NC STATE

Extension Gardener

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Extension Gardener provides timely, research-based horticultural information. We publish four issues per year. Send comments about *Extension Gardener* to:

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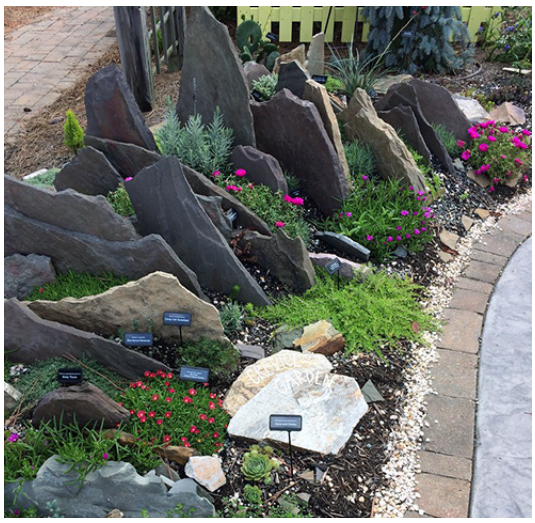
Crevice gardens add interest and save water

A crevice garden is a modified rock garden that mimics the gaps in natural rock formations to create crevices in which plants can grow. The stones in a crevice garden are stacked vertically on edge one behind the other instead of horizontally. The spacing creates crevices, and plants grow between the stones. Often the plants are alpine, desert, or miniature species, as xeric landscaping principles are used to reduce the need for irrigation. The soil is modified to include a mix of topsoil, grit (perlite or gravel), compost, and/or sand to promote water retention when water is limited and drainage when water is plentiful.

Crevice gardens work in many different areas, from small, irregular-shaped spaces—like where the crevice garden at Guilford County Extension Center's Demonstration Garden is placed—to larger areas like the crevice garden at the JC Raulston Arboretum. These gardens also provide an architecturally stunning addition to the landscape, with the different heights and textures of the stones mixed with plants that have different colors and textures. To begin, look at the site where the garden will be installed and outline a rough shape to determine the length and width of the space so the stone size can be determined. Stone selection is an integral part of the design and will be a lasting feature in the garden, so choose wisely. Flat stones work best, and colors can include reds, grays, and even hues that sparkle. Don't forget to look at the edges as well because the peaks will add visual interest to the garden.



Crevice gardens often include alpine, desert, and miniature plant species. *©Karen Williams, CC BY 2.0*

A crevice garden can be attractive in a small, irregular space. *©Hanna Smith, CC BY 2.0, Guilford County Extension Center*

To install the garden, dig trenches and set the stones in the surrounding natural soil. Large pieces can be supported by small rocks. Then pack clay around the pieces to provide support. Next add soil to the crevices. A soil mix of one part garden soil, one part mushroom compost, and one part perlite, sand, or PermaTill® is a common mixture that is used to promote drainage. Tuck small plants into the crevices, and place larger plants around the edges or in large openings.

When selecting plants, note that most crevice gardens include plants that like full sun and thrive in well-drained soil and even drought. Also check for hardiness, texture, foliage, and bloom time and color, so that there is something interesting in the garden throughout the year. Succulents and herbs work great as do cold hardy cacti. The overall effect is striking, with architectural interest from the stones, interesting textures, and beautiful blooms in a low-maintenance garden.

—Hanna Smith

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Coastal Extension Gardener

Extension Showcase

Ten Plant Tours

Since 2016, North Carolina Cooperative Extension's Nash County Center and the Nash County Extension Master Gardener℠ volunteers have been offering "Ten Plant Tours" of the Nash County Arboretum.

These monthly tours focus on 10 plants on the arboretum grounds that have a shared characteristic, history, or landscape use.

Extension Master Gardener℠ volunteers and Extension agents serve as tour guides and instructors for each Ten Plant Tour.

Attendees of the tours spend roughly an hour in the arboretum, discussing the selected plants. Many visitors return repeatedly as each tour is different.

Forty tours have been offered using the "Ten Plant Tour" format. The topics have ranged from "Ten Plants You're Pruning Wrong" to "Ten Plants that are Native to North Carolina" to "Ten Plants that Attract Hummingbirds" to "Ten Plants Your Grandmother Loved."

Ten Plant Tours are typically held on the second Friday of each month at noon between February and November. The Nash County Arboretum is located at 1006 Eastern Ave in Nashville and is open to the public 365 days a year.

—Matt Stevens

Ten Plant Tours at the Nash County Arboretum focus on plants with a shared theme. *©Michele Marston*

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Smart Gardening: Bald cypress adds year-round interest

Bald cypress is becoming a popular choice for residential landscapes. *©Katy Shook, Chowan, Gates, and Perquimans counties*

Mysterious in habit, the bald cypress tree, *Taxodium distichum*, is a native species that has a rich history in coastal North Carolina. It's frequently recognized for growth along coastal waterways, but the bald cypress tree is also growing in popularity among residential landscapes.The tree reaches an average height of 60 to 80 feet but has the potential to reach over 100 feet in wet settings. Fine pale-green needles are produced in the spring and turn a coppery-red in the fall before dropping and revealing the "bald" characteristics of the tree. Year-round interest continues with peeling bark and persistent cones. The tree is pyramidal in shape, but develops a broad shade-producing, spreading habit with age. Bald cypress tolerates a wide range of soil conditions including clay, sand, wet, and dry. Plant in full sun for best performance. When successfully established, bald cypress is resistant to most pests and is suitable for use in parking lots, lawns, screens, and street plantings. Its single trunk feature allows the tree to withstand wind damage and reduces the need for pruning. It is also successful in withstanding air pollution, poor drainage, compacted soil, and drought. The tree will not produce "knees" unless planted near a water source. Bald cypress has provided benefits to humans and nature for thousands of years. Today, humans further value the tree for its ability to improve water quality while providing flood control in wet areas. Animals, including bald eagles and ospreys, rely on the branches for nest building, while wood ducks, wild turkeys, and squirrels appreciate the food supply. Even aquatic animals such as catfish find shelter in the tree's root projections ("knees") that are produced in wet areas. For more information on smart gardening with bald cypress, check out the new **NC Extension Gardener Plant Toolbox**.

—Katy Shook

Food Production: Pecan tree selection

Pecan trees are large deciduous trees that produce nutritious nuts full of antioxidants, protein, and unsaturated fats. *©UGA CAES/Extension, CC BY 2.0, creative commons.org*

Pecan trees (*Carya illinoinensis*) are relatively affordable and bring beauty, shade, and food to your landscape. Cultivar selection is the most important factor in purchasing pecan trees. Select varieties that are resistant to pecan scab. In North Carolina, pecan scab is the most damaging disease to pecans. It is difficult to control because many homeowners are unable to adequately apply pesticides on a large tree. Pollination is the second most important factor in purchasing pecan trees. Pecan trees are *monoecious*: they have separate male and female flowers on the same tree. Pollen is not released when flowers are receptive, so pollination within and between the same cultivars is limited. Cultivars are separated into *type I* and *type II* for pollination purposes. For optimum pollination, NC State Extension recommends planting at least three cultivars with at least one of each pollination type. Type I cultivars include 'Cape Fear' and 'Pawnee.' Type II cultivars include 'Stuart', 'Sumner', 'Forkert', 'Gloria Grande', 'Kiowa', 'Chickasaw', and 'Elliot.' All cultivars have positive and negative attributes, so do your research before purchasing. Purchased pecan trees are grafted scions onto rootstock. Nuts that are collected and planted, or seedling trees, will not produce the same nuts as the parent tree. Each nut or seedling tree is a unique species and will have traits from the mother and father tree. This tends to result in variable nut quality. Pecan trees should be planted in late January and early February. Dig the planting hole deep and wide enough for the root system without curling the roots. Plant the tree so that the bud or graft union is at least 2 inches above the soil surface after planting and soil settling. For more information, see ***Growing Pecans in North Carolina***.

—Brad Hardison

Coastal Extension Gardener

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Pest Alert: Spotted lanternfly

The spotted lanternfly is a destructive feeder on food crops and ornamentals. *©Richard Gardner, Bugwood.org, CC BY-NC 3.0*

Although not known to be present yet in North Carolina, a new invasive insect pest known as spotted lanternfly (*Lycorma delicatula*) has appeared in the Mid-Atlantic states over the past few years.

This planthopper native to China is a destructive feeder and prolific breeder that damages both crops and landscape ornamentals. Spotted lanternfly lays eggs on trees, particularly tree-of-heaven, which ironically is also an invasive species. In addition to tree-of-heaven, spotted lanternfly feeds on fruit trees, grapes, and many hardwood trees. It also has an unusual tendency to lay eggs on outdoor furniture, equipment, and vehicles. Because of this characteristic, there is a high risk that this insect can be unknowingly transported from locations where it is already established, such as Pennsylvania, Delaware, New Jersey, and northern Virginia. If you visit any of these areas, you may want to take a few extra minutes to inspect the outside of your vehicle before heading home. Look for gray egg masses, which are prevalent from October through June.

Even if you aren't traveling, keep an eye out around your home for spotted lanternfly and alert your county Extension center if you suspect that you've seen this pest. Visit NC State Extension's spotted lantern fly resource page for more information: **gardening.ces.ncsu.edu/spotted-lantern-fly-resource-page/**.

—Matt Stevens

Lawns: Renovating cool-season lawns

As cool fall breezes sweep across the state, now is a perfect time to breathe new life into an existing cool-season lawn. A primary cause for renovation is filling in areas where grass has died out. This could be symptomatic of poor pH, incorrect fertilization, excessive thatch, or a variety of other causes. Make sure to start with a soil test and use the results to determine how much fertilizer and lime to apply to correct pH and nutrition.

After the soil sample, reduce weed competition in the areas you plan to reseed. Plan to use a combination of hand-weeding and herbicides to tackle these weeds, especially tough perennials. If the area has thatch buildup, wait a week after applying herbicides before de-thatching. For bare spots, till the top 4 to 6 inches and smooth the soil before re-seeding. Ensure uniform broadcasting by passing over the area in one direction with half of the seeding rate then applying the remaining half at a right angle to the first pass. For areas where grass is thin but present, use a de-thatcher or verticutter to slice an opening in the ground. Drop seed into these furrows and lightly cover. Some cool-season grasses, such as tall fescue, do not spread to fill in an area but will form bunches.

Keep newly planted areas moist with light irrigation. As these areas fill in, encourage deeper rooting by watering less frequently but for a longer duration. Deeper roots are more resilient and can lead to a healthier stand of grass that has fewer weeds and disease issues. Avoid over-fertilizing or adding too much nitrogen as this can push growth too quickly, leading to stress and health issues.

For information on when to re-seed, fertilize, and manage weeds in different lawns, see the NC State Lawn Maintenance Calendars for each type of turf in the "Lawns" chapter of the ***NC Extension Gardener Handbook***.

—Selena McKoy

Tips & Tasks

Preparing your garden for winter: 10 easy 'to-dos'

Winter is usually known as a quiet time in the garden. But unless the ground is frozen, there are plenty of chores to keep you busy during those winter months. There are perks to winter gardening, like not getting overheated and starting with a strong foundation for a beautiful yard or garden when spring has sprung. Here are 10 easy 'to-dos' that will get your yard and garden ready to survive the winter months and create a gorgeous foundation for your springtime garden dreams:

- Add an evergreen.
- Plant bulbs for spring color.
- Add a layer of mulch.
- Stow away containers that could be damaged by a freeze.
- Cut back perennials.
- Organize your seeds.
- Clean and oil tools.
- Stow away lawn equipment.
- Send off a soil sample.
- Prune roses.

Starting on these simple items during the winter months, from mulching to pruning, will save you time, money, and effort in the spring. Don't let the cold weather keep you from spending some quality time in the garden!

—Hannah S. Smith

©Hannah S. Smith, Pitt County

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Extension Gardener

Helping You Grow

Tree identification tools

Many gardeners can distinguish among major groups of trees, but identifying genus and species can be challenging. Botanists use morphological features—including leaf shape and arrangement, leaf hairs, presence or absence of thorns, and especially fruit and flower structures—to distinguish among species. For precise identification, species are sorted by such character traits using a systematic tool called a *dichotomous key*. Dichotomous keys present two sets of characteristics in a couplet. Users select one of the two choices that more accurately describes the specimen. Each choice will lead the user to a new couplet. This process is repeated until the final choice leads to a specific plant species. Due to the huge number of potential species, most keys focus on a set of plants in a geographical area. The ***Flora of North America*** is 30 volumes—enough for several bookshelves! However, technology has made using keys easier than ever. The **NC State University Herbarium** and its partners have developed several online keys helpful to gardeners. **Trees of North Carolina** is an easy-to use online key for native trees from across the state. **Winter Twig Keys** will help you identify trees using the buds, leaf scars, and other features visible in winter, with a focus on common trees in the eastern NC piedmont. These tools can enhance your botanical skills and help you become more familiar with common native species on your property.

—Matt Jones

Plant Watch: Alabama croton

The underside of Alabama croton foliage is silver. *©Bill Dodd, CC BY-NC 2.0, creativecommons.org*

Alabama croton (*Croton alabamensis*) is a southeastern native that is rare in the wild and also difficult to find in plant nurseries. But it's worth the quest. It is a loose, open, semi-deciduous shrub, reaching around 6 feet in height with a spreading, mounding habit. The foliage is bright-green above and silvery below, with the older leaves turning a showy pumpkin-orange in the fall. The foliage is also quite fragrant, described as resembling apples or bananas. The small, yellow-green flowers are similar to those of poinsettia (minus the large colorful bracts), and both plants belong to the spurge family (Euphorbiaceae). Other shared characteristics include milky sap and relative immunity from deer damage. Alabama croton tolerates some degree of neglect and dryness, but semi-shade with moist but well-drained organic soils are optimal conditions. Your biggest challenge in cultivating this plant will be keeping more aggressive shrubs and vines from overgrowing it.

—Tom Glasgow

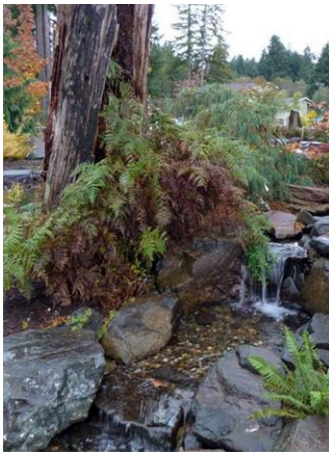
Incredible Edibles: Kale—easy to grow and nutritious

Kale has plenty of vitamin C and other nutrients. *©Jess, CC BY-NC 2.0, creative commons.org*

Kale is one of the healthiest vegetables you can eat—one serving is both low in calories and packed with vitamins and minerals, including 200 percent of your daily vitamin C requirement. Kale can be grown in the home garden in rows, planted in containers, or even used as an accent plant in the landscape. Once growing well, there are few insect problems after a frost occurs. Flea beetles are the exception. These insects overwinter as adults in plant debris. In early spring, they often become active. If there are extended warm spells in the winter, they may also come to kale and other crucifers to feed. If you like the sweetest leaves, harvest after the first frost. To encourage plants to continue to grow, harvest the larger leaves, allowing the center leaves to continue to produce. For more information on growing, purchasing and cooking kale, visit **content.ces.ncsu.edu/kale**.

—Shannon Newton

Sustainability: Wildlife friendly landscapes



Cover and water help wildlife thrive. *©Kathleen Moore, CC BY 2.0, NC State Extension*

We can enhance natural features in our yards to create wildlife friendly habitats. Such habitats should include the four major resources that wildlife require to survive: cover (such as clusters of trees and shrubs for wildlife to escape from prey), water from ponds or water gardens, places to raise young (including nesting sites and birdhouses), and year-round food sources. To enhance the variety of habitats and food sources for wildlife, include diverse plant species. Increase forage for pollinators by including at least three or more species blooming in each growing season. Incorporate plants that produce soft mast or hard mast (fruits and seeds) such as *Viburnum nudum* and *Rudbeckia fulgida*. Because species have different habitat preferences, a yard with diverse canopy heights (low-growing ground covers, herbaceous perennials, shrubs or small trees, and large trees) will provide shelter and nesting sites for the greatest variety of birds and other wildlife. For tips on planning wildlife habitats, see the ***NC Extension Gardener Handbook***. The ***E*xtension Gardener Plant Toolbox 'Find a Plant' feature** also includes options that can sort plant species by the type of wildlife they attract.

—Hanna Smith