

SPRING 2015

**MOUNTAINS NEWS**

Improving clay soil

Growing vegetable transplants

Azalea lace bugs

What weeds say about your lawn

**STATE NEWS**

Stemming the tide of invasive species

'Blizzard' pearlbrush

Edible flowers

Sustainability in the lawn

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

Editor and Team Leader  
**Lucy Bradley, Ph.D.**  
NC State University  
Campus Box 7609  
Raleigh, NC 27695-7609

Managing Editor  
**Charlotte Glen**  
Content Editor  
**David Goforth**

Regional Editor, Coastal  
**Sam Marshall**

Regional Editor, Piedmont  
**Randy Fulk**

Regional Editor, Mountains  
**Donna Teasley**  
Statewide Editor  
**Shawn Banks**

The use of brand names does not imply endorsement by NC State Extension nor discrimination against similar products or services not mentioned.

© 2015 NC State Extension

*Extension Gardener* may not be reproduced without written permission. News media quoting the newsletter should credit NC State Extension.

# Stemming the tide of invasive species

Invasive species are nonnative organisms that cause or are likely to cause economic or environmental harm, or harm to human health. Invasive plant species pose a significant threat to our natural communities, ecosystems, agriculture, and economy.

Invasive species generally share one or more characteristics that give them a competitive advantage in the environment. These traits include high reproduction rates, extended life spans, high dispersal rates, adaptability to a wide range of habitats, high genetic variability, and a lack of natural controls. Invasive plants force out native plants, in many cases creating a monoculture in the ecosystem and limiting overall biodiversity. Invasive plants can contribute to erosion, eliminate native plants that wildlife depend on for food, increase the frequency and risk of wildfires, reduce agricultural production and property values, and significantly reduce the recreational value of forests, streams, lakes, and rivers.

Invasive species may be introduced by accident or on purpose. One way some invasive plant



Japanese honeysuckle (*Lonicera japonica*)  
©Jil Swearingen, USDI National Park Service, Bugwood.org

species have been introduced to North Carolina is as ornamental plants. Just because a plant is available for sale doesn't mean it's not invasive. Many invasive plants can be legally purchased in North Carolina at garden centers, nurseries, and through online resources. Examples include callery or Bradford pear (*Pyrus calleryana*), privet species (*Ligustrum sinense*, *L. vulgare*, *L. japonicum*, *L. lucidum*), common nandina (*Nandina domestica*), princess tree (*Paulownia tomentosa*), Japanese honeysuckle (*Lonicera japonica*), English ivy (*Hedera helix*), Chinese and Japanese wisteria (*Wisteria sinensis*, *W. floribunda*) and water hyacinth (*Eichhornia crassipes*).

We can all help stem the tide of invasive plants by learning how to identify and control them and by removing them from our properties. Invasive species should be replaced with suitable alternatives, such as native species and nonnatives that have been proven to be noninvasive. Many resources are available to learn more about invasive plants. Organizations such as NC Cooperative Extension, the NC Native Plant Society ([ncwildflower.org](http://ncwildflower.org)) and the NC Botanical Garden ([ncbg.unc.edu](http://ncbg.unc.edu)) are excellent resources for information on both invasive plants and recommended alternatives.

(continued on final page)



Japanese privet (*Ligustrum japonicum*)  
©J.H. Miller & T. Bodner, Southern Weed Science Society, Bugwood.org

## Extension Showcase

### Burke County Master Gardener plant sale

Spring has come to the foothills, and spring means the Burke County Master Gardener community plant sale is coming up.

The sale will take place on Saturday, May 9, from 8:00 am until noon at the Burke Extension office at 130 Ammons Drive in Morganton.

All sorts of "spring goodies" will be available, and the proceeds will benefit the Extension Master Gardener program in Burke County.

The sale will include bedding plants, perennials, shrubs, herbs, vegetable and fruit plants, planters, hanging baskets, inoculated mushroom logs, and much more.

There will also be a yard sale and a bake sale on the premises. The sale is held indoors, so it will proceed regardless of the weather.

We hope you will come and shop with us for all of your spring plants!

Check us out on Facebook:  
[www.facebook.com/burkemastergardener](https://www.facebook.com/burkemastergardener)

— Donna Teasley



©Donna Teasley

[extensiongardener.ncsu.edu](http://extensiongardener.ncsu.edu)

## Smart Gardening: Improving clay soil

The heavy, clay-based soils often found in the NC foothills and mountains can be difficult to deal with and often need to be modified to get optimum plant growth. Soil modification is relatively easy and can pave the way for healthy plants.

Gardeners should have their soil analyzed to determine soil pH and additional nutrient requirements. Soil nutrients become unavailable to plants if the pH is too high or too low. Soil pH can be corrected by adding lime if the pH is too low or, in rare situations, sulfur can be added if the pH is too high. If recommended, lime or sulfur should be tilled in prior to planting.



©alexraths/Bigstockphoto.com

Many gardeners know the benefits of adding compost or aged manure to their soil. Both compost and manures improve soil structure while adding a small amount of nutrients. Adding these amendments will improve soil pore space and allow for better root growth.

Sometimes people add sand to clay soils in an attempt to improve drainage. Adding sand is generally not recommended unless enough sand is added to account for at least 50 percent of the soil composition. When small amounts of sand are added, the fine clay particles fill in around the sand, resulting in a concrete-like matrix that is worse than what you started with.

Soils can develop hardpans, especially if there is foot or equipment traffic over the area. Hardpans are dense layers of soil that prevent root penetration. Breaking up hardpans with a shovel or pick will allow roots to grow deeper, making the plant more resilient to dry conditions.

— Bill Hanlin

## Food Production: Growing vegetable transplants

Growing transplants is a great way to get a jump on the season for summer vegetable crops. Warm-season crops such as tomatoes, peppers, cucumbers, squash, and melons can be started indoors four to eight weeks before the last spring frost.

There are six major requirements when starting seeds indoors; sterile growing medium, and adequate light, heat, moisture, materials, and time. Heat is required for germination to occur. If ambient heat is not enough, provide additional heat with special heating mats made for starting seed. Ensure there is adequate light (16 to 18 hours) for the development of a sturdy stem and leaves. A southern facing window supplemented with a 40-watt fluorescent light placed 2 to 3 inches above seedlings provides enough light for most transplants.

Use a purchased seed starting mix to avoid issues with disease and insects. Start seeds in a tray and then move to larger containers after the first set of true leaves appears, or start seeds directly in containers, such as peat pots or cups with a hole at the bottom. After planting, place clear plastic over trays or a bag around containers to provide a constant moisture level. Remove covers as soon as seedlings appear. Water gently when the growing medium surface appears dry. If grown in a potting mix without added nutrients, fertilize seedlings with a water-soluble fertilizer once the first true leaves appear and every other watering thereafter.

Transplants will need to be hardened off before being put in the garden. Two to three weeks before transplanting, set plants outside during the day at increasing intervals to allow plants to become adjusted to the variations in temperature, wind, and moisture. A decrease in growth rate during this time is normal. Once hardened off, plant your transplants in the garden and enjoy the season!

— Kerrie Roach



## Pest Alert: Azalea lace bugs

Over 30 different types of lace bugs live in North Carolina. Each species of lace bug specializes in feeding on a specific plant species or plant family. The names of lace bugs typically indicate the types of plants upon which they feed. For example, sycamore lace bugs only feed upon sycamore trees, while lantana lace bugs specialize in feeding on lantana.

The lace bug that gets gardeners the most riled up is the azalea lace bug. This common pest does not seriously damage azaleas, but it can make them appear sickly and off-color. Azalea lace bugs (*Stephanitis pyrioides*) overwinter in the egg stage and hatch in early spring. Nymphs and adults spend most of their time on the underside of azalea leaves, where they use their piercing-sucking mouthparts to remove chlorophyll from the leaf tissue, causing azalea leaves to take on an unsightly, mottled, yellow appearance. If this describes your azalea, check under the leaf for dots of brown or black excrement that are a sure sign your plant has a lace bug infestation.

The most effective way to control azalea lace bug is to plant azaleas in the right location—out of direct sun. Planting a diverse landscape also helps reduce the numbers of lace bugs. Chemical control is possible. But if damage can be tolerated, treatment is not necessary because this pest does not threaten the health of azalea shrubs.



*Azalea lace bugs make azalea leaves look unsightly and mottled.*

@Pest and Diseases Image Library, Bugwood.org

— Donna Teasley

## Carolina Lawns: What weeds say about your lawn

Most gardeners strive for a healthy, dense lawn. Good cultural and fertility practices are needed throughout the growing season to make this happen. Mowing at the right height, providing the correct fertilization rates at the right time, and providing sufficient water all support dense, healthy turf growth, which is the best defense against weed invasion.

When weeds are present, it usually indicates something is missing from the growing conditions the turfgrass is experiencing. Recognizing the different kinds of weeds helps to unravel the mystery of what needs to be changed to achieve a healthy lawn.

Too little nitrogen allows white clover, crabgrass, broomsedge, and speedwell to thrive. While the opposite, excess nitrogen from too much fertilizer, will yield annual bluegrass, chickweed, and ryegrass. Weeds that indicate you're mowing too closely and too frequently include annual bluegrass, chickweeds, moss, pearlwort, and crabgrass.

Soil conditions can also play a major role in weed development. If you have compacted soils, you'll find these weed combinations: annual lespedeza, broadleaf plantain, goosegrass, prostrate knotweed, and prostrate spurge.

With wet soils, lawns will have moneywort, pearlwort, liverwort, moss, and sedges as their weed indicators. In dry soil conditions, yellow woodsorrel, black medic, and bracted plantain are commonly found.

Before mowing starts this spring, take time to see what types of weeds are present in your lawn. Continue to monitor the kinds of weeds that appear. Their presence will let you to know what changes need to happen to cultivate a dense and healthy lawn.

— Jan McGuinn

## Tips & Tasks

Don't guess when it comes to fertilization! Contact your county Extension center to learn how to have your soil tested. Testing is recommended every two years.

### Lawns

- Mow at the correct height. For tall fescue, set your mower at 3 to 3.5 inches. Mow fine fescue and Kentucky bluegrass lawns at 2 inches.
- Mow Bermuda and zoysia lawns at 0.75 inch to 2 inches.
- Leave clippings on the lawn. They return nutrients and moisture to the soil.
- Do not fertilize fescue or bluegrass lawns after March 15.
- Wait until May to fertilize Bermudagrass and zoysia lawns.
- Apply pre-emergent herbicides before dogwoods bloom.

### Vegetables

- Incorporate compost, lime, and other soil amendments prior to planting.
- Plant warm-season crops such as tomatoes, peppers, cucumbers, and squash after April 15. Be prepared to cover these crops in case of a late frost.

### Shrubs and Trees

- Finish planting by mid March.
- Prune dead or diseased limbs.
- Apply a 2- to 3-inch deep layer of mulch out to the drip line of trees.

### Fruit Trees

- Prune trees as late in the winter as possible, pruning the latest blooming trees first and the earliest blooming trees last.
- Fertilize based on soil test results no later than March 15.
- Scout and treat for insects and diseases.

— Julie Flowers

## Helping You Grow

### Extension's plant database

Trying to find the right plant for your yard? Extension's Plant Database can help. Available online at [plants.ces.ncsu.edu](http://plants.ces.ncsu.edu), the database allows you to quickly and easily search for the perfect plant among its 2,793 entries. Search parameters include plant type, mature height, sun or shade tolerance, attraction to wildlife, as well as flower and leaf color. Each plant profile features images, information about where the plant is from and where it will grow, as well as propagation tips. Pick the right plant the next time you plant—the information you need is only a click away!

— Charlotte Glen

### Stemming the tide of invasive species

(continued)

Another excellent resource is the NC Invasive Plant Council (NC-IPC). The NC-IPC ([nceppc.weebly.com](http://nceppc.weebly.com)) provides education and solutions for controlling a wide variety of invasive plants.

This year, NC-IPC is hosting the Southeast Exotic Pest Plant Council annual conference with attendees representing eight states. The conference is being held at the NC Botanical Garden, May 26 – 28, 2015, and is a great opportunity to learn more about invasive plant issues in the southeast United States. For more information on registration, agenda, and field trips, check the NC-IPC website.

— Jim Burke

NC State University promotes equal opportunity and prohibits discrimination and harassment based upon one's age, color, disability, gender identity, genetic information, national origin, race, religion, sex (including pregnancy), sexual orientation and veteran status. NC State University, North Carolina A&T State University, U.S. Department of Agriculture and local governments cooperating.

## New from NC State: *Exochorda* 'Blizzard' pearlbusch

'Blizzard' pearlbusch was bred at the Mountain Horticultural Crops Research & Extension Center in Mills River, NC, and is the progeny of three different species of *Exochorda*. The cultivar name 'Blizzard' comes from the larger than normal flowers that cover the bush in spring. When fully mature, this deciduous shrub reaches a height and width of 4 to 5 feet. As with other spring-flowering shrubs, 'Blizzard' pearlbusch may be pruned in the spring immediately after flowering if needed.

'Blizzard' pearlbusch prefers to grow in well-drained acidic soils but is very adaptable to soil type. For best flower production, plant this shrub in full sun. It will also grow in part shade, though flowering will be reduced. 'Blizzard' pearlbusch is hardy in USDA hardiness zones 4 – 8, and adapted to grow throughout North Carolina.

— Shawn Banks



© Thomas G. Ranney, NC State University

## Incredible Edibles: Edible flowers

Want to liven up your salads and other dishes? Add edible flowers. The blossoms of many plants are edible and can be used raw to garnish a wide range of recipes. Many edible flowers have a mild flavor. Examples include pansies, violas, sweet peas, tulips, gladiolus, and dianthus. A few flowers are known for their intense flavor. One example is nasturtium, an annual vine with large, brightly colored red, orange, or yellow blossoms and a sharp, peppery taste. Nasturtiums are easy to grow from seed. When sown directly in the garden after the last spring frost, nasturtiums germinate quickly and grow vigorously until the heat of summer sets in. Toss their blossoms in salads to add color, fragrance, and zesty flavor. Learn more about growing edible flowers from the new online Extension fact sheet, *Choosing and Using Edible Flowers*: [go.ncsu.edu/edibleflowers](http://go.ncsu.edu/edibleflowers)

— Charlotte Glen

## Sustainability: In the lawn

*Lawn* and *sustainable* are two words not commonly used together. Most people think of lawns as a high input landscape feature. With thought and persistence, it is possible to reduce inputs and create a sustainable lawn. Here are five ways to move your lawn toward sustainability:

1. Reduce the amount of fossil fuels used in maintenance. Replace your gas mower with an electric, or consider a manual reel mower if you have a Bermuda, zoysia, or centipedegrass lawn. Keep blades sharp! Sharp blades equal an efficient mower.
2. Reduce pesticide use by getting down and dirty. Bend your knees, kneel, grab weeds at the base ... and pull! It sounds silly, but you can reduce chemical use by pulling weeds before they take over the lawn.
3. Use a mower that mulches clippings and leaves them on the lawn. By removing clippings, you are actually throwing money away. Clippings return nutrients to plants and reduce the need for additional fertilizer inputs.
4. Follow a proper maintenance schedule. Check out [www.turffiles.ncsu.edu](http://www.turffiles.ncsu.edu) for a calendar specific to your turfgrass. Watering, fertilizing, and liming at the wrong time or in the wrong amount significantly increases inputs.
5. Reduce watering. Most turfgrass species need only 1 inch of water per week, and that only during the growing season. Use a rain gauge to measure rainfall, and water only when needed. Use a low-angled spray sprinkler instead of an oscillating head to reduce the amount of water lost to evaporation.

Lawns are not typically considered part of a sustainable landscape. But with a few modifications, your lawn can be on the road to sustainability.

— Kerrie Roach