

Gardening Matters



Yates County Master Gardener Newsletter

Winter 2022, Issue 4



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Executive Director's Note

There are two essential epochs in any enterprise—to begin, and to get done.

- Liberty Hyde Bailey

As we ended our “enterprise”, the gardening season of 2021, we can reflect on what we accomplished and how we did it. This has been a second year of COVID we have gone through, but this has highlighted the importance of growing one’s own food. So many people have moved away from these skills, that our provision of gardening kits provided an opportunity for many to *come back to the earth*.

I finished the season composted my maple, beech and tulip tree leaves in my garden beds. I planted my daffodils, crocuses, tulips and a few other bulbs from the Master Gardener Bulb sale. I planted garlic bulbs and thinned strawberry plants. Happy I got those done!



As we continue to see changes in weather and temperature, this winter will provide opportunities to read and research on how to grow in our changing world. I have several observations on mixed success of planting earlier (with row coverings). My raspberry plants were fruitful, but I had to compete with the carpenter ants. (A topic to begin some new research.) I also may strategize how to protect plants and seeds from extreme rain events with some type of covering—who knows? I may also try some plantings in pots and endeavor some more southern zone plantings of callaloo (Caribbean greens) okra, cantaloupe and sugar baby watermelons. There is always something to begin.

While I miss the gardening season, I stop by the empty garden beds, and dream of what may be in the coming year. This is an essential part of any enterprise.

Thank you, Liberty Hyde Bailey!

Arlene A. Wilson

**Executive Director & Master Gardener
Cornell Cooperative Extension of Yates County**

CCE-Yates County has daily office coverage, with 50% working in-person, and 50% working remotely. This includes work within the community (agriculture, gardening, natural resources, youth, and families) using social distancing protocols.

Should you need to reach any of our staff members, visit <http://yates.cce.cornell.edu/staff>. You can also send us a message via our Facebook page, or call the office at 315-536-5123.

Please bring a mask with you to wear through the Yates County Building when you come to the CCE-Yates County Office.

Garden Chat:

Catching up w/ the Yates County Master Gardeners!



What is your favorite tool in the garden?

Karen

Forgecraft USA 3 Prong Cultivator with Fiberglass Handle Adze Hoe with Fork, Dual Headed Weeding Tool. I use this all the time!



Arlene

My favorite tools are:

1. **My earbuds**—hands free gardening and some specialized learning [via podcasts] or classic tunes make the hours fly by.
2. **My sunhat**- a giant straw hat with a large brim, that provides a two-foot perimeter of shade around me.
3. **Garden Hose**-- This is the culmination activity of a full gardening event. The watering of my flowers or veggie late in the day/early evening provide a cleansing to the newly moved soil. Sunny days result in mini rainbows and a fine mist that sometimes blows back on me—feeling blessed!



Jan

My most relied upon garden tool for me is Mother Nature herself. She guides my chores; planting, weeding, deadheading, trimming, pruning, the list goes on. When I pay attention things work out pretty well, when I don't and things go awry, she shakes her head and gives me a definite "I told you so". It's important to pay attention to the subtleties of seasonal changes, weather and temperature conditions, light and shade. When the gardener and Mother Nature sing the same tune it's beautiful music. Oh, and I love my clippers, too.



Susan

My favorite tool...the list is quite long, but I will say the a lightweight, yet sturdy D handle shovel is my best friend. It not only takes out the whole weed, but can divide the most stubborn perennials with a minimum of cussing. I use it to edge and yes, there is a slight scallop, but that is barely noticeable when the grass comes roaring back. It also works well when your favorite plant has finally decided to go the great garden in the sky. My second favorite tool is a backhoe for when the dead plant has a root system that travels to the Earth's core.



Michelle

My Favorite tool in the garden is my Felco Hand Pruners. I have a holster on my belt with the clippers at easy access. I use these clippers every time I go into the garden. There is always a need to deadhead, trim, cut flowers, cut vegetables off vine or cut off dead branches or foliage. They are easy to sharpen with a sharpening stone. I have had the same clippers for 15 years.



Lindsey

The loop hoe. The simplest tool that efficiently takes care of weeds, can fit into tighter spaces, doesn't weigh too much, is useful even for a few minutes of work and saves my back and knees (at least a bit, anyway).



What to do in...

January:

- * For an early season burst of color, trim branches of forsythia quince and other early spring blooming shrubs and bring them inside your house. Put them in vase, give them a little water and within a short time they'll be blooming.
- * If you haven't ordered your vegetable seeds yet, this is the time to do so! Look back at your records from last season to see what you liked and what you would like to do differently this year.
- * Check on your stored summer bulbs such as gladiolas and dahlias. Remove any rotten or shriveled bulbs.
- * Thinking of adding fruit trees to your garden? This is an ideal time to research and order bare root trees for spring planting. Bare root trees are much less expensive than potted fruit trees, are easier to plant and establish more quickly. Order early for the best selection!



February

- * Many annual flowers can be started from seed in February.
- * Nothing gets us more excited about working in the garden again than a new project. Research a topic that has caught your fancy and begin planning! Some quick ideas— a pollinator garden, native plant corner or a hardy carnivorous plant bog. As always, feel free to call the Yates County MGs if you need help translating your dreams to the reality of your yard.
- * Get organized for your 2022 vegetable garden- scan images of seed packets so you'll have an easy record of what you planted and draw out a garden planting map to keep you on track.
- * Scout your houseplants for scale and aphid infestations. This is a great time to deal with any lingering issues before your plants begin putting on their spring flush of growth in March.



March:

- * Start your onions and leeks now for spring planting.
- * Sit on your hands and don't start your tomatoes or peppers yet- we promise, they will do much better started in April, even mid to late April than they will started too early.
- * This is generally the last call to prune your fruit trees. Try and finish pruning before budbreak.
- * March is a good time to begin pruning your shrub, floribunda and tea roses.
- * Begin fertilizing your houseplants as the days lengthen and they start to put on fresh growth. Increase watering as needed.



Want to be featured in *Gardening Matters*?

If you have any seasonal tips or photos you would like to share, please submit them to:

Master Gardeners/CCE Yates County
417 Liberty Street, Suite 1024
Penn Yan NY 14527

Yates County Master Gardeners Year-In-Review

Cheryl Flynn (Master Gardener Volunteer Coordinator)

- * The Master Gardeners took part in the annual Cornell Vegetable Variety Trials which are grown at the Penn Yan Community Garden, where we evaluate seed varieties for their attributes in our county. The data collected is then compiled with other counties on a statewide website which gardeners can use to evaluate how a variety will do in their own growing regions. In addition to the produce harvested from the trials, the Master Gardeners grew, harvested and donated over **600 lbs.** of fresh vegetables and herbs to the Hope Food Pantry
- * We held our plant sale at Abandon Brewery featuring Native Plants for Pollinators, selling over **400** native perennials.
- * The Master Gardeners participated in the CCE Yates County distribution of **400** container garden kits within Yates County since March of 2021, thanks to the generosity of the Elks Club and an Ag and Markets multi-county grant. These kits contained pots, soil and seeds along with complete growing instructions' and follow-up support as needed we also held an on-line bulb sale this fall, selling many varieties of spring bulbs.
- * Gardening Matters Day (formally known as Yard N' Garden Day) which was held on a cold blustery day at Abandon Brewery. The Master Gardener volunteers presented on various topics from container gardening to installing drip irrigation in a home-garden setting.
- * We took part in the Seed to Supper program, which is a beginning gardening course to provide gardeners at any level of experience or budget. Utilizing a mini grant we received for the program in 2019, we provided the free 5-week course in Penn Yan. In addition to instruction, we provided participants with seeds, transplants and a manual which covered all subject matter discussed in the course for future reference. We hope to offer this program annually in different parts of the county.



Pictured (Left to Right):

- Donations being dropped off at the Hope Center
- Penn Yan Community Garden Harvest
- 2021 Native Plant Sale
- Container Garden Kits
- "Gardening Matters" Day
- "Seed to Supper" program

Special thank you to our Master Gardener volunteers, Caroline Boutard-Hunt, (Agricultural/Horticultural Educator) and Arlene Wilson (CCE-Yates executive director) for their passion of gardening and support that made all of these events possible.

Have a gardening question?

Contact us at 315-536-5123, or stop by the CCE-Yates County office and fill out one of our Master Gardener questionnaires!

Indoor Winter Herb Gardening

(Beverly Barnwell)

If you are like me, the wind and cold weather of the mid-autumn season sets in and makes me feel a bit sad for the fresh produce I can no longer get from my garden plots. I also long for the fresh herbs I could cut for whatever I was also making any particular evening. I would on occasion grab fresh from the local grocery store. Over the autumn and winter, it was expensive, and they just did not last all that long even when using well-known hacks, such as the damp paper towel in the baggie with each herb trick.



A few years ago, I began the journey of a mini, indoor herb garden. Just four plants of my favorite herbs. I have a sunny, south-facing window with a bookcase to place them. The first year I did the easy ones (at least that is what I read online). One each of parsley, thyme, sage and, and rosemary. I tended them like my summer tomatoes by checking them daily, making sure to spritz the foliage every few days to keep the mites away. It was a success! I didn't kill any of them by the time spring planting time rolled back around.

The following year, I added basil into the mix. Now, this herb is tender and can be temperamental to grow inside especially in the winter months. It likes to be warm and likes six to nine hours of sunlight. Our winter sun is usually not so strong, so I went with Plan B – a warming seedling germination mat and grow lights. This worked for me, and the light and mat are both large enough to hold most of the herbs.

I love the smell of the rosemary any time of year, but especially in the winter. So, if you start your indoor herb garden for winter start small and I wish you good luck!



Pictured: 360 Grow Lights for indoor plants
Source: <https://amzn.to/3ETbwVg>



Pictured: Waterproof Seedling Heat Mat
Source: <https://amzn.to/3qIFLcH>

Pruning Flowering Shrubs- A Quick Guide

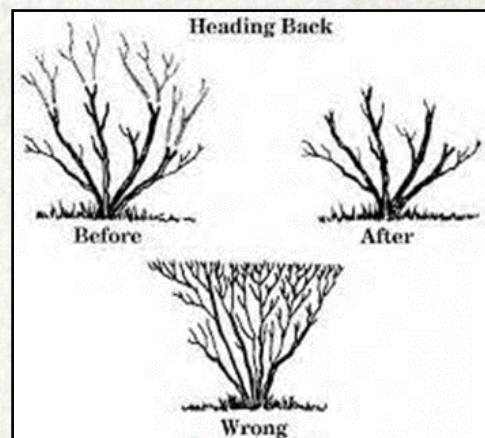
Caroline Boutard-Hunt (Agricultural and Horticulture Educator)

One of the most frequent queries I receive in the office is when and how to prune deciduous shrubs. There are four basic pruning methods that home gardeners should be familiar with: heading back, rejuvenation, renewal (thinning) and shearing. Each of these techniques should be used to accomplish a different goal and each should be used at a specific time of year for the best results.

No matter which pruning method you are using, dead, diseased, or damaged wood should be removed annually. The following pruning technique definitions were adapted from the Morton Arboretum website.

Heading back

Heading back is used to control the size of the shrub or to remove a branch that is out of balance with the rest of the plant. It requires that a branch be removed to a good bud or lateral branch instead of being cut to the ground. Heading back is best done when new growth is complete. If you head back while the plant is still actively growing it can stimulate excess growth and branching.



Source: University of Arkansas Extension

Rejuvenation

Some old, neglected or overgrown shrubs can be restored to a manageable size and vigorous growth by pruning all the stems or canes to ground level. Rejuvenation pruning is best done in late winter or early spring. Rejuvenation pruning is best done every 3-5 years though some extremely vigorous shrubs respond well to annual rejuvenation. See the Morton Arboretum Pruning Deciduous Shrubs guide (included, pages 8-10) for more information on which species respond well to rejuvenation pruning.

Renewal

Renewal, sometimes also called thinning focuses on the removal of old, overgrown stems or canes. Removing the oldest stems and canes invigorates the shrub and can result in better flowering. This is a multi-year pruning strategy where approximately 1/3 of the plant is removed each year, focusing on the oldest stems. While pruning, step back and observe the form of your shrub. Branches that are rubbing or crossing should also be removed. Renewal pruning is best done during the dormant season.



This overgrown forsythia is an ideal candidate for some rejuvenation pruning
Source: Penn Live

Shearing

Shrubs should only be sheared when a formal hedge is desired. Shearing stimulates shrubs to produce dense shrubby growth at the tips of their branches. Although this can look lush at first, over time shrubs will develop bare and dead spots in center and lower areas of growth. Generally, unless you are really set on a formal look, you will have better long-term success with annual renewal pruning or heading back of deciduous shrubs to control size and manage form. When shearing, it is important to keep the top of the hedge narrower than the base to allow sunlight to reach the lower branches. The best time to shear is when new growth is complete.

References:

- <https://lancaster.unl.edu/hort/factsheets/329prshr.shtml>
- <https://piedmontmastergardeners.org/article/a-pruning-primer-tools-techniques-and-timing/>
- <https://hort.extension.wisc.edu/articles/pruning-deciduous-shrubs/>
- <https://mortonarb.org/plant-and-protect/tree-plant-care/plant-care-resources/pruning-deciduous-shrubs/>



Pictured: Renewal pruning of a suckering shrub
Source: Wisconsin Horticulture Division of Extension

Pruning Deciduous Shrubs

The Morton Arboretum

Common Name	Scientific Name	Method & When To Prune
Almond, flowering	<i>Prunus glandulosa</i>	prune after flowering (renewal or heading-back); flowers on old wood
Allspice, Carolina	<i>Calycanthus floridus</i>	prune after flowering or in early spring (renewal or heading-back); flowers mostly on old wood, but can also flower on new wood
Barberry, Japanese	<i>Berberis thunbergii</i>	prune in late winter/early spring (shear, thin, or rejuvenate); flowers on old wood. Considered invasive, planting is discouraged.
Bayberry	<i>Myrica pensylvanica</i>	prune in late winter/early spring (renewal or heading-back annually or rejuvenate when needed); flowers on old wood
Beautybush	<i>Kolkwitzia amabilis</i>	prune after flowering (renewal or heading-back annually or rejuvenate when needed); flowers on old wood
Bluebeard, Blue spirea	<i>Caryopteris x clandonensis</i>	rejuvenate annually in late winter/early spring; top dies back to ground in harsh winters; flowers on new wood
Butterfly bush	<i>Buddleia</i> species	rejuvenate annually in late winter/early spring; flowers on new wood
Cherry, purple sand	<i>Prunus x cistena</i>	prune after flowering (heading-back); flowers on old wood
Chokeberry	<i>Aronia</i> species	prune after flowering (renewal or heading-back); flowers on old wood
Cinquefoil	<i>Potentilla</i> species	prune in late winter/early spring (renewal); flowers on new wood
Cotoneaster	<i>Cotoneaster</i> species	Prune after flowering (heading-back or renewal); flowers on old wood
Currant, alpine	<i>Ribes alpinum</i>	prune in late spring after new growth matures; rejuvenate in early spring when needed; flowers on old wood
Deutzia	<i>Deutzia gracilis</i>	prune after flowering (heading-back and renewal); rejuvenate when needed; flowers on old wood
Dogwood, gray	<i>Cornus racemosa</i>	Prune late winter/early fall (heading back or renewal); flowers on old wood
Dogwood, red-osier	<i>Cornus sericea</i>	prune late winter/early spring to stimulate new, colorful stems (renewal); can rejuvenate; flowers on old wood

Euonymus, burning bush	<i>Euonymus alatus</i>	prune in late winter/early spring (renewal or heading-back); flowers on old wood. Considered invasive, planting is discouraged.
Euonymus, wintercreeper	<i>Euonymus fortunei</i>	prune anytime between February and mid-summer (heading back); flowers on old wood
Forsythia	<i>Forsythia x intermedia</i>	prune in late spring after flowers (renewal and heading-back); rejuvenate when needed; flowers on old wood
Fothergilla	<i>Fothergilla gardenii</i>	prune in late spring after flowers (heading-back); flowers on old wood
Fringetree	<i>Chionanthus virginicus</i>	as a shrub remove unwanted stems; as a tree prune in early spring (heading-back); flowers on old wood
Honeysuckle	<i>Lonicera</i> species	all honeysuckles respond well to all types of pruning in early spring or after flowers
Hydrangea, bigleaf	<i>Hydrangea macrophylla</i>	prune after bloom (heading-back); flowers on last year's wood, although some new cultivars also bloom on new wood;
Hydrangea, oakleaf	<i>Hydrangea quercifolia</i>	prune after flowering (heading-back); flowers on old wood; minimal pruning required
Hydrangea, paniced	<i>Hydrangea paniculata</i>	prune in late winter/early spring (heading-back); flowers on new wood
Hydrangea, wild	<i>Hydrangea arborescens</i>	Prune severely in late winter/early spring; cut back last year's stems to within 2 buds of the ground just after growth begins; flowers on new wood
Kerria, Japanese	<i>Kerria japonica</i>	Renewal prune older stems to ground after flowering; flowers mostly on old wood, but can also flower on new growth
Lilac, common	<i>Syringa vulgaris</i>	prune after flowering (renewal); rejuvenate old shrubs in late winter/early spring as needed; flowers on old wood
Lilac, Persian	<i>Syringa x persica</i>	prune after flowering (renewal); flowers on old wood
Mockorange	<i>Philadelphus</i> species	prune after flowering; rejuvenate in late winter/early spring; flowers on old wood
Privet	<i>Ligustrum</i> species	prune from late winter through summer; can be sheared; flowers on old wood (considered invasive, planting is discouraged)
Quince, flowering	<i>Chaenomeles</i> species	prune after flowering (renewal or heading-back); rejuvenation prune in early spring; flowers on old wood

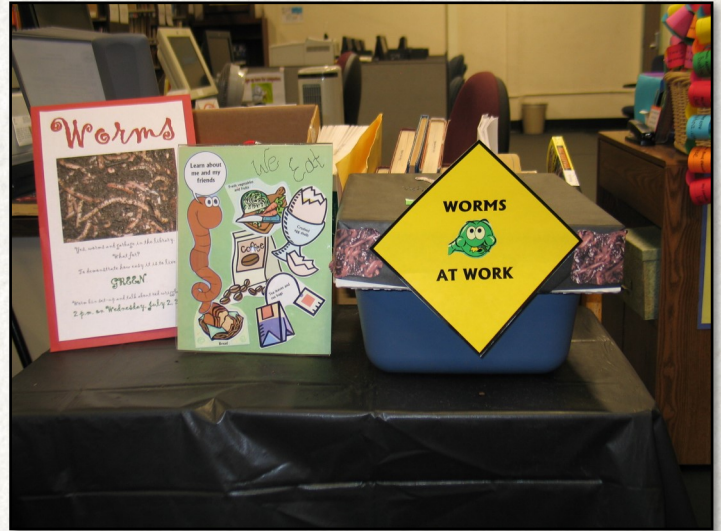
Rhododendron, azalea	<i>Rhododendron</i> species	little pruning is needed; renewal prune when dormant
Rose	<i>Rosa</i> species	climbers and ramblers: bloom in early summer on old wood, prune after flowering, leave new growth for next year hybrid bush-type: flowers on new wood; remove dead canes and cut back in spring; shrub roses: prune out old, diseased, or unwanted canes in spring, head-back after flowering
Rose-of-Sharon	<i>Hibiscus syriacus</i>	Prune in late winter/early spring (renewal or heading back); flowers on new wood
Snow berry	<i>Symphoricarpos</i> species	prune in late winter/early spring (renewal); rejuvenate older plants as needed; flowers on new wood
Spirea, spring flowering	<i>Spiraea prunifolia</i> , <i>S. vanhouttei</i>	prune after flowering (renewal); flowers on old wood; over-grown plants may be rejuvenated
Spirea, summer flowering	<i>Spiraea x bumalda</i> <i>Spiraea japonica</i>	prune in late winter/early spring before they leaf out; flowers in summer on new wood; rejuvenate as needed in early spring
Viburnum	<i>Viburnum</i> species	prune after flowering (renewal or heading-back); flowers on old wood
Winterberry	<i>Ilex verticillata</i>	prune in late winter/early spring (heading back); flowers on new wood
Weigela	<i>Weigela</i> hybrids	prune after flowering (renewal heading-back); can be rejuvenated; flowers on old wood
Witch hazel, Common	<i>Hamamelis virginiana</i>	prune in early spring (renewal or heading-back); flowers on new wood; can be rejuvenated
Witch hazel, Vernal	<i>Hamamelis vernalis</i>	prune after flowering (renewal or heading-back); flowers on old wood; can be rejuvenated



Vermicomposting 101

Karen Welch (Master Gardener Volunteer)

Worm composting, also known as vermicomposting, is a simple and easy way to reduce your kitchen waste and some of your scrap paper and cardboard into valuable, nutrient rich compost. Here in the Northeast it is a great way to compost these items in the colder months. It is also a great way for children to learn about composting and get involved in the process. What child isn't interested in worms! The worms will eat the food you provide and as it passes through the worm's body it exits as nutrients that plants love. The worm compost is a mixture of worm castings (their poop), decomposing organic matter, and microorganisms. Worms in a small bin can produce up to 4 pounds of castings in 1 month just from kitchen waste! The paper and/or cardboard you provide are their "bedding". Worms need a dark environment, moisture, and of course food! They do best in a temperature between 50 to 80 degrees. They like to be warm, but not too warm. You can purchase a worm bin or make your own using the directions below.



Supplies to get you started

- * You need 2 plastic bins. The shorter, bottom one does not need a top, and only needs to be deep enough to collect any of the "worm tea" that leaches out of your worm bin. The taller bin that fits on this should be about 2 feet by 2 feet by 8-12 inches. It will need a top.
- * About 1 pound of red wiggler worms (AKA eisenia foetida). Can be ordered online.
- * Light-weight non-metal screening to cover air holes
- * Water-proof glue to glue screen onto bins
- * Shredded black and white newspaper, peat moss or decaying leaves or a combination of these
- * Water
- * 1 pound of dirt

Preparing the bins

Drill a 1 inch hole about 2 inches from the top of the taller bin on opposite sides. Then drill about 6 holes that are 1/8 inch wide on the bottom of this bin. Cover all holes with the screening material. Place the taller bin inside the shorter one. Let the glue dry well before proceeding further. The holes at the top of the bin allow air for the worms to breathe and the holes near the bottom allow excess liquid to drain out of the box so the worms do not drown. This liquid is worm pee and also is full of nutrients for plants.



Preparing the paper, soil, water and adding the worms

Add enough shredded paper to the taller bin to be about 3 inches deep and have some extra on hand to add a little more once a week. Avoid heavy, shiny or colored paper. Add soil and just enough water to dampen all. The mixture should be moist, but not so moist that it forms puddles. Add the worms and let them adjust for a day before feeding. If you leave the lid off for a few hours, they will go to the bottom to avoid the light.

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Vermicomposting 101

Karen Welch (Master Gardener Volunteer)

Feeding the worms

Worms will break down food faster if it is in small pieces. Add the food to one area of the bin each time and not all over. Cover the food scraps with the dirt and moist paper. If you notice the worms aren't eating a certain food, remove it. It may be that they don't like it or it is too big and needs cut up more. Add fruit and vegetable scraps but avoid citrus fruits, garlic, onions and broccoli. Citrus fruits make the compost too acidic and strong -smelling vegetables can make the compost smell bad.

You can also add eggshells (crunch them up so they are small), tea leaves and tea bags, coffee grinds and filters, feathers, and human or cat or dog hair. Do not put meat, fats, grease, bones, oils, plastics, milk, or dairy products, cat or dog feces or any diseased plants into the bin.

Keep the bin as moist as a damp sponge. Always keep some shredded paper or sawdust on hand to cover over the top of the pile to discourage smells and bugs. Move the material around in the bin once a week to help aerate it.

Maintaining the bin

Once every 1-2 months scoop the liquid out of the lower container. This liquid, which is really worm pee, can be used as fertilizer outside near plants or watered down to use on indoor plants.

Your worm bin is full when the compost reaches the bottom of your top holes you drilled. When this occurs:

- * Feed your worms on one side only for a few weeks to draw them over to one side
- * Harvest the compost on the side opposite to where you are feeding the worms.

Other tips

- * Keep a ratio of 70 % brown matter (paper, sawdust, dried and dead plants) to 30% green matter (food scraps or young green plants).
- * You can reduce the chances of fruit flies by freezing scraps for 24 hours before adding them and covering over food scraps with your brown matter.
- * Make sure the worms have air! Once a week or so, move the compost around to aerate it.



Growing in Glass– Aquatic Gardening

Caroline Boutard-Hunt

One of the things I miss the most in winter is time puttering in my garden and the comfortable rhythms of garden maintenance. I've tried to channel my energy into caring for my houseplants. However, as much as I enjoy them, they don't require much beyond occasional watering and fertilization. This past winter, thanks to my children clamoring for a fish tank, I discovered a new way to bring the challenge and joy of landscape gardening inside. It provides a dynamic living focal point within your space

Growing an aquatic garden is a fantastic way to engage in gardening year-round, with enough differences to excite and challenge gardeners at all levels. Unlike houseplants or even a terrarium, an aquatic garden requires planning, regular maintenance and trouble-shooting while providing you with a vibrant tapestry of color and life to enjoy.

Planted aquariums have been part of the hobby ever since people have kept fish in glass tanks. Indeed, prior to the 1950's and the advent of mechanical filtration, the only way you could keep aquarium fish alive was with plants. In the 1970's Takashi Amano revolutionized plant keeping and began what is now referred to as aquascaping.

Aquascaping combined plants with meticulous hardscape design to create true multi-dimensional gardens. In the past decade, aquascapers such as George Farmer and others have continued to popularize aquascaping and the hobby has diversified greatly to encompass many new styles.

The goal of this article is to give you an introduction to some of the more popular forms of aquatic gardening and to share examples of each style. If you are interested in building an aquatic garden, we'll provide more resources on where to find the technical information.

Nature-Style Aquarium

This style, first developed and popularized by Takashi Amano combines strong hardscape, most often wood-based with plants. The goal of a nature aquarium is not to duplicate nature in the same way that an ornamental garden bed is not an exact replica of nature. Much like a perennial border, a nature aquarium involves combining plants and hardscape elements to create a balanced vignette with a sense of perspective. Nature-style aquariums are one of the most popular designs in aquascaping today. Depending on your plant choices, these can be very simple to maintain.



Pictured: Takashi Amano home aquarium from 2007, from the Aqua Design Amano (ADA) website

Jungle-Style

The name says it all. Jungle style aquariums are lush, full of plants and require minimal trimming. Jungle-style aquariums are an offshoot of the nature style discussed earlier. These are one of the easiest styles for a beginner to start with as there aren't strict rules about layout or plant choice.

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Growing in Glass– Aquatic Gardening



Diorama-style

These are designed to replicate fantasy scenes such as forests and other natural scenes. Scale plays a large role as well as hardscape design. There are some innovative design ideas being pioneered with these aquascapes including replicating waterfalls out of sand or using mirrors to act as reflecting ponds. Some find these to be a little contrived but many enjoy the challenge of recreating everything from a mountain stream to a forest underwater.

Pictured (Left): Diorama-style, 41L Aquatic Garden, The Remote Planet, Origae-6, Narongrit Dantragoon, Muang Thailand, 10th Place 2018 AGA International Aquascaping Contest

Dutch-Style

Dutch-style aquariums were first developed in the 1930's and are considered the oldest style of aquascaping. As with many traditional styles, there are quite a few rules associated with them which makes them difficult for all but the most disciplined of aquascapers. The focus is on the plants as well as the individual form of each plant. Each group of plants must be trimmed so that the stems are even. There needs to be clear delineation between each group of plants. The number of species per tank should be limited as well to avoid a cluttered look. Nobody can deny their striking appearance, although this is a style many enjoy in someone else's collection.

Pictured (Right): Dutch-style Aquascape, 284L, Upstream Color, Joe Harvey, Athens Georgia, United States, 2018 AGA competition Third Place



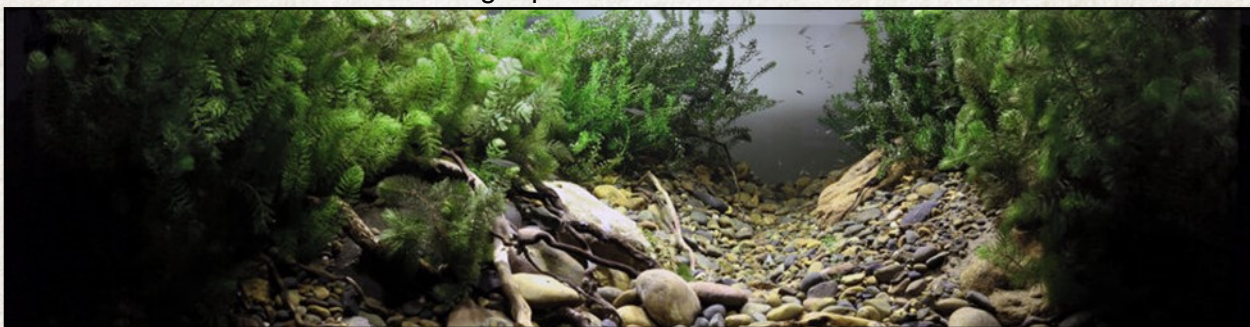
Iwagumi

Iwagumi are rock formation focused, minimalistic aquascapes. Generally the plants are limited to one or two species to keep the focus on the shape of the stones in the aquarium. As the stones are the focus, their placement is of utmost importance. The *Oyaishi*, or main-stone is the anchoring piece of the layout. The *Oyaishi* is balanced out by the *Fukuishi* or secondary stone and supported by smaller *Soeishi* stones which should reference the *Oyaishi*. Finally the smallest stones, *Suteishi*, are added for fine details and to add a naturalistic touch. When done right, the end results can be stunning and create a restful and harmonious scene.

Pictured: 112L Iwagumi-style, AquaYama, Matteo Capuzzo, Padova Italy, 2020 AGA Aquascaping Contest

Biotope

The goal of a biotope aquarium is to recreate a snapshot of nature. Biotope aquariums can be exact recreations of a location, down to stone and substrate collected from site. They can also be your own design based on the native plants and natural elements found in a specific area. Many biotope aquariums are limited in the number of plants used to best mimic the natural environment being replicated.



Pictured: 750L Biotope Aquascape "A shallow section of the coastal zone of the Abakan canal of the Yenisei River in the city of Krasnoyarsk. Krasnoyarsk region. Russia" by Lobanov Sergey, 2019 AGA competition

Growing in Glass– Aquatic Gardening

Botanical/Blackwater Aquariums

The funkiest of the bunch! These tanks are a subcategory of biotope aquariums and are definitely an acquired taste (and one which I've definitely acquired). Botanical aquariums work with high levels of botanical inputs such as oak leaves and alder cones to create a habitat that encourages breeding and natural behavior in many fish species such as wild bettas, cardinal tetras and Apistogramma. One of the benefits of a botanical aquarium is that many fish display fascinating behavior when provided with a more nature-based aquarium environment. These are a subset of biotope aquariums with the main items of interest being the fish, hardscape and botanicals. Depending on the habitat being replicated, the tanks may be planted or consist solely of hardscape and botanicals.



Pictured: Botanical style tank, Scott Fellman, Tannin Aquatics

Aquatic gardening is only limited by the glass box that contains them. You can start out with a simple tank then build up to a more complicated style or experiment with multiple tanks. Currently I have a 29-gallon nature-style aquarium which I inject CO₂ into to increase plant growth and fertilize daily. I also have a 10-gallon botanical-style aquarium which requires nearly no maintenance beyond a 1-gallon water change once a week. Both bring me a great deal of joy and a beautiful garden to focus on year round.

Hopefully there are those of you who want to create your own aquatic garden. I've included a list of resources below to help you learn more or start creating a fantastic underwater scape.

Resources

Aquascaping websites:

- www.UKAPS.org- The UK Aquatic Plant Society is a wonderful forum with aquascapers from all over the world sharing advice and inspiration.
- <https://www.2hraquarist.com/>- This is a commercial site but has a lot of useful information, especially when it comes to problem solving in your tank.
- <https://www.aquatic-gardeners.org/>- the website of the Aquatic Gardeners Association.



Pictured: The author's 29-gallon nature-style aquarium

Aquascaping books:

- Aquascaping- A Step by Step Guide to Planting, Styling and Maintaining Beautiful Aquariums by George Farmer
- Ecology of the Planted Tank by Diana Walstad
- Nature Aquarium World by Takashi Amano
- Aquarium Designs Inspired by Nature by Peter Hiscock

Podcasts:

- The George Farmer Podcast- George Farmer covers every aspect of designing and maintaining a beautiful planted aquarium.
- Watercolors Aquarium Gallery Podcast- Somewhat more fish focused but with some great plant content as well.

Local Sources of Supplies:

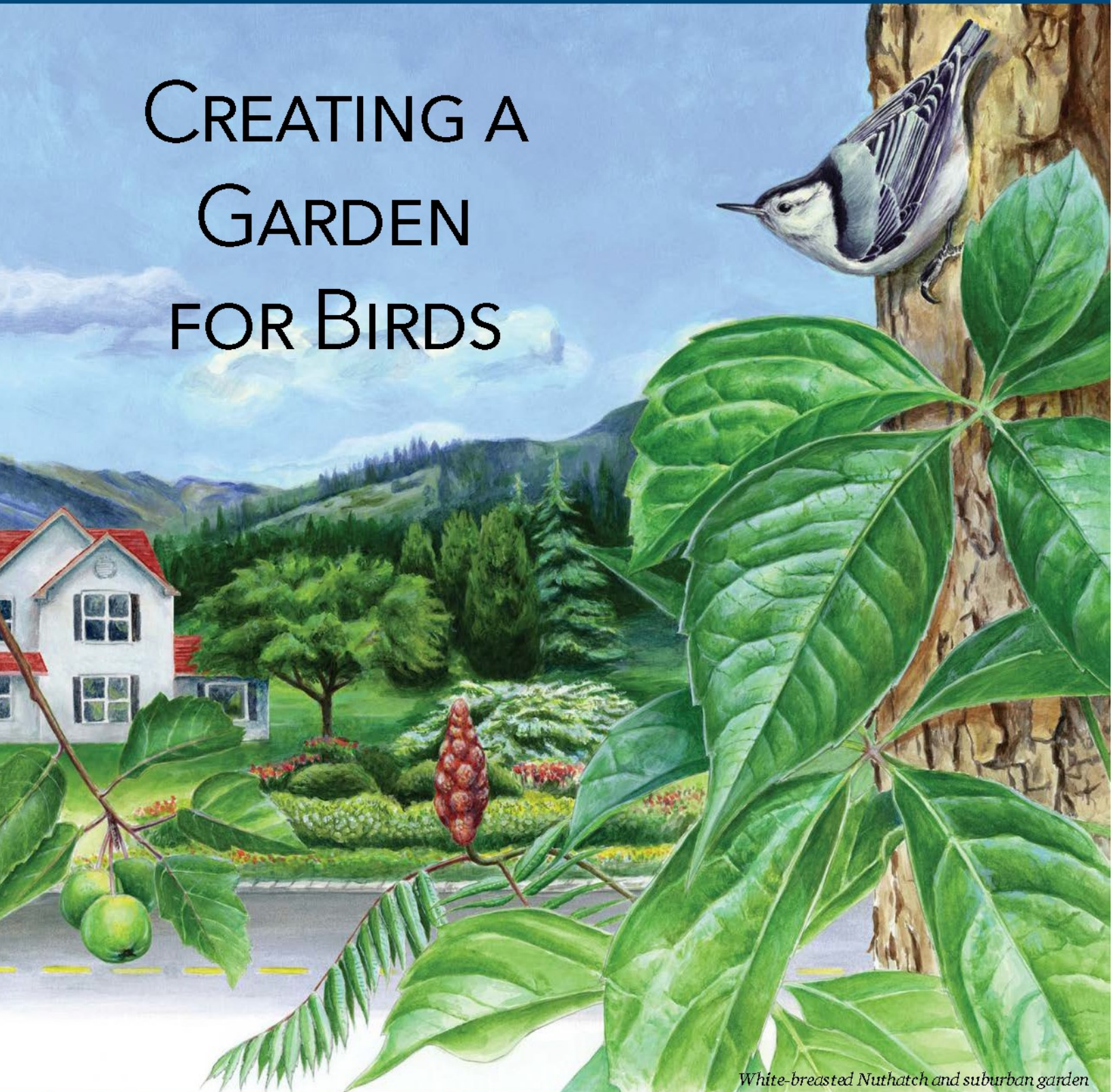
- Rock Beach Aquatics- located in Rochester, [585-445-8904](tel:585-445-8904). Large selection of aquascaping supplies and plants
- Pet World- located in Rochester, 585-225-8700. A large selection of aquascaping supplies and plants



Pictured: The author's 10-gallon botanical biotope for dwarf rasboras

Cornell Cooperative Extension of Yates County- I also always welcome a chat on one of my favorite subjects so feel free to contact me with any questions you have at cb239@cornell.edu or (315) 536-5123!

CREATING A GARDEN FOR BIRDS



White-breasted Nuthatch and suburban garden

Few things are as interesting and beautiful as songbirds. They brighten up the darkest days of winter, adding music and color to our lives. What can we do to repay them? For starters, we can make our yards more bird-friendly. Never before has suitable habitat for birds been in such short supply. Urban areas are expanding constantly, altering or destroying natural areas. By creating bird gardens, we provide oases for birds in the heart of our cities. Not only the birds benefit. If you make your yard more attractive to birds, you'll have the pleasure of seeing an increasing number and variety of birds there.

The first step in designing a bird garden is to evaluate your yard from a bird's perspective. Does it provide the basic necessities—food, water, shelter—that birds need to survive? If not, which are lacking? If there's a shortage of food, you can hang up bird feeders, but also consider planting some fruit-bearing trees or shrubs. Plants that hold their fruits through the winter provide a vital food source for nonmigratory birds. Add variety to the kinds of food you offer, and you'll attract a wider variety of bird species.

PLAN AHEAD

When you're designing your yard, consider how large each plant will be when it matures. Remember that a lovely little tree that you plant today may become a giant behemoth that hogs your entire yard in a few years.

Before you start digging up plants and rearranging your yard, you'll want to try out your garden design on paper. Draw a map of your property, showing the location of your house and all the trees and other major plants.

WITH A LITTLE EFFORT, YOU CAN EASILY TURN YOUR YARD INTO A WELCOME HAVEN FOR SONGBIRDS.

A good water source will draw birds like a magnet. Even just a common birdbath purchased at a garden supply shop will do. Some people hang a plastic bottle or jug of water with a hole in the bottom over their birdbath. The motion and sound of the dripping water is irresistible to many birds.

Does your yard have an area of dense thickets that birds could use for nesting, secluded perching, or escape cover? If not, then plant some shrubs or make a hedge. Consider growing some vines up the side of your house or along your fence. Try to create lush, wild growth in a few places to simulate a natural environment. You might attract cavity-nesting birds by putting up a nest box (see BirdNotes: *Selecting a Nest Box*).

You should be able to find some excellent plants for your garden in a nursery—either local or mail order. Do check to make sure that the plants you select are hardy and native to your region.

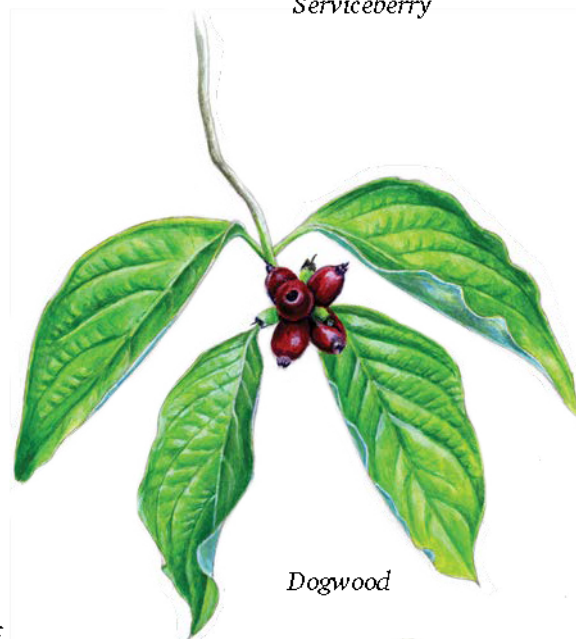
Then place a sheet of thin tracing paper over the map and draw your redesigned garden, indicating where each new plant will go.

Avoid straight lines or rows in your plantings. Create a meandering line where two kinds of habitat, such as shrubs and lawn, meet. These edge areas provide the widest variety of perching places, nest sites, and food types. Develop secluded areas of shrubs, conifers, and mixed plantings. Take note of the areas in your yard that receive sun or shade, and choose only plants that are appropriate for each lighting situation. Leave dead limbs and even entire dead trees where they are (unless they're dangerous to people or property). The insects tunneling under the bark are an important food source for birds such as chickadees, woodpeckers, and nuthatches.

Furthermore, old hollow trees are becoming increasingly scarce, and are often taken by nonnative species such



Serviceberry



Dogwood



Wild Grape

BIRD-FRIENDLY PLANTS

Check with your nursery to make sure that the plant species you select are native to your area.

DECIDUOUS TREES

Mulberries (*Morus* species) The berries produced by these trees in July and August are a favorite food of more than 40 bird species. These wide-spreading, medium-sized trees grow 30 to 60 feet tall.

Dogwoods (*Cornus florida* and other species) An excellent choice for birds and people, this well-known ornamental tree is covered with white, pink, or red flowers in spring and red fruits (birds love them) from August to November. Grows up to 40 feet tall.

Crab Apples (*Malus* species) Many bird species eat the flower buds, flowers, fruit, and seeds of these trees, which also provide good cover and nest sites. Usually grows to about 20 feet tall.

Serviceberries (*Amelanchier* species) These are medium-sized trees, 25 to 60 feet tall, that grow masses of white or pinkish flowers in spring. Fruits appear in the summer.

CONIFEROUS TREES

Red Cedar (*Juniperus virginiana*) An attractive cone-shaped tree, offering cover, nest sites, and winter fruit for birds. Usually grows 50 to 90 feet tall.

Spruces (*Picea* species) The cones of these trees produce seeds that birds eat in fall and winter. Spruces also provide cover and nest sites. They may grow up to 150 feet tall.

SHRUBS AND VINES

Staghorn Sumac (*Rhus typhina*) This shrub has brilliant red fall foliage and clusters of hairy red fruit that persist throughout winter and are eaten by many bird species.

Northern Bayberry (*Myrica pensylvanica*) This semi-evergreen shrub grows berries which stay on the plant year-round and are a preferred food of Tree Swallows, catbirds, bluebirds, and many other birds.

Viburnums (*Viburnum* species) A large genus of easy-to-grow shrubs with white flow-

ers in spring, followed by red, yellow, blue, or black berries. Birds eat the berries and find cover in the branches.

Virginia Creeper (*Parthenocissus quinquefolia*) A tree-climbing vine that produces small blue berries from August to February.

Wild Grapes (*Vitis* species) These climbing vines provide superb fruit, eaten by more than 50 bird species. The vines also provide excellent cover and nest sites.

HERBACEOUS PLANTS

An herbaceous plant has flowers as well as soft, green stems instead of woody branches. They can be annual, biennial, or perennial. The best herbaceous plants for birds produce edible seeds. For example, it's hard to go wrong with sunflowers which produce large seeds with lots of fat content and most birds love them. If you are hoping to attract hummingbirds, go for colorful, tubular flowers, such as salvia, foxglove, morning glory or bee balm. You'll probably attract some butterflies, too!



Mulberry



Northern Bayberry



Plants shown on front cover

1. Virginia Creeper
2. Crab Apple
3. Staghorn Sumac

4. Spruce
5. Red Cedar
6. Viburnum

as European Starlings and House Sparrows. Native cavity-nesters, such as bluebirds and woodpeckers, are having an increasingly difficult time finding nest sites. A dead tree can look attractive in a garden, particularly if it has ivy growing up its trunk.

Use dead branches that fall from your trees to start a brush pile. It will afford protection to the birds from harsh weather and predators. To start your brush pile, lay down some thick

branches about two feet deep, then add a few feet of thinner branches on top. Over that, add some thin conifer branches.

With a little time and effort, you can easily turn your yard into a welcome haven for local and migrant songbirds.

The illustrations in this issue of *BirdNotes* were created by Reyn Ojiri, a Bartels Science Illustration Intern. Please visit www.birds.cornell.edu/artinterns to learn more about the Cornell Lab's art internship program, or visit www.reynojiri.com to see more of Reyn's work.



*American Goldfinch
on lemon queen
sunflowers.*

To learn more about
gardening for birds and
mapping your bird habitat
for science, visit

www.yardmap.org

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About Us

The Master Gardener Program is a national program of trained volunteers who work in partnership with their county Cooperative Extension Office to share information throughout the community.

Master Gardeners are neighbors teaching neighbors about landscapes, vegetables, fruits, herbs, houseplants, beneficial and harmful insects, plant diseases, integrated pest management, wildlife management, soils, birds, composting, water conservation, and much much more.

Master Gardeners are considered researchers rather than experts. They participate in 40 hours of training provided by experienced staff from Cornell Cooperative Extension to gain a basic understanding of horticulture and available horticultural information and online resources. Course topics include plant nutrition, soils, vegetable, fruit culture, trees, shrubs, lawns, diseases and insects that affect plants, pruning and more.

You don't need to be an expert to join, if you enjoy gardening as a hobby, this may be perfect for you.

To become a Master Gardener, all you need to do is attend a 10-week training offered by Cornell Cooperative Extension.

For more information, please call us at 315-536-5123!



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