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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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Landscape Need a Change? Plan on Paper First!

The junipers are blocking the living room windows, the shade tree in the backyard has more dead branches than live ones, and the privet you planted years ago as a screen is out of control (and not to mention invasive). Sound familiar? If so, your home's landscape may need renovation. You may have realized this long ago, but you've been hesitant to do anything about it because you just don't know where to start.

Start with paper and pencil. If you start your assessment on paper, you can eliminate a lot of hard work and discover ways to make needed changes with minimal time and money. Make a large-scale drawing of your house and permanent features (such as driveways, patios, sidewalks, and sheds).

Once you have that done, assess the existing environmental and plant conditions. Tape tracing paper over the plan, and sketch in all existing plants. Make plant and environmental notes (including shady areas, prevailing wind direction, and wet spots), and make notes about plant-related problems, hazards, and aesthetic or visual problems.

Decide what you want to save. Once you have the scale drawing with the assessment of the current landscape, start your renovation plans. Use another sheet of tracing paper over the base plan and the assessment overlay. Draw in those plants you feel should stay, either in their existing or different locations. Make a list of what you



Before: The previous owner had a hedge of privet along the street as a screen. Privet is an invasive plant that comes up from seed everywhere and requires pruning every four to six weeks during the growing season to maintain. ©Debbie Dillon



After: I removed the privet hedge and planted blueberries along the street, anchored by an evergreen holly on each end. Space between the blueberries and a new garage is used for a small vegetable garden. ©Debbie Dillon

want in your landscape in the future (such as less turf, more parking space, a swimming pool). Compare this list with the overlay that shows the plants you hope to save. Now you are developing your new landscape design.

Install permanent areas first. Once you have a completed design, decide how much can be done at a time. Renovation may take several years. If possible, complete construction and hardscaping first so that plants won't be damaged as permanent structures are installed.

Use the overlay showing which plants to remove or move, and do that work. As time and money permit, add the new plantings. Then repair any lawn areas that are poor or were disturbed during the renovation. As the work progresses, adopt the proper cultural techniques to keep the new landscape growing at its best. Learn from past mistakes and capitalize on things you've done correctly.

All gardens are in a constant state of change, so keep your drawings, and work from them in the future. When I recently sold a home, I passed my drawings and plant information along to the new owners. Now that I am in a new home, I have completed an assessment of my new landscape, which I am converting to include as many native and pollinator-friendly plants as I can.

—Debbie Dillon

Extension Showcase

Wilson Winter Lights

Join the Wilson County Extension Master Gardener Volunteers and get into the holiday spirit. Dazzling lights, floral delights, and holiday sights are all part of the Fourth Annual Wilson Winter Lights holiday event, December 1 to 3 and December 8 to 10 at the Wilson Botanical Gardens.

Walk through and explore "Candy Cane Lane," a favorite photo spot for families. Wander the magical "Butterflies' Flight of Fantasy" made from recycled materials. Be entertained with "Dazzling Light" synchronized with holiday music. See "Jingle Jungle Pond" where reindeer, flamingos, and other animals live in harmony. And new this year, "Sugar Plum Shimmer" features bigger-than-life nutcrackers waiting to welcome you. Remember your camera to take free family photos with Santa! Seasonal music starts at 7:00 PM with local choirs and school and community groups. Hot chocolate and cookies will be available to purchase.

Wilson Winter Lights runs nightly from 6:00 to 9:00 PM. Tickets cost \$5 for adults (age 13 and over) and \$3 for children. All proceeds support Extension programs at the Wilson Botanical Gardens.

For more information, email info@wilsonbotanicalgardens.org, or visit our website: wilsonbotanicalgardens.org.

—Cyndi Lauderdale



extensiongardener.ncsu.edu

©Cyndi Lauderdale

Smart Gardening: Building raised beds



The raised bed pictured here requires the following materials: ©Brad Hardison

- 8 posts, 4 in × 4 in × 22.5 in
- 8 ends, 2 in × 6 in × 46 in
- 8 sides, 2 in × 6 in × 187 in
- 8 inside braces, 2 in × 6 in × 43 in
- 2 side caps, 2 in × 6 in × 16 ft
- 2 end caps, 2 in × 6 in × 48 in

are to be tended! NC State recommends building raised beds no more than 4 feet wide to allow easy access to the middle of the beds. Beds can be built 1 to 3 feet high, and 4 to 16 feet long, depending on space and materials available and how much you want to invest in the project. Once the frame is constructed, fill the bed with a blend of compost, purchased topsoil, and fine pine bark mulch or peat (or a combination of the two). For more information see "Raised-Bed Planters" in the *Community Garden Handbook* (AG-806): go.ncsu.edu/cg-handbook.

—Brad Hardison

Food Production: Bulb onions

In eastern North Carolina, onions can be planted as seeds or transplants from September through February, but need a long time to reach maturity, typically 90 to 120 days for seeds and 75 to 105 days for transplants. Initial growth is directed to roots and foliage. Growth and development of storage leaves (which form the bulb) are initiated by changes in day length, depending on variety. Long-day onion varieties initiate bulb formation with 12 to 14 hours of daylight, and are usually grown in the North during the summer. Long-day varieties tend to be less sweet but store well. Days with 10 to 12 hours of sunlight trigger bulb formation in short-day varieties that are grown here in the South in the cool seasons. Short-day varieties are sweeter, but have shorter storage lives than long-day varieties.



Bulb onions need full sun and fertile soil. ©Kathleen Moore, *Extension Gardener Handbook*, NC State Extension.

Recommended short-day varieties for North Carolina include 'Granex,' 'Candy,' 'Texas Grano,' and 'Red Grano'. Bulb onions need full sun and well-drained, fertile soil with a pH of 6.0 to 6.5, and are best grown in raised beds. Plant seeds ½-inch to ¾-inch deep, spaced 1 inch to 2 inches within rows, and 1 foot to 2 feet between rows. Thin seedlings to a 3-inch to 4-inch spacing between plants. Harvested seedlings can be consumed as green onions. Plant transplants about 3 inches apart within rows. About a month before expected harvest, gradually start moving soil away from the developing bulb so that about a third of the bulb is exposed a week before harvest. Bulbs are ready to harvest when about three-fourths of the tops have fallen over. For more information on growing vegetables, consult the "Vegetable Gardening" chapter of the *NC State Extension Gardener Handbook* (go.ncsu.edu/ozztho) and the *Eastern North Carolina Planting Calendar for Annual Vegetables, Fruits, and Herbs* (go.ncsu.edu/enccalendar).

—Matt Jones

Pest Alert: Tough-to-control flea beetles

Striped flea beetles (*Phyllotreta striolata*) are pests of crops in the Brassicaceae or crucifer family. Also known as cole crops, brassicas include arugula, broccoli, pac choy, cabbage, collards, and kale—all common cool-season vegetables. Other flea beetle species, such as *Epitrix fuscula*, prefer solanaceous crops like eggplants and potatoes. Flea beetles are highly mobile, making them difficult to control. Monitoring for flea beetles is essential to managing them. Use yellow sticky cards and check for characteristic chewing damage: pitting on thick and waxy leaves and “shot-holes” on thinner leaves. Trap crops of the same or a similar crop, such as radishes, can be planted earlier than your desired crop to attract flea beetles. Apply labeled pesticides or harvest the trap crop to minimize flea beetle populations. Floating row covers protect seedlings and transplants from flea beetles, but covers must be completely sealed at planting so flea beetles cannot enter. Remove row covers during flowering to allow for pollination. Consider some type of insect control when populations are at 10 to 30 percent defoliation on seedlings or transplants. Older plants can tolerate slightly higher levels of infestation. On broccoli, cabbage, cauliflower, Brussels sprouts, and rutabaga, apply carbaryl or malathion at recommended rates. On collards, bifenthrin, malathion, or insecticidal soap can be used at recommended rates. Always read and follow label directions when applying pesticides.



Striped flea beetle (*Phyllotreta* species).
©Merle Shepard, Gerald R. Carner, and P.A.C Ooi, *Insects and their Natural Enemies Associated with Vegetables and Soybean in Southeast Asia*, Bugwood.org, CC-NC-3.0.

— Shannon Newton

Lawns: Cool-season weed control in the home lawn

Maintaining a dense, well-managed lawn is the best remedy for weed control. Unfortunately, most of us are not blessed with ideal growing conditions. Shade, poor drainage, low pH, and low fertility are common issues that can lead to thinning turf. This allows weeds that thrive in these conditions to outcompete turf. If possible, try to correct these issues in your home lawn and consider a turf variety that will make weed germination more difficult.

NC State recommends applying herbicides containing atrazine in September. Atrazine has both preemergent and postemergent activity, and will provide good control of annual bluegrass and many broadleaf weeds that begin to germinate as temperatures get cooler.

For tough weeds that atrazine does not control, including henbit, Florida betony, oxalis, and wild garlic, consider a two-, three-, or four-way herbicide. Examples of these are Celsius®, Change-Up™, Cool Power®, Escalade®, Speedzone® Southern, and Trimec® Southern.

Read each product label carefully to make sure the herbicide does control the weed and to ensure proper use of the product, especially on herbicide sensitive lawns such as centipedegrass. To increase the level of efficacy, look for a period of warm, sunny days when cool-season weeds are small and young. Weeds become much more difficult to control when larger and when the weather is less favorable.

Applying glyphosate to “dormant” lawns is not recommended for cool-season weed control. This can cause serious injury to the turf that will not be evident until spring. For help with identifying and controlling specific cool season weeds, consult your county Extension agent, and visit NC State TurfFiles at turffiles.ncsu.edu/weeds.

— Jason Weathington

Tips & Tasks

Winter Pruning

The time of year that you prune plants is important. Pruning at the wrong time may stimulate new growth that could be damaged by early frosts or freezes.

Poorly-timed pruning could also remove flower buds, reducing next year’s flower display. The following guidelines will help you prune your plants at the proper time.

- Most pruning is for size control and is best done in late winter through early spring (February through April).
- Prune after the landscape feature of your plant has passed. For spring-flowering plants, prune in late spring as the flowering season is ending. This allows for adequate growth during the summer to produce flower buds for the next year.
- For summer- and fall-flowering plants, such as gardenia, osmanthus, and fatsia, use tip-pruning or thinning in late winter or early spring.
- Noninvasive shrubs with colorful berries beneficial to wildlife should be pruned after the berries are gone for maximum benefit.

For more information, explore the four-part “Pruning Trees and Shrubs” series (AG-780) in the NC State Extension publication catalog (go.ncsu.edu/ag780):

Before the Cut
Tools to Make the Cut
General Pruning Techniques
How to Prune Specific Plants

—Victoria Neff

Helping You Grow

Holiday Help

What can you do when your mother-in-law insists that you purge your house of poinsettias to spare the life of the grandkids?

Or when the cousins are fighting over whether a yam is just a sweetpotato, or if “sweet potato” is one word, or two?

And what can you do if your sweetie doesn't believe that mistletoe really does mean he or she is supposed to kiss you?

What if you are terrified that the sap from the pine tree cuttings your teenager just used to decorate your 200-year-old family heirloom credenza is going to destroy the finish?

Well... you do what everyone should do at the holidays: Turn to Cooperative Extension for answers.

Take a look at your county Cooperative Extension center's website by visiting ces.ncsu.edu/local-county-center/.

—Tom Dyson



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Plant Watch: Rattlesnake plantain



Rattlesnake plantain. ©Tom Glasgow

Rattlesnake plantain (*Goodyera pubescens*) is one of many evergreen herbaceous perennials that become much easier to spot during the winter. This lovely native can be found from the NC mountains to the coastal plain, although I do seem to recall seeing more of these plants back home in the East Tennessee mountains. Rattlesnake plantain foliage is unique for its white, netted venation against a green background. White flowers are borne on tall spikes, as with other members of the orchid family, including *Spiranthes odorata*. If you have wooded property and happen to notice rattlesnake plantain on site, make an effort to preserve it by controlling invasive and highly competitive plants, such as English ivy, Japanese honeysuckle, and Chinese privet.

—Tom Glasgow

Incredible Edibles: Spicy greens

Upland cress, mustard greens, and arugula are hardy, versatile additions to the winter garden and cuisine. Winter or upland cress (*Barbarea verna*), also known as “creasy greens,” adds sharp, smoky flavors to soups or salads. Mustards come in a variety of colors and heat levels beyond the traditional ‘Southern Giant Curled’. Mild mustards such as ‘Tendergreen’, ‘Pac Choi’, and ‘Mizuna’ can be enjoyed raw in salads. ‘Red Giant’ and ‘Chinese Thick Stem’ have excellent cold tolerance. ‘Carolina Broadleaf’ has been bred for resistance to bacterial blight. Plant in a 12-foot row to have enough for a “mess of greens” for company. Arugula has two general types—rocket (or roquette) and sylvetta. The sylvetta type is smoky tasting, and ‘Ice-bred’ is a very productive and flavorful cold-hardy variety. After a frost, allow leaves to thaw before harvesting. Choose varieties selected for cold hardiness, continuous harvest, and overwintering to enjoy their flavors all winter long.



Warm up the winter with spicy greens. ©Elina Snyder

—Elina Snyder

Sustainability: Irrigation maintenance

Installing irrigation equipment or optimizing an existing system and incorporating drought-tolerant plants are great ways to sustain one of the world's most valuable resources. Installing irrigation in your landscape can reduce water use in your garden by directing the water to exactly where plants need it. There are several ways you can improve your existing irrigation system and landscape to make it more sustainable. Improvements include cleaning and winter-proofing your irrigation system, replacing hoses and heads to reduce water waste, and replacing old equipment. Not only will this cut down on water waste, but it can help reduce waterborne disease and pest issues in your landscape. Clean irrigation hoses of debris, remove nozzles on sprinkler heads, and check filters. Doing so allows for better water flow. Tightening heads to emit fewer gallons of water per minute in the winter will also conserve water. Repairing or replacing damaged sections in drip irrigation lines will lessen water loss. Installing rain barrels to collect water from your existing gutter system can meet many of your irrigation needs. Xeriscaping is another way to make your water use in the landscape more environmentally friendly. Selecting plants that tolerate drought, such as grasses and natives, and reducing your lawn square footage can drastically reduce water use. Grasses and native plants adapted to our area's climate may require little water. Reducing your lawn area will help to reduce water use in the landscape greatly. You can replace some of your lawn with native plants and grasses, mulch, stone, and rocks.

—Lauren Hill