



Extension Gardener

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Empowering
gardeners.
Providing
garden
solutions.

in this issue

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Increase plant diversity to enhance wildlife

Want to encourage more beneficial insects, songbirds, and other types of wildlife to live in your yard? The answer is simple: Increase plant diversity in your yard! North Carolina is home to 3,068 native plant species, which help to support an even greater diversity of native wildlife. Native plants are ideal for supporting wildlife and are well adapted to North Carolina's climate.

Plants sustain life and help support a complex food system. From pollinating insects to songbirds and small mammals, all wildlife depend on plants to provide food, shelter, and nesting sites. Not all wildlife feed on the same plants at the same time. Having a well-designed landscape composed of a diversity of herbaceous and woody plants will provide food and shelter to sustain wildlife throughout the year.

If you want to increase plant diversity in your yard, the best place to start is with the ground layer. Diverse mixtures of perennial ground covers—such as species of *Phlox*, *Viola*, *Oxalis*, and *Geranium*—are good choices because they have tiny flowers that only small insects like beneficial parasitic wasps can feed upon. Another choice for a ground cover is clover, which is favored by important pollinators such as honeybees and bumblebees. Clover also improves soil quality and increases nitrogen levels in the soil.

Annual and perennial border plantings in your garden beds will encourage other types of wildlife. For instance, coneflowers (*Rudbeckia* and *Echinacea* species) and *Coreopsis* species are favored by songbirds such as the American goldfinch because their seeds provide a winter food source. Other plants are critical for butterfly reproduction and survival. For example, caterpillars of the monarch butterfly can only survive on species of milkweed (*Asclepias*). Plants such as species of goldenrod (*Solidago*), ironweed (*Verno-*



nia), and joe-pye weed (*Eutrochium*) are favored nectar sources for many butterfly species and also provide beautiful flowers.

Plant a mix of evergreen and deciduous shrubs to provide food and refuge for songbirds throughout the year. Deciduous shrubs such as New Jersey tea (*Ceanothus americanus*) and buttonbush (*Cephalanthus occidentalis*) can be grown throughout North Carolina and provide nectar for insects and hummingbirds in the summer. Mountain laurel (*Kalmia latifolia*) and doghobble (*Leucothoe* species) provide shelter for small mammals and overwintering birds during the winter months.

Small trees such as flowering dogwood and redbud provide early spring color and also serve as a nectar resource for butterflies, while wax myrtle and American holly are evergreens that can serve as shelter for wildlife during the winter. Larger trees—including oak, elm, and pine—provide wildlife habitat and food throughout the year. Check with your local Extension center or visit www.ncsu.edu/goingnative/ for more plant recommendations suited to your area.

— Sam Marshall

Extension Showcase

Jones County Kids Become Insect Scientists

Jones County Cooperative Extension provided an opportunity for 32 youngsters to become entomologists for a week at a recent insect camp. This science camp helped increase students' understanding and appreciation of the insects around us.

Participants from ages 5 to 13 designed and created an insect habitat, distinguished insect predators from plant-eaters, collected insects in different habitats, and mounted insects for collection. One popular feature was the use of microscopes for a close-up look at insect parts. Many students reported never having used a microscope.

Throughout camp, students earned "money bugs" (plastic insects) for acts of good citizenship, correctly answering insect trivia questions, making astute connections from lectures, or sporting T-shirts or hats featuring insects. At the end of camp, "money bugs" were used to purchase insect collecting supplies, mounted insects for collections, insect traps, and insect-themed toys.

Each student received an insect net, mounting board, and collecting supplies to continue pursuing their newly awakened entomological interests. One participant summed it up best: "Before this, a bug was a bug. Now I understand there are many kinds of insects each with their own features, purpose, and predators. I appreciate insects a lot more now."

— Nicole Sanchez

Smart Gardening — Composting

Before you know it, you'll be raking leaves. Instead of discarding them, use those leaves for composting. Composting converts leaves, food scraps, leftovers, and grass clippings into a valuable soil additive. When mixed with soil in gardens, lawns and houseplants, compost improves soil quality and plant growth. Seedlings, potted plants, garden and field crops, lawns, shrubs, and trees can all benefit from compost.



Set up your pile or bin in a flat area protected from runoff and flooding. It should be more than 2 feet from your home or wooden structures, yet easily accessible. Make sure it's within reach of a hose to keep it moist. Build your pile 4 to 6 feet high and more than 3 feet wide so it can retain heat. Start with 4 or 5 inches of brown leaves and shredded paper. Then add 2 or 3 inches of food scraps, coffee grounds, and grass trimmings. Keep alternating

layers. Water each layer thoroughly to distribute moisture evenly. Toss in a handful of soil on each layer to add microorganisms. Top the pile with 4 or 5 inches of brown leaves to keep out flies and other pests and provide a filter for odors.

To heat up your pile, you can spread a thin layer of the following every 6 inches: dog, rabbit, goat, or poultry food; soybean meal; or canola meal. Or dust small amounts of alfalfa, bone, hoof, or cottonseed meal on top of nitrogenous materials (food scraps, coffee grounds,

grass trimmings) as they are added. Keep the pile moist (feeling like a wrung-out sponge) and only add small pieces of organic materials (materials break down quicker if they are less than 2 inches in size). For more information on composting, visit this website: <http://www.bae.ncsu.edu/topic/composting/>

—Rhonda Sherman

Food Production — Selecting fruit trees

Growing productive fruit trees requires careful planning. Selecting what to grow is the first step in being successful. The fruit you select should be compatible with the local climate and the level of management you are willing to undertake. Management includes training and fertilization as well as insect and disease control. Chestnuts, figs, pecans, and persimmons need little management, while apples, pears, Asian pears, and plums require moderate care. Peaches and nectarines need intensive management to produce a successful crop. Other fruit trees may grow here, but the quality and dependability of the fruit, as well as the intense management needed, make them less viable options.

A good site for fruit trees will have full sun and well-drained fertile soil. Soil testing should be performed to determine the acidity and fertility of the soil as well as the presence of parasitic nematodes (microscopic worms) in the soil. Trees should be spaced away from structures and other large plants.

Chose fruit varieties known to produce well in your area. Pollination requirements vary with types and varieties. For fruits requiring cross-pollination, plant at least two varieties with overlapping flowering periods together. Self-fruiting varieties may also increase yield and quality when two varieties are planted.

Most trees must be exposed to temperatures around 40°F for a certain amount of hours to break bud and grow properly. This is known as their chilling hour requirement. North Carolina grown trees have a risk of freeze damage if they flower too early in the spring. Varieties with chilling requirements of at least 750 hours are recommended to prevent crop loss.

To ensure many seasons of enjoyment, contact your local Extension center for recommendations of varieties, spacing, planting, watering, pruning, and pest control before you plant.

— Peg Godwin



Pest Alert — *Dealing with kudzu bugs*

Kudzu bugs are relatively new insects from Asia that were first found in the United States in 2009 near Atlanta. Kudzu bugs have square bodies and are brown to olive-green in color. Kudzu bugs overwinter under tree bark, in mulch, or within house walls. They emerge in spring as adults, lay their eggs on kudzu vines, and then die. The eggs hatch in summer and begin a new generation.

Kudzu bugs are usually found in clusters. They are known to feed only on plants in the bean family, including kudzu, wisteria, green beans, field peas, and soybeans. Kudzu bugs use piercing-sucking mouth parts to pull sap from the plant. Symptoms of their feeding include stunting, wilting, brown leaf edges, and dropping of

flowers and seedpods. The insects are attracted to light colors and can be found covering things like sides of houses, tree trunks, or vehicles.

In most cases, kudzu bugs do not pose a threat and control is not needed, though it may be necessary to control kudzu bugs on bean plants to prevent yield reductions. Insecticides containing synthetic pyrethroids are recommended for control. It is important to note this insecticide group is toxic to bees and beneficial insects. Pyrethrins are an organic option that can provide some control. Spraying an insecticide will only temporarily discourage kudzu bugs and does not provide long-term control.

— *Jessica Strickland*



R. Ottens, University of Georgia,
Bugwood.org

Carolina Lawns — *Winterizing the lawn*

Many gardeners are confused about lawn fertilization. Here's where the confusion starts. In most of the United States, cool-season grasses are grown. These grasses grow best during fall and spring, stay green in areas with mild winters, and go dormant in the heat of summer. Examples are tall fescue and Kentucky bluegrass. Cool-season grasses come out of summer dormancy and begin active growth when temperatures start to cool in the fall. Many of the winterizer fertilizers or advertisements for winterizing are targeted at cool-season grasses, though the advertisements may not mention that. These fertilizers often contain high levels of nitrogen, such as 32-0-4.

When looking at the southeastern United States, however, warm-season grasses dominate. Warm-season grasses grow best from late spring to early fall, going dormant in winter. Examples

are Bermuda, centipede, St. Augustine, and zoysia. Most plants, including grasses, should be fertilized with nitrogen when they are actively growing. Warm-season grasses are slowing down in the fall and getting ready to go dormant. They don't need high levels of nitrogen at this time of year.

Research shows that warm-season grasses grown in soils with adequate levels of potassium are less prone to diseases and green up faster in the spring. Apply 1 pound of actual potassium per 1,000 square feet to warm-season lawns before the end of September. This can be done by applying a potassium-only fertilizer such as 4.5 pounds of 0-0-22, 2 pounds of 0-0-50, or 1.5 pounds of 0-0-60 per 1,000 square feet to winterize your warm season lawn.

— *Danny Lauderdale*

Tips & Tasks

Avoiding Spider Bites

Believe it or not, spiders are our friends. They are the most effective predator in the landscape. Whether spiders are beneficial or not, people are afraid of them. For the most part, spider bites are insignificant. However, just as bee and wasp stings may trigger allergic reactions in some people, the same may be true for spider bites. You can decrease the potential of a spider bite by following these simple steps.

- Do not leave gloves, boots, or clothes in the barn or outside. Wring or twist gloves very tightly before putting them on. You may even want to step on them.
- Cram a towel into your boots before you put your foot in them. If you put a wad of newspaper in each boot when you take them off, spiders won't be able to crawl in.
- Shake jackets, aprons, and other clothes vigorously before putting them on. Again, wringing them very tightly should kill any hidden spiders.
- Lastly, always wear gloves when working outside. Thin rubber gloves or gardening gloves should be worn when working in the basement, shed, or indoors.
- For more information, visit <http://www.ces.ncsu.edu/depts/ent/notes/Urban/spiders.htm> or contact your local Cooperative Extension center.

— *Gary Pierce*





J.C. Raulston Arboretum

Showstopper — 'Shoal Creek' chastetree

If you are looking for a plant that doesn't need any tender loving care, you won't find a better choice than *Vitex agnus-castus* 'Shoal Creek'. Native to southern Europe and western Asia, 'Shoal Creek' chastetree is hardy from zones 6 to 9 and grows into a multi-trunked large shrub or small tree ranging from 10 to 15 feet high with a broad, spreading growth habit. 'Shoal Creek' is an improved variety that possesses larger spikes of violet-blue flowers. This vigorous small tree thrives in full sun and will tolerate most soil conditions as long as the soil is well drained. Once established, it is very low-maintenance and extremely drought tolerant. In addition to its attractive violet-blue flowers, 'Shoal Creek' has interesting star-shaped, aromatic foliage that is grayish green on top with gray underneath. 'Shoal Creek' flowers attract both hummingbirds and butterflies, giving this Showstopper Plant an added bonus.

— John Vining

Helping You Grow

Going Native

Going Native is a great Extension website for those interested in learning about native plants and how to provide habitat for many different wildlife species. On the site you can learn about habitats for many interesting wildlife species, how to prevent introducing invasive plant species, and how to use natives as a low-maintenance part of your landscape. This great resource also provides guidance on how to develop a native landscape plan for your yard, native plants for your area, and where you can find the plants for your natural landscape. Visit the Going Native website to learn more about adding natives to your landscape: <http://www.ncsu.edu/goingnative/index.html>

— Della King

Edibles — Drying herbs

Drying herbs could be your first step to food preservation obsession! The drying process is simple, and herbs are easy to grow—making them a great crop for beginning gardeners. For more information, visit this website: <http://www.ces.ncsu.edu/hil/hil-8111.html>

Herbs can be dried in a dehydrator, air-dried, oven dried, or even dried in a microwave. Many of our grandmothers set herbs out in the sun on an old sheet.

Although it makes a pretty picture, sun drying is not recommended because the herbs can lose flavor and color. No matter which method you use, your herbs need to be dried until they are crispy and easily crumple between your fingers. You can leave the leaves whole or crush them, then store in an airtight container. Place the container in a dry, cool, dark place until the leaves are ready to use!

— Kerrie Roach

Sustainability — Organic weed control

Controlling weeds without chemicals begins with knowing your weeds. Annual weeds such as chickweed and crabgrass grow from seed each year. Annuals are generally easy to control by hand-pulling and tilling. Perennial weeds such as dandelion and Johnson grass grow from roots that live year-round. Perennial weeds are harder to control than annuals and usually need to be dug out, taking care to remove the entire root system.

To keep weeds from multiplying, remove them before they bloom and spread

seeds. Cover the soil with mulch to prevent annual weeds from coming up. Bark, newspaper, pine needles, cardboard, landscape fabric, burlap, and seed-free straw are all effective. You can also plant a cover crop as a living mulch. Mow the cover crop prior to planting. The cover crop acts like a mulch, and you can plant into it without tilling the soil.

In the vegetable garden, control weeds when they are small with daily tilling, hoeing and hand-pulling. When amending the soil, use only fully finished compost.

Incomplete composting may contain weed seeds. Water only the desirable plants. Weeds will grow anywhere the soil is moist.

A few organic herbicides are available. Most contain plant oils or concentrated vinegar and are effective only when sprayed on small, young weeds. Organic herbicides are not selective, so take care when applying. Another option for controlling young weeds is a flame weeder. These devices use propane gas to burn off the tops of weeds.

— Sarah McClellan-Welch



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