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The Garden Path

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SOIL COMPACTION*

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**From the editor- Articles for the Garden Path are written for a general audience. This note to master gardeners covers the topic in a way that is easily understood by all gardeners and is very important for all gardeners to practice. I have chosen to include it as written*

You will remember from Master Gardener training that soil is made up of, among other things, tiny mineral particles of various sizes. The largest particles, sand grains, are visible to the naked eye. Silt and clay particles, on the other hand, are too small to be seen without a microscope.

Many of us in Piedmont North Carolina garden in soils that mostly consist of clay particles. This is certainly the case in our two main demonstration gardens (Memorial Garden and the Herb Wheel in Warren County). When weight is placed on top of a garden bed that's mostly clay, the tiny particles get pushed closer together. That leaves less space between the particles for water to flow, roots to grow and worms to crawl. That's what's known as soil compaction.

Our two main demo garden sites are severely compacted. At the farmers market, the pickup trucks and bulldozers and other heavy construction equipment that drove over the site in 2014 are the culprits. In Warren County, the compaction happened much longer ago, but probably also from vehicle and equipment traffic.

Those of you who have worked on bed establishment in our demo gardens will remember (perhaps with displeasure!) at how insistent I was on breaking up that compaction. Many of you worked hard with shovel, fork, spade, tiller and mattock to dig deep. My goal was to create beds that had at least 6 to 8 inches of loose fluffy soil, and 10 is even better. In large part, that's what we did.

Now, instead of a medium that acts almost like a brick, which absorbs almost no water, we have something more akin to a sponge, with lots of pores to receive and hold water, for roots to grow and worms to crawl.

But there is a major difference between our garden beds and a sponge. If you squeeze a sponge, it quickly rebounds to its original shape, with the pore spaces unaffected. If, however, you squeeze a handful of our very clayey garden soils, it stays compressed. The pore spaces become much much smaller.

Thus, once we've created that loose, fluffy soil, we want to avoid anything that squeezes the soil particles back together. Certainly we would all be opposed to a heavy vehicle driving across a newly tilled garden spot.

But consider this. A standing human exerts something like 8 pounds per square inch of pressure on the ground. That's enough to do a fair bit of soil compaction, especially if people walk over the same area repeatedly.



The author of the first article, Paul McKenzie (front right), is pictured with EMG volunteer Sam Brannan (left front) and Extension Agents Matthew Place (left rear) and William Landis (right rear) performing some of the work required to break up the compaction at the newest Warren Office Demonstration garden.

Thus, whenever possible, try to avoid stepping in your garden beds. This is one reason I suggest beds no wider than about 4 feet, as the center can be easily reached from either side without stepping into it.

It all goes back to what I learned many years ago, and which I've tried to convey to the gardening public through the years. Take care of the soil, and the soil will take care of your plants.

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UN-COMPACTION IN ACTION:

Some observations from creating a demonstration garden

By Juel Duke

The most recent demonstration garden in Warren County, mentioned in Paul McKenzie's article above, was a lesson in working with the existing soil to improve compacted soil. In fact, it proved to be a lesson in many aspects of creating a garden space.

Before the photo above was taken, we had spent hours tilling, hand digging and amending the entire space, a 21+ foot diameter circle, before we could create the space for the central feature. Working from the center out helped us to NOT compact the planting areas while

allowing us to compact the center walkway as well as the outer area of soil around the entire bed. Compacting the area is an important step when creating a safe and stable walkway. Here you see one of the team freely walking on the gray paver base before the pavers were added.



Now that the hardscape is complete, we are ready to wait until Spring to add many more plants and to invite the public to visit. Creating a space like this one was a new experience for all of us and one that we all agreed was a lesson in “trial and error”. Throughout, McKenzie reminded us of the importance of not compacting the areas where we so diligently fluffed.



CHECKLIST FOR DECEMBER, JANUARY & FEBRUARY

Mary Jane Bosworth

December

- Bare rooted trees may still be planted this month. Remember to water them throughout the winter during dry spells.
- Dig and transplant small shrubs.
- Now is the time to sow poppy seeds.
- Start onion seed indoors.
- Spend some time with catalogs creating a wish list for Christmas.
- Winter applications of lime are beneficial to spring gardens since lime takes a long time to react with the soil. Before doing this, make sure you take a soil sample and have it analyzed to see if lime is needed.
- Add your raked leaves to your compost bin for good compost in the spring.
- There is still time to plant spring blooming bulbs.

- Cut back Sedum, Mexican Bush Sage, Fall Asters and Garden mums within a few inches of the crown.
- Add colorful, cold hardy annuals to your garden for color this winter.
- Weed out the “weed” trees and shrubs in wooded areas while they are easily removed and before they compete for light and nutrients with desirable plants.

January

- Keep your garden well mulched to keep garden temperatures even and protect roots.
- Soak pea seeds overnight and plant directly into the garden. Start them under a row cover but once they are up, they no longer need covering.
- Check bulbs in storage such as Dahlia tubers and gladiolus. If any are rotted, throw them out.
- Spray roses this month with lime-sulfur to control insects and diseases.
- Toward the end of the month, you can plant broccoli seeds indoors, under lights, for transplanting in March.
- Soak pea seeds overnight and plant directly in the garden starting them under row covers until the seedlings peak out of the soil; then they no longer need to be covered.
- Lettuce, spinach, greens and chard may be planted under row covers, a short row every 2 weeks.

February

- Mulch, water and protect your garden. The mulch helps keep the soil temperatures even.
- Damage done by hungry critters is not easy to prevent. There are many commercial repellents available. Read labels carefully before applying.
- Keep ahead of winter weeds by pulling them while they are still young.
- Take action against invasives. Remove and root out Japanese honeysuckle and English ivy while still dormant.
- If you have a compost bin...stir it up.
- Fertilize spring flowering bulbs when 1” of growth is seen.
- Start seeds indoors, either in a sunny window or under grow lights, keeping lights close to the top of the seedlings and raising the lights as they grow.
- Anxious to get out in the garden, then this is the time to trim and prune. Most trees and ornamentals prefer to be shaped at this time of year. Remove diseased and dead limbs. Shape, keeping in mind that there will be growth in the spring. Do not shear...meaning cutting all branches to one length; but instead, cut branches at various lengths for a natural look.
- Remember, in your enthusiasm to trim, that you must not cut any spring flowering plants that bloom on last year’s wood, such as azaleas, rhododendrons, forsythia, spirea, flowering quince, pieris and others.

- Ornamental grasses should be cut back before new growth appears.
- Control wild onion with 2,4-D with Amine. Add a few drops of dishwashing detergent to act as surfactant to cling to arrow leaves.
- Clean up garden debris.
- Delay planting warm season grasses until the daytime temperature stays consistently above 60 degrees.
- Plan for warmer months by spending time with gardening books and seed catalogs. Get new ideas and purchase something that will make you happy.



ALL THE BUZZ– November, 2021

Bea Leach

When I find a plant that creates a show in two seasons, it makes my heart happy. In the summer 2021 edition of *The Garden Path*, I wrote about the *Amsonia hubrichtii*, “Bluestar Amsonia” in the Memorial Garden. (If you missed that article you can find it here;



https://docs.google.com/document/d/1xEvfGLEeAK5ap51yJ_-Y4r0n-T-1ydbJC0JGEc4HWX8/edit)

They are beautiful when they are in bloom during the summer, but they get a second show in the fall where they are equally as beautiful. The flowers fade away and the ferny foliage remains green until a frost.

Then those fronds become green, gold and bronze. They make a beautiful backdrop to the mums and asters in the fall garden.



In my own pollinator garden stands a *Lantana camara* “Miss Huff”. I say stand, but she doesn’t stand as much as she sprawls. She is huge and makes a big statement on the corner where she is planted. While admiring her one afternoon in October, I found hidden in the branches a green lynx spider and her egg sac. It was love at first sight on my part. I think it might have taken *Spidella* a little longer to decide I was okay.



The green lynx gets its name from the manner in which they hunt their prey. Most spiders create a web to catch their dinner, while the green lynx lays in wait and pounces on her prey. They prey on beneficial pollinators but they also prey on crop damaging insects which makes them an important ally for farmers.

When I came upon *Spidella*, she was doing what a female spider does - guarding her egg sac. The female uses her silk to spin an egg sac, sometimes incorporating leaves which she anchors to surrounding vegetation. She will sit on top of the egg sac with her legs wrapped around the sac and will rush at anything she feels is a threat.

A green lynx lays an average of 200 eggs. Her spiderlings will remain in the egg sac for almost three weeks before hatching then they will remain in the sac another ten days. After they emerge from the egg sac, they will hang around for another ten days before dispersing. Because the spiderlings emerge in the fall, they overwinter in the protection of winter vegetation.



Even though her offspring have left, *Spidella* still spends her days near her empty egg sac. I peek in on her daily and I’m sure she enjoys it as much as I. Soon she will move to warmer cover. I know I will not see her again but hopefully some of her spiderlings will make their presence known next year.

UPCOMING GARDEN TALKS

The gardening tasks of fall and winter set the stage for a beautiful and productive garden over the spring and summer. Sign up for all sessions, or choose your favorite topics. Sign-up once at this [EventBrite link](#) for the free and informative series.

Feb 3, 2022 (2-3 p.m.) – Season Extension – We will cover a variety of techniques that can be used to extend your vegetable gardening season. These techniques can result in significantly more productive gardens, as well as spreading out the harvest for a longer time period.

Feb 17, 2022 (7-8:30 p.m.) – Spring Garden Planning – Late winter is the time to be certain that all the garden plans are in place. We will cover all the steps and techniques for seed starting. Other topics include container gardening preps and building raised beds.

Mar 3, 2022 (2-3 p.m.) – Pruning – Early spring is the preferred time to prune most ornamental trees and shrubs. This session will cover all the techniques and strategies that promote strong, healthy and attractive trees and shrubs.

Mar 17, 2022 (2-3 p.m.) – Summer Bulbs – While most gardeners are very familiar with the fall planted bulbs that signal the beginning of spring, there are many other reliable and easy care bulbs that can provide visual garden delights through the summer.

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Recommendations for the use of chemicals are provided as a convenience. User is responsible for reading and following all instructions. For more information, contact your local Agricultural Extension Agent.

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