came out to collect them. The bees were really densely packed together with their queen at the end of a limb on the pine tree. Barb and Ken Caylor, beekeepers for over 50 years, came from Othello to the residence the following morning. They brought bee boxes that were used to entice the bees to populate to make their new home. They estimated there were approximately 15,000 bees present.

Already, this year, the Caylors had collected three similar swarms and were pleased to receive another. Once the branch of the tree was cut, it was dropped into a box which had honey in it and the bees were allowed to acclimatize. It took several hours for the bees to stop flying, but late in the day they had pretty much gotten together and were encouraged by the queen to stay. Once the bees were settled, the boxes were collected and taken to Othello to help pollinate crops in the area as needed.

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Growing Roses in the Columbia Basin: Part II. Prune to Keep Your Roses Healthy and Blooming . . . *By Barbara Guilland*

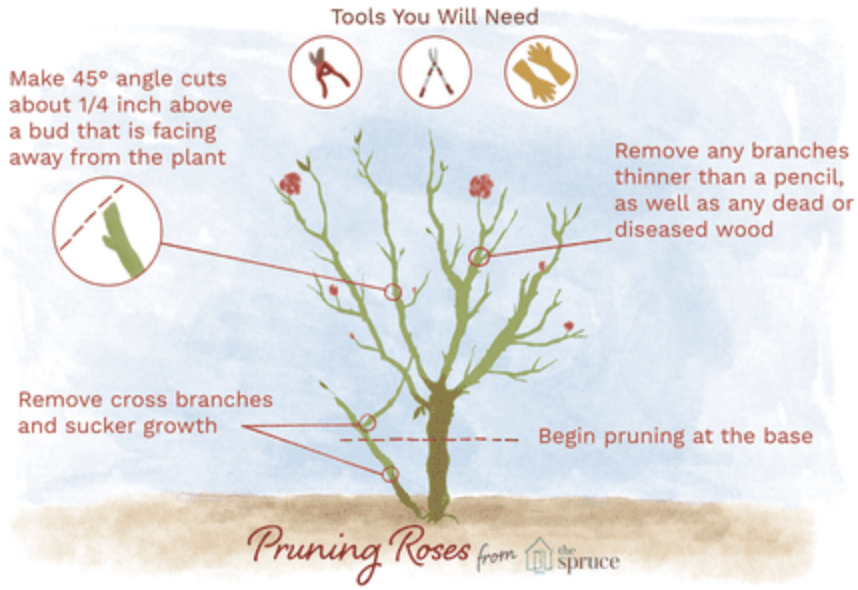
There are many reasons to enjoy growing roses in the Columbia Basin. Roses, frankly, do require a lot of attention, especially good pruning practices, to remain healthy and blooming. However, the dry and mostly moderate climate in the basin allows you to have beautiful roses for a very long time. Roses planted in the right place and correctly fertilized and watered are seldom bothered by mildew and black spot, the two most common fungi that plague roses. Modern roses that have at least 6 hours of direct sun and have well-drained soil with a high content of organic matter will give you wonderful blooms from May to late October. I've even had some blooms last until a killing frost in November.

After a rose is properly planted, apply a mulch layer at least 2 inches thick to help conserve water and keep down weeds. The mulch can be compost, bark, woodchips, straw, or leaves. Because we have almost rainless summers, it's important to see that the soil around the rose is consistently damp, but not soaking. In our sandy soils, it may take some experimenting to see what the right amount of water is. Generally, roses need one to two inches of water per week, but that may depend on the water holding capacity of your soil. Also, as the rose grows, it may take up more water, so one must pay attention.

Fertilizer

Roses like nutrient-rich soils, so fertilize at least twice a year. Assume that the roses will need feeding in spring when you're doing spring pruning and again after the first bloom, usually sometime in June. Use a fertilizer formulated for roses and apply half each time. Make sure to water the fertilizer in if it's dry or use a water-soluble product following the label.

Pruning Tips for all Roses



- During the first year, and every year thereafter, trim away old flowers as they fade to encourage more blooms (deadheading) and remove damaged and dead stems.
- After the first year, begin overall pruning in late winter or early spring, sometime after the last hard frost and when the buds begin to swell.
- Use sharp pruning shears, a long-handled lopping shear and a pruning saw for heavy old vine stems. By-pass pruners are recommended. Long leather gloves and long sleeves make rose pruning more comfortable.
- When removing dead, damaged, and weak stems, remove the stems 1-2 inches below the damage or die-back. Also cut out branches that cross or rub against one another.
- Check stems for discoloration. The stem should be white and plump. If it is brown and withered cut down further until you hit healthy wood.
- Old fashioned roses and climbers that bloom only once a year should be pruned right after flowering.
- Prune to make the shrub more open in the center to allow air circulation. Roses send out new growth from the bud just below a pruning cut. Cut about a ¼ inch above the bud and angle at the same angle as the bud. In fact, angle all cuts made on the shrub.
- The general rule for deadheading is to cut above the next five or seven leaf branches down the stem, but that may depend upon the strength of the stem and how you want to shape the rose.

Pruning Different Rose Types

Some roses have thin stems; prune those lightly. Stronger, thicker stemmed roses can be pruned vigorously depending upon how tall and wide you want the rose to grow. Learn as much as you can about the typical growth of your particular rose. There is much variety of growth even within the rose types. It is very helpful to watch a good video of rose pruning. Some of the best are from:

- University of Illinois https://extension.illinois.edu/roses/prune.cfm,
- Fine Gardening Magazine https://www.finegardening.com/article/how-to-prune-shrub-roses
- Jack Zimmerman's How to Prune Roses. https://goodgardeningvideos.org/videos/how-to-prune-roses-3/

Hybrid teas, Floribundas and Grandifloras

These are modern re-blooming roses. Prune in early spring. Take out more stems if you want larger blooms for cut flowers. There will be fewer blooms. The standard pruning is to cut out all but three to five of the most vigorous canes and prune the canes down to 15 to 18 inches high. I do not prune my roses like this. I prefer more rose blooms and leave 8 or more stems. I let the canes grow to a variety of heights, depending

on the rose. This is a matter of choice and how you want the shrub to look. For hybrid teas, any cane thinner than a pencil would be removed. Prune again in the fall to remove canes that have outgrown the shape you wish or that you intend to protect from winter cold and wind.

Shrub Roses

Shrub roses are my favorite rose type. They (and the floribundas, grandifloras, and ramblers) decorate the backbone fences of my garden. These shrubs are the hardiest, most drought and cold tolerant of roses. They are usually the first to bloom in the spring, and some of them continue to re-bloom all summer. I tend to prune all of them, including the ramblers, in the same way. I like the almost wild look that many of them have. I deadhead them all summer and allow them to get large. Lee Reich in *The Pruning Book* treats these and the old-fashioned roses in much the same way. He divides them into three classes:

Morden Blush. Photo by Barbara Guilland

- Class 1 roses bloom from old wood and are pruned lightly in the spring.
- Class 2 roses produce some rose from new wood but mostly from old. These may have new shoots from the ground each spring.
- Class 3 roses have many new shoots from the ground, and produce flowers on old and new stems and re-bloom all summer. They can be pruned low to the ground in the spring. The popular Knockout Roses are an example of these as are shrub roses from Morden nurseries in Canada.

Stay tuned for the next issue of Grounded: Growing Roses in the Columbia Basin: Part III. Insects, Diseases, and Winter Protection

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Master Gardeners Sow Seed of Success in Demo Gardens . . . *By Mark Amara*

WSU Master Gardeners provide a variety of community outreach activities to the people of Grant and Adams Counties. All of our certified gardeners serve as informal educators who provide resources on horticulture and gardening to rural and urban gardeners of every skill level and age. Our group holds plant clinics at farmers markets and county fairs, presents workshops to the public, civic organizations and schools, organizes an annual gardening symposium, and sets up and manages demonstration gardens. Some Master Gardeners write articles for a quarterly newsletter, newspapers, or other news media.

The Master Gardeners demonstration gardens are in Moses Lake, Ephrata, Soap Lake, and Othello, and they are all open to the public. Many of them have identifying signage and/or leaflets describing their contents.

Duane Pitts, Cynthia Calbick, Louis Logan, Kelly Hoyt, Barbara Guilland, and Mark Amara were involved in the early planning efforts in 2019.

- The demonstration garden in Moses Lake is next to the public library and consists of a native plant garden and a drought-tolerant garden in a cooperative effort with the City of Moses Lake. Likewise,
- The gardens in Othello are situated at the Old Hotel where there is a combination drought-tolerant and native plant garden.
- The Ephrata unit is at the Community Garden on C Street, where the Master Gardeners maintain a pollinator border.
- In Soap Lake, the Master Gardeners have partnered with the Soap Lake Garden Club and City of Soap Lake to establish and maintain the Healing Waters Garden on the edge of the community park.

Efforts began early in the year to assess conditions, plan work parties, clean up, and improve conditions at the Moses Lake Native Plant Garden and Drought-Tolerant Garden at the Moses Lake Public Library.

Barbara Guilland led the group effort. Photo by Duane Pitts

Annually, each garden is checked out to determine its needs. Maintenance is scheduled to keep the gardens looking good. Sometimes irrigation systems need to be repaired, plants replaced if they have not survived, pruning and thinning done, fertilizer applied, weeds removed. Weeding, pruning, replacing plants, and general cleanup are done periodically.

This spring at the Moses Lake drought-tolerant and native plant garden, Master Gardeners started the process of giving them their annual tune-up.

Tina Bradley and Duane Pitts scoop bark donated by Basin Bark Landscape Supply Company into wheel barrows. Photo by Mark Amara

WSU Master Gardener Barbara Guilland organized a crew of Master Gardeners, including Duane Pitts, Tina Bradley, and Mark Amara as well as volunteers Louis Logan and Charlie Maynard, to spread almost 3 cubic yards of bark donated by Dave Jones, Basin Bark Landscape Supply Company, for the gardens. Weeding continues and will be succeeded with a load of gravel for the drought-tolerant garden. For the bark spreading, Master Gardeners made short work of loading, dumping, and spreading this material uniformly over the beds to spruce them up. Volunteers are always needed to help perform these functions and the public is encouraged to contact the Master Gardeners to get involved.

Glenn Martin wields a rake in the Soap Lake garden. Photo by Mark Amara

At the Soap Lake Healing Waters Garden, WSU Master Gardeners, Glenn Martin and Mark Amara worked alongside members of the Soap Lake Garden Club members (including Jane Chambers, Sharon Davis, Stella Eastan, and Steven Yakish) in a cooperative spring cleanup effort of the demonstration garden in Soap Lake in April 2019. This work consisted of pruning, weeding, cutting back last year's dried growth, clipping grasses, raking leaves, and picking up garbage. The grounds now look clean and neat, and the plants appear to be thriving. Plans are to update plant signage and replant as necessary.

The Mighty Mason Bee . . . *by Duane Pitts*

1. Pollinator Power!

The mason bee (Osmia lignaria) is one of the first pollinators to emerge in spring. These bees pollinate apples, pears, cherries, blueberries, raspberries and other early spring pollen-laden flowers, and ornamentals. Also called orchard bees or blue orchard bees, these metallic blue-green bees are smaller than a bumble bee and honeybee, but they are excellent at pollinating orchards – 250 mason bees do the same work per acre as 30,000 to 40,000 honeybees! Keep in mind, 33% of our diet depends on bee pollination. Seventy-five percent of all agricultural crops rely on bees. And, mason bees are the most industrious.

Mason bees "belly flop" on flowers, collecting a bit less pollen than they scatter, which is terrific for pollinating orchards. Unlike honeybees, mason bees have a range of about 300 feet from their nest. Your neighbors will enjoy the benefits of your nest near their property!

Osmia lignaria, F, Back, Washington, DC 2013-11-13-10.49.51 ZS PMax (12330738884).jpg https://commons.wikimedia.org/wiki/Category:Osmia_lignaria

2. Vita Brevis

We think we have short lives! Try being a mason bee: 2 weeks for males and up to 8 weeks for females. Usually when spring temperatures reach a steady 55 degrees, male mason bees emerge first. They fill up on nectar, wait for the females to come out of their cocoons, mate quickly, then die.

The female, however, has all the hard work. She visits flowers for pollen and nectar, brushes the pollen off her furry belly into a ball of yellow powder the size of a pea, which represents about 1,800 flower visits! It is enough to feed one of her offspring for a year in the nest. She gathers pollen every day, lays an egg, builds a mud wall. Each 6-inch tunnel can hold up to 7 eggs. She seals each tunnel of eggs with a rough plug of mud. No time to smooth it even – her clock is ticking! 30 days, 30 eggs. Then she dies.

Mason bee (Osmia lignaria) (26134020756).jpg https://commons.wikimedia.org/wiki/Category:Osmia_lignaria https://commons.wikimedia.org/wiki/Category:Osmia_lignaria

Blue orchard bee https://commons.wikimedia.org/wiki/Category:Osmia_lignaria

3. Life Cycle

While other bees are pollinating, mason bees are out of sight until the following spring. Inside the tunnels, the eggs become larvae, eating the pollen left for them, and then they spin a cocoon, pupate into fully-formed adults, and sleep until spring. Once spring temperatures reach 55 F, the males chew through their cocoons. Females are usually found in the inner cells of the tunnel. It may take mason bees 1 or 2 weeks to emerge from their cells during cool weather.

And the life cycle begins anew for another year.

3. Bee Home

If you want a quick, easy home for mason bees, attach a tubular nest holding about 55 cardboard tubes about 6 - 8 feet above the ground; each nest will house 6-7 compartmented cells with an egg and pollen-nectar pea. Face the nest opening east or south, in a dry, sheltered spot out of rain and snow. This home may also attract other bees (leaf cutter, Osmia montana and Osmia californica). They all find the 5/16-inch tube opening inviting. Mites do not like the cardboard tubes, so mason bees in such tubes have fewer parasitic mites and diseases. Mason bees do not produce honey and don't chase and sting (unless aggravated!).

https://www.buzzaboutbees.net/mason-bees.html

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Orchard Mason Bees. WSU Extension King Co. Hort Fact Sheet #83. https://s3.wp.wsu.edu/uploads/sites/2053/2017/01/Orchard-Mason-Bees1.pdf

Master Gardener Plant Clinics

WSU Master Gardener volunteers are available to address home gardening questions all year long. You may contact a WSU Master Gardener volunteer by calling or bringing your questions or samples to the WSU Grant Extension Office at 1525 E. Wheeler Road, Moses Lake, Monday-Thursday, 8 a.m.-5 p.m., (509) 754-2011, Ext 4313, or by sending questions to the following website: ga.mgvolunteers@wsu.edu. Messages sent or called in or samples brought in will be answered by the Master Gardener volunteers in a timely manner. For face-to-face contact, or if you have a plant or insect sample that you would like to have identified, please see the Master Gardener volunteers at one of the following locations:

- **Othello Ace Hardware:** 420 E. Main Street, last Saturday of each month, May through September, 9 AM - Noon
- **Moses Lake Farmers Market:** McCosh Park – Dogwood St. side, Saturdays, May through October 8 AM – 1 PM
- **Quincy Farmers Market:** Lauzier Park, 1600 13th Avenue SW,1st and 3rd Saturdays, June through September, 8 AM – 1 PM

For help with diagnosis and identification, plant and insect samples can be dropped off at the Extension Office Monday through Thursday, 1525 E. Wheeler Road, Moses Lake, from 8 AM – 5 PM