

NORTH CAROLINA
BOTANICAL
GARDEN

CONSERVATION GARDENER

SPRING & SUMMER 2017



THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

IN THIS ISSUE

ON THE FRONT COVER

Mimosa

Albizia julibrissin

The Mimosa, also known as Silk Tree and Pink Siris, is a popular deciduous tree that grows 20 to 40 feet tall. Though it has striking pink blooms, this tree can harm farmland and displace native vegetation in forests and along roadsides.

ON THE BACK COVER

Japanese honeysuckle

Lonicera japonica

Honeysuckles are a garden favorite for their delicate flowers and heavenly fragrance. However, this vine requires constant attention or it will become a pest and climb anything nearby.

Cover photos by
Tom Earnhardt

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To inspire understanding, appreciation and conservation of plants and to advance a sustainable relationship between people and nature.

Chinese privet may be pretty, but it modifies ecosystems by displacing native vegetation. It is also difficult to eradicate.
Photo by James H. Miller & Ted Bodner, Southern Weed Science Society, Bugwood.org



The Wolf in Sheep's Clothing

BY DAMON WAITT, NCBG DIRECTOR

Dear Members and Friends,

Those of us who care deeply about native plants and habitats understand how important they are to our sense of place – the unique qualities of our own communities and familiar landscapes. But even as we are working to protect our natural heritage from land development and other pressures, native flora across the country – in our backyards, along our roadways, on our farms and ranches, in our parks and natural areas – are facing a less obvious but equally serious threat from invasive species. Invasive plants like Hydrilla, Chinese Privet and English ivy are a form of biological pollution. They can interfere with ecosystem functions by changing important processes like fire, nutrient flow and flooding; they can hybridize with native species resulting in negative genetic impacts; and they decrease biodiversity. Invasive species are second only to habitat destruction as the greatest cause of native plant extinction.

Executive Order 13112 originally signed in 1999 and renewed in 2016 defines an “invasive species” as *a species that is non-native (or alien) to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human, animal, or plant health*. Sometimes the term “invasive” is used interchangeably, and incorrectly, with words like exotic, alien or non-

indigenous. In fact, many introduced, exotic or alien species cause no harm whatsoever. Our agricultural economy is based largely on non-native, alien species such as wheat (Mid-East) and rice (Asia). While a large percentage of plants in the horticultural trade are introduced from other regions for ornamental reasons, the majority of these introduced species do not survive without extensive cultivation. Of those that do survive and reproduce, a small percentage become “invasive” or harmful.

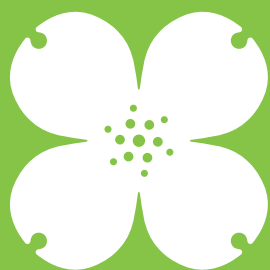
Today's modern global network of transportation and commerce is compounding the threats to healthy native plant communities by rapidly increasing the rate at which new, potentially invasive species are introduced and moved around. Invasive insects like the Emerald Ash Borer make their way into the country in wood packaging, and harmful aquatic animals like the Zebra Mussel travel great distances in the ballast water of ocean going vessels.

As a conservation organization, the North Carolina Botanical Garden considers invasive species a serious threat to the conservation of healthy plant communities. At the national level, we interact with the Invasive Species Advisory Committee of the National Invasive Species Council

(www.invasivespecies.gov), a coalition of federal agencies that support statewide invasive species initiatives. Regionally, the Garden is a founding member of the North Carolina Invasive Plant Council (nc-ipc.weebly.com) a consortium of public and private land managers, ecological consultants, researchers, planners, volunteer stewards and concerned citizens. Johnny Randall, our director of conservation programs, serves on its board of directors.

All of us can help protect our native plants and healthy habitats by learning more about the invasive plants in our own regions and communities. Fortunately and unfortunately, as the problem grows, so too do the opportunities for conservationists to get involved in the detection, control and eradication of invasives. Like the North Carolina Botanical Garden, many botanic gardens, native plant societies, garden clubs and conservation groups have organized citizen science efforts to control these harmful invaders. We hope you will join the cause in your region and take action to preserve the unique qualities of our natural heritage.

Sincerely,



NORTH CAROLINA BOTANICAL GARDEN

North Carolina Botanical Garden

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NANCY EASTERLING *Education*

LISA HICKS *Business Office*

CHARLOTTE JONES-ROE *Development*

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Conservation Gardener

JENNIFER PETERSON *Managing Editor*

English ivy spreading
throughout Jennifer's yard



Be the Change

BY JENNIFER PETERSON, MANAGING EDITOR

This issue of the *Conservation Gardener* is dedicated to a significant threat to our ecosystems – invasive plants. The following pages are full of information about what these plants are, how they have spread, what the Garden is doing about this problem and, I think most importantly, what we all can do to make a difference.

It is easy to think the invasive plant problem is just too big and overwhelming. They literally smother native ecosystems, and as I look at the natural areas I drive by every day, the problem seems insurmountable.

Then, when I get home, the problem is still there. Unfortunately, I moved into a home that could use a lot of attention, especially outside. My own yard is a treasure trove of invasive plants. I am not proud of this and I try to combat them, yet it is easy to find Wisteria, English ivy, Japanese stiltgrass and Autumn Olive throughout my yard. I know I have my work cut out for me – eradicating my yard of these plants won't be easy.

I also know that change of any sort really needs to start at home. The world is chaotic, but no matter what the problem is, there are things I can control. I can behave in ways that reflect my values and build the world I want to see. My small contributions make a difference to those around me, even if it is just in my corner of the world. And for the pollinators, birds and other wildlife with whom I share my space, it is all the world.

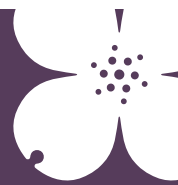
While this might not have a far-reaching impact in itself, by combining my efforts with those of countless others who feel the same way, we can make a bigger difference.

In the staff kitchen here at the Garden, a simple magnet hangs on the refrigerator. It says, "Be the change you want to see in the world." —Mahatma Gandhi."

Together, with all of us doing what we can, we might just change the world.

THANK YOU STIHL

The North Carolina Botanical Garden has taken a major step towards fossil fuel independence thanks to a large loan of battery-powered landscaping equipment by renowned manufacturer STIHL Inc. With this loan of commercial-grade, rechargeable chainsaws, blowers, lawn mowers and more, STIHL is supporting the sustainability efforts of the Garden.





Wildflower or Weed?

BY HEATHER SUMMER, NCBG SEED PROGRAM COORDINATOR

I once read that the only difference between a wildflower and a weed is our perspective. Anyone who has noticed a sea of pale purple as they pass a roadside patch of lyre-leaf sage or seen the billowing white waves of frost aster growing in a powerline right-of-way will most definitely agree with this. Many of the native plants we see growing along our roadsides or in old fields are often thought of as weeds, but many of these species can be attractive elements of a garden.

The Merriam-Webster dictionary defines a weed as "a plant that is not valued where it is growing" and a wildflower as "an uncultivated plant" and "a flower that grows in natural places without being planted by people." These are broad, simplistic definitions, but they suggest that it is all open to interpretation. Those dandelions in your yard that you curse and battle each year are prized flowers to a four-year-old child or a foraging honeybee.

Plant species that are considered weeds typically have life history traits that allow them to survive in disturbed areas. They are adapted to thrive in

poor soils, withstand drought and grow and reproduce quickly. They often have seeds that can either spread over long distances or stay dormant in the soil for many years. We can use some of these traits to our advantage and incorporate some of our native "weeds" into tricky spaces where other garden plants may struggle. In my yard, frost aster (*Symphyotrichum pilosum*) lives happily in dry, shady spots where other species just can't seem to survive, particularly during our frequently droughty summers. Another one of my favorites is the lovely Carolina wild petunia (*Ruellia caroliniensis*), which has explosive football-shaped seed capsules that are effective at helping it spread, but are never enough to become an aggressive nuisance.

Often times, our native "weeds" are not only attractive and tough, but they are also ecologically beneficial, providing nectar and food for insects and wildlife. The dainty little flowers of two common North Carolina native "weeds," Carolina elephantsfoot (*Elephantopus carolinianus*) and Venus' looking glass (*Triodanis perfoliata*) both provide nectar for native bees and butterflies.

The seeds of one of my favorite "weeds," lyre-leaf sage (*Salvia lyrata*), are eaten by birds. Even our native weedy species of dog fennel (*Eupatorium* spp.) and goldenrod (*Solidago* spp.), which are often falsely blamed for causing allergies, provide abundant amounts of nectar for many species of native bees and wasps. And according to a wildlife biologist friend of mine, it is hard to find a better bird buffet than what is provided by the dark purple berries of American pokeweed (*Phytolacca americana*), a species that many gardeners pull from their yards.

With just a little shift in our perspective, we can learn to appreciate the function and subtle (or sometimes not so subtle) beauty of a plant we once regarded as a roadside weed. I encourage you to take a closer look at a plant you might have previously dismissed, and you just might find a unique addition for your garden.



MEMBERS SEED LIST

Our annual Members' Seed List has gone digital! As a member, you are entitled to eight free packets of seed. Be sure to order yours from the list found online.

DETAILS AT
NCBG.UNC.EDU/2017_SEEDLIST





Reclaiming Our Urban Areas from Invaders

BY CATHERINE BOLLINGER



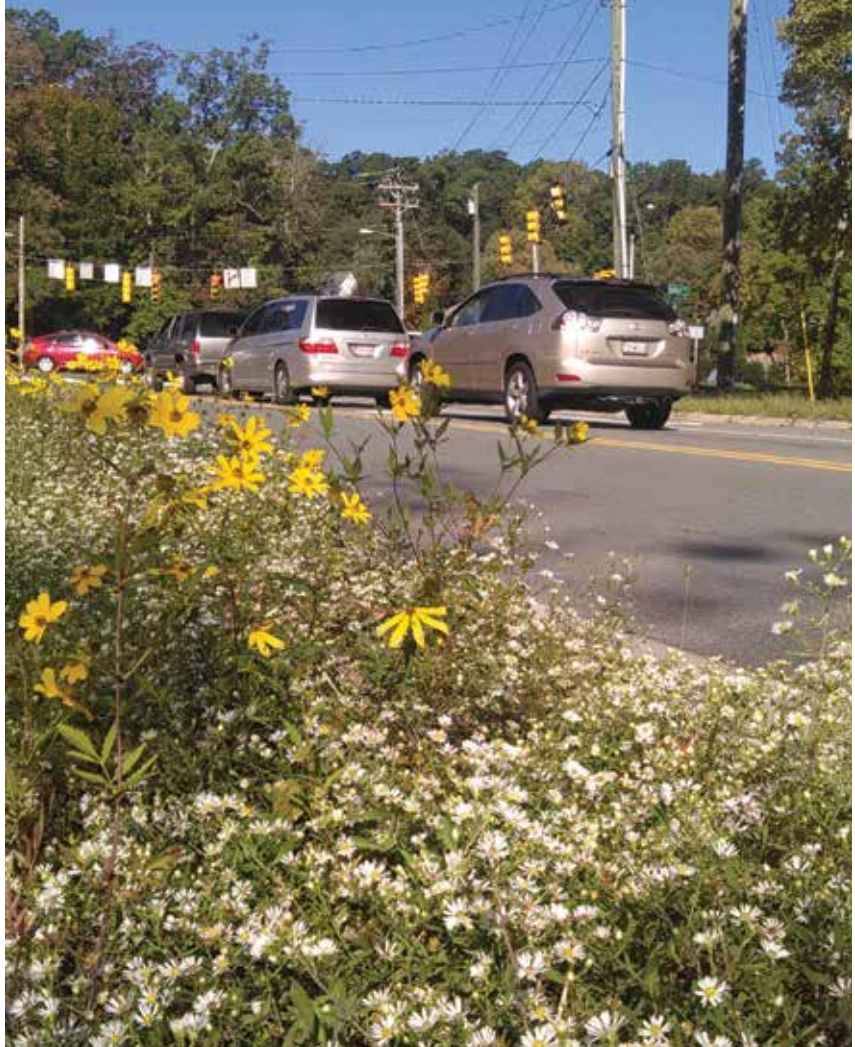
**“... invasive
species cost
the nation
more than
\$137 billion
annually.”**

As a member of the North Carolina Botanical Garden, you are likely aware of the increasing threat that non-native invasive species pose to native ecosystems. It is a worldwide, increasingly critical problem that, according to the world's ecologists, is a significant cause of biodiversity loss around the world, second only to outright habitat destruction.

In his latest book, *Half-Earth: Our Planet's Fight for Life*, Harvard professor emeritus Dr. Edward O. Wilson calls the alarming rise in the demise of species the Sixth Extinction. Unlike previous Earth extinction cycles, no cataclysmic geological phenomena are responsible. Human activity is the driving force behind this round of extinctions, which experts say is between 100 to 1000 times higher than it was before human impacts. Human choices are very much responsible for the proliferation of invasives that are contributing to the Sixth Extinction.

National Awareness

In 1999, President Clinton signed Executive Order 13112, which identified the spread of invasive species as a threat and established the Invasive Species Council and the Invasive Species Advisory Committee to oversee implementation of the order. In early December 2016, President Obama issued a new Executive Order which updated the previous one. The director



This sidewalk strip beside the North Carolina Botanical Garden demonstrates the beauty and resilience of our native Piedmont flora.

of the North Carolina Botanical Garden, Damon Waitt, serves as one of the experts on the Invasive Species Advisory Committee.

A widely referenced 2005 paper by David Pimentel reports invasive species cost the nation more than \$137 billion annually. Federal departments, state governments, academic institutions and conservation-focused non-profit groups around the United States all study, and in many cases attempt to control, the spread of invasive species on the lands for which they are responsible. But the spread of invasives and their devastating consequences will not be stopped without the help of individual citizens acting locally.

Local Battlegrounds

Every home and business owner with a landscape can help prevent the spread of invasives into natural areas by re-thinking their landscape choices. You'll

find some suggested guidelines in the *Plant This, Not That* article on page 10 of this issue of the *Conservation Gardener*.

In addition to individual and public landscapes, key battlegrounds in the urbanizing southeastern United States are our metropolitan natural areas. These are our local parks and greenways, usually dissected by trails and utility rights-of-way, that provide small pockets of native forest among spreading suburbs and strip malls.

Johnny Randall, director of conservation programs at the North Carolina Botanical Garden, believes we should focus our attention on these urban natural areas because of their critical role in supporting native wildlife and the native ecosystems upon which they rely. Urban natural areas will never look like wild nature, but Randall notes, "They will benefit a certain suite of animals that can co-occur with humans." Because native animals often use urban



Above: Invasive English ivy is stimulated to bloom and produce fruits when it climbs vertical surfaces such as trees; birds eat the fruits and deposit seeds into urban natural areas.

Below: Native flowers replace traditional non-native landscape plants on the grounds of Carrboro High School. This native landscape was designed to benefit native biodiversity, especially butterflies and moths, by providing plants important to their entire life cycles (nectar for adults, leaves for caterpillars).

natural areas as corridors for traveling to wilder, rural areas, he adds, “It is important that such ecosystems resemble wild ecosystems as closely as possible.”

Unfortunately, invasive species also use urban natural areas as transportation routes for dispersal. When a large tract of forest is not dissected by roads, trails or other man-made corridors, native plants – especially in the interior of the forest – are largely beyond the reach of invasives because the invaders are unable to compete with the established native ecosystems of the interior. But when such regions are dissected by rights-of-way, roads and greenways, invasives are able to penetrate and often eventually dominate these now-vulnerable native ecosystems. Randall notes, “This is where invasive plants get a foothold, and, because these are typically disturbed areas, it is easy for invasives to disperse into them and overtake them.”

Two Pilot Projects

This spring, Randall will be starting two pilot projects near the North Carolina Botanical Garden. His goal is to demonstrate the viability and effectiveness of local community actions that tackle invasive species’ incursions into urban natural areas.

Greenway Rehabilitation – Randall is in the preliminary stages of a project in which he will serve as technical advisor to a neighborhood homeowners’ association adjacent to a local town’s greenway that is significantly degraded by invasive plants. This section of greenway parallels a local creek, and it still retains some healthy remnants of native ecosystems that Randall believes can be revitalized by removing the invasive plants



currently overwhelming them and replacing them with native species.

The homeowners' association members are still pondering how to proceed but are considering charging each household a small fee to cover hiring landscape professionals with expertise in eradicating well-established invasives, with volunteers assisting as they feel able. After the invasives are removed, association members and other local groups will re-plant the area with appropriate natives. The goal of this project is to raise awareness about the impact of invasive plants and empower citizens with the skills and knowledge they need to remediate their local damaged native landscapes.

Roadside Surveys for Remnant Piedmont Savanna Flora – Randall and his colleagues have noted that roadsides in Orange County, especially in more rural areas, often contain struggling populations of rare, shade-intolerant native plants. Many of these plants once thrived in native ecosystems – Piedmont prairie and savanna – that have been almost entirely lost to forest encroachment, bulldozers and herbicides. These plants still persist, but often struggle, along sunny roadsides – the only sites remaining that provide the growing conditions (full sun without woody intruders or herbicide) they require.

This spring, Randall will begin a citizen science project in which trained volunteers will assess the edges of county roadsides for evidence of these rare and common native plants, such as Eastern Indian Paintbrush (*Castilleja coccinea*) and Southern Blazing Star (*Liatris squarrosa*). After these populations are identified, Randall will work with local and state government organizations to devise ways to preserve and maintain these beautiful and important native plants. The Orange County Board of Commissioners already endorsed this concept in a 2012 resolution entitled "Conservation of Native Wildflowers along Orange County Roadways."

In the coming months, check the North Carolina Botanical Garden's website for announcements about both of these projects. After they are underway, Randall plans to provide materials other local groups can use to begin their own rehabilitation and preservation projects, including the text of the resolution by the Orange County Commissioners. The Garden will also host planning workshops for the projects. Randall hopes that members of the Garden who live in other parts of North Carolina and the Southeast will feel equipped and empowered to tackle similar projects in their own communities and that those projects will inspire additional local efforts. It is only by working together that we will preserve and protect the native ecosystems upon which we all rely.



When utility companies landscape their installations with invasives like the Autumn olive shrubs shown here, birds eat the fruits and deposit seeds in adjacent urban natural areas.

"It is important that [urban natural areas] resemble wild ecosystems as closely as possible."

A FEW DEFINITIONS

Biodiversity: The variety of life (plants, animals, fungi, etc.) that lives in a particular ecosystem.

Ecosystem: A community of organisms (plants, animals, fungi, etc.) in conjunction with their non-living environment (air, water, soil, etc.)

Exotic: Any plant/animal/fungus/bacterium not indigenous to the location. Synonyms for the term exotic include non-native, alien, non-indigenous and introduced.

Habitat: An environment that is natural for the life and growth of an organism.

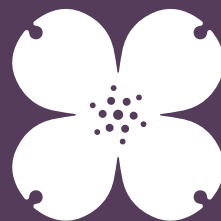
Sustainability: The support of long-term ecological balance by doing no harm to the native environment.

Invasive: Used as a noun in this magazine as shorthand for invasive species.

Invasive exotic: Any exotic species that threatens the survival or reproduction of native plants or animals or threatens to reduce biological diversity.

Southeastern US Native: An indigenous, regionally native plant/animal/fungus/bacterium.

Weed: A plant growing in the wrong place. Most weeds are annual or biennial herbaceous plants and may be native or exotic in origin. Although weeds are considered to be troublesome or unsightly, they do not threaten biological diversity.



A writer and editor for over 30 years, Catherine Bollinger prefers to write about botanical subjects whenever she can. For the last seven years, she has been blogging about her landscape at www.piedmontgardener.com.

Plant This, Not That

BY MICHELLE BRISSON, COMMUNICATIONS INTERN

North Carolina's native plant species have had thousands of years to adapt to our climate, giving them the ability to thrive here. Unfortunately, many commonly used ornamental plants are non-native and even invasive. Invasive plants threaten the biodiversity of our area by stealing the scarce resources other plants need to survive. Luckily, this guide makes it easy to incorporate native plants into your yard by planting this, not that.

TREES

Plant: Pawpaw Tree (*Asimina triloba*)

Native to the United States, this small deciduous tree adds a tropical touch to any landscape. The edible fruit it produces tastes like a cross between a banana and a mango. Don't let its strange appearance fool you, the Pawpaw's fruit is a delicious treat for both humans and other mammals.



Pawpaw Tree

Not: Mimosa (*Albizia julibrissin*)

The Mimosa, also known as Silk Tree and Pink Siris, is a popular deciduous tree that grows 20 to 40 feet tall. Though it has striking pink blooms, this tree can harm farmland and displace native vegetation in forests and along roadsides. Other native alternatives to the Mimosa include Honey Locust (*Gleditsia triacanthos*), Devil's Walkingstick (*Aralia spinosa*) and Sassafras (*Sassafras albidum*).



Mimosa

Plant: Carolina Silverbell (*Halesia carolina*)

An eye catching tree, the Carolina Silverbell deserves to be planted for both its size and spectacular appearance. The tree can reach heights of 30 to 40 feet with a width of 25 to 30 feet. In the spring, clusters of white flowers decorate its long but low-branching limbs. In the fall, its distinctive four winged fruit adds to its charm.



Carolina Silverbell

Not: Callery "Bradford" Pear (*Pyrus calleryana*)

Beware the beauty of the Bradford Pear. Lovely spring flowers and vibrant fall leaves disguise this foe as a friend. The tree's poor branch structure and weak wood make it prone to broken branches. Many neighborhoods and municipalities are removing their Bradford Pears because they are dangerous in storms and freezing weather.



Bradford Pear

Photo by Leslie J. Mehrhoff,
University of Connecticut, Bugwood.org

Do you want to know more?

Stop by the Garden through April to see our Plant This, Not That exhibit.



**SPRING
PLANT
SALE**

Buy native plants from NCBG and other local vendors. Enjoy food trucks, music, kids' activities, a visit by UNC's Ramses and more! ncbg.unc.edu/native-plant-sale

SATURDAY, APRIL 29, 3-7 P.M.



SHRUBS

Plant: Florida Azalea (*Rhododendron austrinum*)

This medium-sized deciduous shrub blooms in early spring with golden flowers that attract hummingbirds and butterflies. Each April, the Florida Azalea in front of the Totten Center of the North Carolina Botanical Garden bursts with life, as peachy flower clusters and a delightful fragrance overtake the bush. The undemanding and tough nature of this Azalea makes it a great choice for gardens in its native habitat, the deep South.

Florida Azalea



Not: Autumn Olive (*Elaeagnus umbellata*)

The Autumn Olive has distinct silver scales on its lower leaf surface, blooms in early spring and develops pink to red berries. The ability of the Autumn Olive to manufacture its own nitrogen fertilizer allows it to grow up to 20 feet tall – even in poor soil. The shrub's positive attributes are strongly outweighed by its devastating ability to wreak havoc on our native plant communities and wildlife.

Autumn Olive



Photo by Leslie J. Mehrhoff,
University of Connecticut, Bugwood.org

VINES

Plant: Climbing Hydrangea (*Decumaria barbara*)

This woody vine, also known as “Woodvamp,” makes a great addition to any yard. Its fragrant white flowers and glossy leaves long to adorn the corner of a house or trellis. Gardeners love this vine because it does not need a lot of care and attracts butterflies and bees.

Climbing Hydrangea



Plant: Passion Flower (*Passiflora incarnata*)

This unique vine goes by many names including Maypop Herb and Passion Vine. Despite its exotic looking flowers, the Passion Flower is native to the Southeast. Its drought tolerant and pest resistant qualities make it suitable for many landscapes.

Passion Flower



Not: Porcelainberry (*Ampelopsis brevipedunculata*)

Look up to the tree tops of your local nature preserve and you will likely see Porcelainberry vines cascading over the ends of tree branches. Though it resembles a grape vine, this woody perennial threatens a tree's ability to survive by stealing the light and health of its branches.

Porcelainberry



Photo by Tom Eamhardt

Plant: Carolina Jessamine (*Gelsemium sempervirens*)

The Carolina Jessamine remains very popular in the Southeast, and for good reason. It is easy to grow and produces elegant yellow flowers. This evergreen vine also resists disease, insects and deer.

Carolina Jessamine



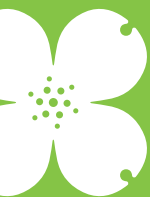
Not: Japanese Honeysuckle (*Lonicera japonica*)

Honeysuckles are a garden favorite for their delicate flowers and heavenly fragrance. However, this vine requires constant attention or it will become a pest and climb anything nearby. Coral Honeysuckle (*Lonicera sempervirens*) is a lovely native alternative.

Japanese Honeysuckle



Photo by Tom Eamhardt



Be PlantWise

BY EMILY OGLESBY

Invasive plants are no strangers to a home garden – many were intentionally introduced to serve as ornamental garden plants. A number of common invasive plants in North Carolina were brought first to England in the 19th century via tea trade routes to decorate the gardens of the upper classes; Chinese wisteria (*Wisteria sinensis*) arrived in England on an East India Company ship, and Japanese Honeysuckle (*Lonicera japonica*) was brought to London from China by a collector for Kew Gardens. At the 1876 Philadelphia Centennial Exhibition, kudzu (*Pueraria montana* var. *lobata*) was introduced to the American public as an attractive shade producer

for porches. (Much of kudzu's current spread is due to efforts to prevent soil erosion in the 1930s and 1940s – Civilian Conservation Corps workers were paid to plant over three million acres of kudzu across the southeastern U.S.) Some invasives did arrive by accident – Japanese stiltgrass (*Microstegium vimineum*) was a common packing material for porcelain, and its first appearance in the wild in the U.S. (1918) probably resulted from the discarding of old packing material.

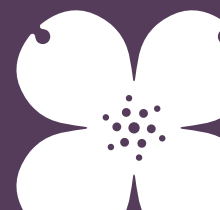
The problem is that invasive plants disrupt millennia-long cooperative relationships within ecosystems. When an

invasive plant takes hold, it competes with native species for resources; when native plants lose out, the resulting decrease in plant diversity triggers a chain reaction that affects all parts of an environment, from water quality to animal health. Not only do invasive plants profit from adaptations that allow them to spread rapidly and survive difficult conditions, some can also make life impossible for the plants around them by, for example, developing dense root systems capable of smothering the roots of nearby plants or by changing the very chemical nature of their environment. Japanese stiltgrass, now common across North Carolina, can elevate the pH of the soil and

REMOVING INVASIVES

**Do you have a space filled with invaders, but don't know what to do?
Consult our Controlling Invasive Plants booklet! Find it online:**

NCBG.UNC.EDU/UPLOADS/FILES/CONTROLLINGBOOKLET.PDF



“The good news is that there are concrete steps you can take in your own yard to remove and prevent the spread of invasive plants.”

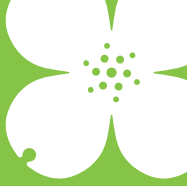
alter nutrient availability to a degree that interferes with native plants' ability to seed and grow. Unfortunately, Japanese stiltgrass is not consumed by any native organisms, and its seeds (thousands per plant) can persist in soil for up to five years after the plant has been pulled up. Other invasives are harmful to human and animal health—the sap of English ivy (*Hedera helix*), a long popular groundcover choice, contains chemicals that may cause an allergic reaction in humans (rashes and blisters on the skin) and the leaves contain compounds that are toxic to animals who unwittingly consume them. And our native deciduous trees are not built to hold leaves year-round; the weight English ivy adds to them increases the risk of dangerous falling limbs.

The good news is there are concrete steps you can take in your own yard to remove and prevent the spread of invasive plants. See the sidebars for more information.

**UNC students remove
invasive plants from Battle Park**



PLANTWISE GUIDELINES



1. Know your plants. Find out which plants cause problems in parks or natural areas in your region to know which species to avoid.
2. Use non-invasive alternatives. Ask a nursery about non-invasive plant alternatives. Native plants often have similar characteristics to invasives without the damaging ecological side effects.
3. Watch out for invasive plant hitchhikers. Check clothes, belongings and vehicles for seeds and pieces of plants that attach and drop somewhere new.
4. Have a care if you share. Many invasive plants move around because they are attractive garden plants. Do not share cuttings, seedlings or plants that are invasive with neighbors and friends.
5. Use only seed mixes that are invasive plant-free. Check the ingredients of seed mixes to make sure invasive plants are not included. Buy seed mixes from reputable sources that guarantee the purity and content of their seed. Take your regional native plant list with you when you buy the mix.
6. Use weed-free soil and mulch mix. Some invasive plants are introduced because they were contaminants in landfill soil and mulch mixes. Purchase from reputable manufacturers that guarantee the purity or weed-free content of their soil and mulch mixes. Look for a tag that says “Certified weed-free.”
7. Be especially careful with aquatic plants. Don't just dump them! Invasive aquatic plants are often introduced as attractive water garden and aquarium decorations.
8. Keep an eye on new sprouts and volunteers. Invasive plants can come from anywhere and spread very quickly. Some make attractive additions to our gardens but can spread very quickly by producing lots of seedlings. Control your invasive garden plants by handpulling or mowing unwanted seedlings to prevent them from growing to maturity. Be aware of what is coming up in your yard and take care to control these new invasives.
9. Dispose of invasive plants carefully. When disposing of invasive plant material consider whether there are any seeds, fruits or cuttings that could re-sprout. At a minimum, bag these materials to help prevent their spread. If it is permitted in your area and can be safely done, consider burning the plant material.
10. If you can't part with your invasive plant, remember – contain it, control it or cage it. Please be responsible. If you have a plant in your garden that has invasive tendencies, take special steps to keep it in your garden such as inserting root barriers, trimming regularly or harvesting fruits or seeds before they are spread.

This list is made available by Be PlantWise, a partnership between the National Park Service, the Lady Bird Johnson Wildflower Center, The Garden Club of America, National Invasive Species Council and many others to reduce invasive plants in the urban landscape.

Meet the Wildflower of the Year

BY HEATHER SUMMER, NCBG SEED PROGRAM COORDINATOR

Hollow-stem joe-pye-weed, *Eutrochium fistulosum*, is a striking native perennial that refuses to go unnoticed or be overlooked. Formerly known as *Eupatorium fistulosum*, hollow-stem joe-pye-weed is a stately member of the sunflower family (Asteraceae) that occurs throughout the eastern and south central United States. In the wild, it can be found in moist woods, meadows, bogs and marshes, but it is also commonly seen in roadside ditches. It thrives in sites with full to filtered sunlight and average to wet soil. As its name implies, hollow-stem joe-pye-weed has hollow, smooth stems that distinguish it from other species of joe-pye-weed, such as spotted joe-pye-weed (*E. maculatum*) and purple-node joe-pye-weed (*E. purpureum*). Its leaves are large but fairly narrow and are arranged in whorls of three to seven at nodes along the stem, with five leaves per node being typical.

Beginning in mid-summer and lasting into early fall, hollow-stem joe-pye-weed comes into full glory with dramatic clouds of large domed flower heads, each one composed of numerous tiny mauve-pink flowers. The nectar-rich flowers of this species are pollinator magnets, attracting multitudes of butterflies, bees, wasps and other nectar-feeding insects. It seems to be a favorite of the swallowtail butterflies and it is not uncommon to see at least a dozen tiger swallowtails feeding together at the same time on one clump.

Hollow-stem joe-pye-weed is not for the faint of heart. It can grow up to eight feet tall (or taller in soils that stay consistently moist) and although it is not aggressively rhizomatous, it can eventually form large clumps up to four feet wide. Nevertheless, don't let its impressive stature deter you from

including this magnificent species in your home landscapes. If its towering height is too imposing for your space, it can be cut down halfway in June and it will regrow shorter and bushier.

Whether it is cut back or left to reach great heights, hollow-stem joe-pye-weed can be used as a dramatic focal point in the back of a perennial border or as a structural specimen in a mixed planting with asters (*Sympyotrichum* spp.), tickseed (*Coreopsis* spp.), beebalm (*Monarda* spp.) and rough-leaf goldenrod (*Solidago rugosa*). It is also appropriate for use in rain gardens or along pond margins and is a "must have" in any pollinator garden.



Simone Spitzer (left) with another Carolina Campus Community Garden volunteer, developing their brown thumbs by working in the compost.



Brown Thumb, Green Heart

BY SIMONE SPITZER, VOLUNTEER

I have a brown thumb. It's a burnt umber thumb, flecked with sepia and ebony and the occasional spot of beige. Hours of holding a grimy plastic shovel have worn calluses into my thumb, mementos of time spent chopping watermelon rinds and past-their-prime pumpkins into pieces. Dirt and grime perennially coat my thumbnail, fragments of partially decomposed food scraps that slipped through holes in my gardening gloves. It's these particles of soil caught in my nails, these calluses on my skin that speak to the essence of my thumb itself—not just a brown thumb, but a compost thumb.

The first few times I volunteered at the Carolina Campus Community Garden, the heaving piles of dark brown compost seemed too intimidating to approach. The regular composters appeared much more qualified than I to keep the compost running smoothly. But every day that I returned to the garden, I watched the composters grab their shovels and take on the mounds of dirt. What magic did they work to transform the barrel of donated food scraps—vibrantly colorful, but nonetheless no more than trash—into nutrient-rich soil fit for growing plants? One short-staffed afternoon, I resolved to find out.

“It takes a certain kind of person to love composting,” the resident composting expert told me as he

handed me a shovel. I never doubted his words. After that first day, I was always the first to volunteer for compost duty, drawn to the dirt and sweat, the comfortingly repetitive shoveling and chopping, the newfound understanding of the composting process.

In those two hours every Sunday afternoon, I learned more than just the basics of composting. I discovered the difficulty of the appellate process and learned about the legal system from a criminal defense lawyer, heard about the research of a student who spent the summer in the Galapagos and got a glimpse into the studies of undergraduates majoring in areas from biology to political science. My fellow composters and I debated the ethics of vegetarianism, discussed the theory behind capital punishment and, of course, told corny jokes, all while chopping food scraps in the late afternoon sun.

On some busy spring days, I led composting teams of new volunteers, passing on the knowledge once passed on to me. Some cold winter days, volunteers few and far between, I tackled the decaying matter alone. As the weeks passed, I watched decaying food scraps break down, forming a healthy soil from which new vegetables bloomed. These food scraps are not waste but rather the foundation for growth. They hold one of the keys

to sustainability in the elements bound to their amino acids and carbohydrate chains, nutrients that, if sent to the landfill, become inaccessible for living creatures. I compost because it's a way to leave a mark on the world by making less of one. It offers a solution to the cringing guilt I face when forced to throw away moldy bread or overripe plums. And I compost because of the smiles and appreciation on the faces of the UNC housekeepers as they pick up their free, fresh produce grown in the garden's compost-filled soil.

In the year and a half since I started spending my Sunday afternoons at the garden, the influence of my brown thumb has only expanded. Amidst the family pictures tacked to our refrigerator a new sign stands out, describing in bold letters what can and cannot be composted. A bag of food scraps bides its time in the freezer, waiting for me to carry it up to the garden. My persistent nagging of my family about recycling has expanded to include reminders to compost, too. Until we can eliminate the production of unnecessary waste, I want to make composting just as ubiquitous as recycling, so that we can inch ever closer towards a sustainable relationship with our world. Although my thumb may be brown, my heart and mind are green.



If you would like to speak with someone about making a special gift to the Garden, call Charlotte Jones-Roe at 919-962-9458 or UNC's gift planning experts at 800-994-8803.

Thoughtful Planning Benefits Garden

BY CHARLOTTE JONES-ROE, DIRECTOR OF DEVELOPMENT

Since its earliest days, the Garden has benefitted greatly from the generosity and thoughtful planning of our members. Planned gifts accounted for much of our fundraising income last year and made it possible for the Garden to continue its work and move forward.

- Former Botanical Garden Foundation board member Sandy McClamroch provided a generous gift for the general support of the Garden through his trust.
- Page I. Fisher, NCBG volunteer, included the Botanical Garden in her estate plan.
- An annuity trust established by Julia E. Irwin listed NCBG at the encouragement of her daughter, botanist Julie Irwin, more than eight years ago. Distributions from Ms. Irwin's generous gift will continue to provide annual income for the Garden for four more years.
- Barbara Roth helped defend the Mason Farm Biological Reserve from a highway three decades ago, and she wanted to make sure the Biological Reserve on the old Mason Farm would always have the care it needs. Barbara's gift nearly doubled the basis of the permanent endowment that generates income each year to help pay staff and interns to care for the Mason Farm Biological Reserve.
- Wildflower advocate Alice Zawadzki included the Garden as a beneficiary of the sale of her home in Raleigh.
- Becky Leager, who worked with the Plant Rescue Volunteers years ago, left a bequest for general support of the Garden.
- Mary Coker Joslin and her husband Bill made plans for an annuity trust many years ago. After Mary's passing last summer, transfer of the remaining funds increased the Coker Arboretum Endowment basis significantly, added to the building fund for the UNC Herbarium and provided much-needed general support for use at the discretion of the director of the North Carolina Botanical Garden.

On behalf of all who work at the Garden and all who want to see our Conservation Garden succeed, we express profound gratitude for the contributions of our members who not only served the Garden during their lifetimes but planned ahead to provide generous support and make the Garden part of their legacy.



IN THE GARDEN SHOP

NCBG baseball caps

Shield your eyes from the summer sun with a stylish NCBG ball cap! From caps to sweatshirts, we have a variety of items featuring our new logo for sale!

\$18.50





Gifts Grow Greenhouse

BY CHARLOTTE JONES-ROE, DIRECTOR OF DEVELOPMENT

Thanks to the generosity of two volunteers, the Garden has a new greenhouse. You might not have noticed, though, because the new greenhouse is on the exact footprint of the previous one. We are excited about the opportunities this modern greenhouse will bring to the Garden.

Last fall, staff members, work study students and volunteers removed the old greenhouse structure, recycling a large portion of the metal, wire and plastic. The new greenhouse was in place in time to shelter tender plants from the cold winds of winter.

Supplied and built by the Greenhouse Company of South Carolina, the new house has a gutter connect design so that additional greenhouses can be

added to it in the future. It is nearly 2,000 square feet, and its side walls are made of clear, long-lasting polycarbonate. The rounded top is covered with clear, polyethylene plastic, doubled and inflated to provide additional insulation.

An improved greenhouse has been on the wishlist for a long time, but the cost was simply not in the Garden's budget. Loyal NCBG volunteers Cindy Cook and Marcella Grendler combined their resources to allow nursery manager Matt Gocke and the Garden's horticulture staff to plan for their needs and place the order.

Long time Garden supporters Cindy and Tom Cook stepped up to make the first gift. Marcella Grendler and her husband Paul, who have also supported NCBG

in countless ways, matched the Cook's gift and the plan was solidified. Just last fall, Marcella also provided funds for the purchase of two large wishlist items for the conservation department: a Kawasaki Mule all-terrain vehicle to help with controlled burns and management of remote sites, and a riding lawn mower to keep the meadows and pathways open at Penny's Bend Nature Preserve.

We are grateful to Cindy and Marcella and all of our volunteers for giving of their time and providing resources to help staff accomplish the work of the Garden.



THANK YOU!

We appreciate all memberships and additional gifts to the Garden!
Tribute Gifts received in the period from August 10, 2016 to February 8, 2017.

IN HONOR OF

Sylvia S. Attkisson

Linda Lynch and Cliff Butler,
for Director's Fund

Mr. and Mrs. Gerald Bell

Wood and Catharine Burns

Melissa McComb Cain

Kim and James Goff,
for Coker Arboretum Endowment

Victoria Searcy Castor

Dreema and Keith Brunnemar
Victoria Ann Castor
Missy and Sam Rankin

Munroe and Becky Cobey

Mary B. Todd,
for The Jim Todd Living Plant Fund

Laura Cotterman

Elizabeth Peel and David J. Solow

Arthur and Mignon DeBerry

Eleanor H. Lambe

Grace, Kara and Michael Dodge

Priscilla and John Dodge,
for Friends of UNC Herbarium Fund

Patrick Dougherty

Lynn K. Knauff

Muriel Y Easterling

Mary B. Bowers, for Director's Fund

Lutte L. Erwin

Gene Liau and Adaline C. Smith,
for Conservation Fund

Ken and Laura Frazier

Susan and Steve Skolsky,
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Julia H. Gaskell

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Anonymous, for Director's Fund

Mr. and Mrs. G. Boyd Grieb

Kay and J.D. Hobart

Stirling and Sara Haig

Wood and Catharine Burns

Tom and Kathie Heffner

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Debbie Hill

Lynn and Carolyn Ikenberry,
for Battle Park Endowment

Bo Howes

Mary Cook Howes

Mary Cook Howes

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David and Martin Jenkins,
for Educational Outreach

Skip Kauffman

Jessie C. Howington,
for Natural Areas Endowment

Thomas S. Kenan III

For Director's Fund
Frederick and Kelly Hopkins
Alice and George Horton
Graham and Dana Lacy
Mary Ann Maxwell
Shannon and Alan Stephenson

Fred O. and Mary W. Kiger

Fred W. Kiger, for Battle Park Endowment

Edgar and Nan Lawton

Ione and John Lee,
for Coker Arboretum Endowment

Jay E. Leutze

Wood and Catharine Burns

C. Townsend and Harriet Ludington

Wood and Catharine Burns

Margo MacIntyre

Mark and Jane Ritchie,
for Coker Arboretum Endowment

Harriet Wall Martin

Kathryn E. Bell
Anonymous, for Director's Fund
Priscilla P. Taylor, for Director's Fund

Harriet and D.G. Martin

Wood and Catharine Burns
Stephen and Frances Porter
Louise and Grier Martin, for Educational
Outreach and in honor of their 50th
Wedding Anniversary

Sydnee Matheny

Paige C. Moody

Thad and Coolie Monroe

Wood and Catharine Burns

Ken Moore

Charlotte Jones-Roe and Chuck Roe, for
General Operating Fund Endowment
Frances M. Allen, for Director's Fund

Nell Hatley Morton

Libba and Jim Wells

Scottie Neill

Mary M. Dudley

Florence F. Peacock

Anonymous, for Director's Fund
Shannon and Alan Stephenson, for
Director's Fund

Pinopolis, South Carolina

--the city where I learned to love
wildflowers
Elizabeth R. Byrd

Ed and Nancy Preston

Wood and Catharine Burns

John and Elizabeth Pringle

Wood and Catharine Burns

Johnny Randall

Charles and Pat Thompson,
for Conservation Fund

Bill Ross and Susan Gravely Ross

Charlotte Timberlake Battle,
for Battle Park Endowment

Barbara F. Schutz

Wood and Catharine Burns

Tom and Margaret Scott

Abbie Royster

Blaine and Susan Short

Anne Loustau,
for Friends of UNC Herbarium

Katie Stoudemire

For Wonder Connection
Florence and Joe Chaffin
Jordan and Sarah Gatenby

Susan Trout

For Wonder Connection
Jill M. DeMatteis
Jay Radford, from the Not So Normal 5K
Barbara J. Silver
Richard and Mary Trout

Sally Couch Vilas

Lawrence M. Fleishman

Jim Ward

Gretchen and Arthur Aylsworth

Dot Wilbur-Brooks

C. L. and Nell Morton
Frances Allen, for Director's Fund

Roy Williams

R. M. Childs

IN MEMORY OF

Sally Dutton Anderson

Elizabeth Dutton, for Wonder Connection

Louise Behrman

Anne Fleishel Harris

Jack and Louise Behrman

Leslie E. Skipper and Family,
for Forest Theater Fund

C. Ritchie Bell

Laurence J. Dorr
William E. Kirkland

Michael Kalen Berkut

Clarence E. Whitefield

Marilyn Strohkorb Bilpuch

Clarence E. Whitefield

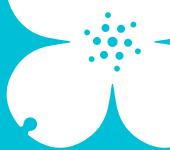


**SAVING
OUR
SEEDS**

Coming this fall...*Saving Our Seeds: A Journey through Natural and Cultural History*, an exhibit to create an understanding of and appreciation for the importance of seeds through science, culture and conservation.

AUGUST - DECEMBER 2017



**Melinda Kellner Brock**

For Melinda Kellner Brock Terrace
Katherine M. Walters
Suzanne and Daniel Weintraub

Mary Jane Burns

Wood and Catharine Burns,
for Conservation Fund

Cordelia Penn Cannon

Cordelia and
W. Chandler Thompson

Connie Chaffin

Alvis and Susan Bynum,
for Wonder Connection

Kuang Lin Chen

David Y. Huang and Hsiupeu Chen

Robert Martin Coker

Judith C. Coker, for Coker
Arboretum Endowment

Evelyn Dillon Coleman

Susan E. Pittman
Rosemary Stannett Royce

Elaine Young Cook

Elizabethine Gentner

Gretchen Cozart

Lacy and Sydnor Presnell

William C. Dickison

Robert D. Henry

Janice Jurczak Evans

Kurt M. Evans,
for Coker Arboretum Endowment

Alvera Morrison Henley

Frauenheim
Charlotte Jones-Roe and Chuck Roe

James B. French

Patricia A. French

Robert K. Gardner

Laura and Vann Evans
Nancy Doubrava, for Conservation
Fund

Amy Gitelman

Honore F. Gitelman

Sarah L. Greene

Sally Greene and Paul Jones

Victor A. Greulich

Susah G. Scharff

Robert P. Gruninger

Sharon K. Gruninger

Emma Anderson Hamill

Frances Gray Warren

Andrew C. Henley

Elena G. Elms,
for Coker Arboretum Endowment

Evelyn Morgan Hines

Mary L. Dexter

Sam Hitt

Maria K. Hitt, for Youth and Family
Education Programs

Lucinda Holderness

Angela and Gary Hill
Harriet and D.G. Martin
William C. Coker Garden Club

Michael Kenneth Hooker

Carmen Hooker Odum

Frederick Johnston Houk, Jr

For the Fred and Virginia Houk
Sustainability Internship Fund
Nancy and Thomas Cheurning
Virginia S. Houk

Jonathan Howes

Mary Cook Howes

Hazel Estes Hunt

John and Marcia Thomas

Mary R. Ishaq

Frances M. Allen, for Botanical
Garden Library, Conservation
Fund, Horticulture Fund

Norman Kane

Staples and Thomasin Hughes

Margaret "Meg" Graham Kemper

Terri L. Phoenix,
for Conservation Fund

Rebecca "Becky" N. Leager

Charlotte Jones-Roe and Chuck Roe

Richard I. "Dick" Levin

Clarence E. Whitefield

Barbara Masson

D. Barry and Deborah Moore
Nancy and James Allred
Eunice Brock
Probus Club of Lake Norman

Andrew "Andy" Clark Mathews

Anne and Royce Sayer

Kathryn Charles McCoy

Ken Moore and Kathy Buck
Doodletown Farm LLC,
for Conservation Fund

Richard D. McCulloch

Karen L. McCulloch

Scotty McLean

David L. Robert,
for Battle Park

Todd A. Meier, UNC '90

Jay and Sharon Dinsmore

Carol L. Miller

Cyrus L. Miller
Clay Miller, for Living Plant Fund

James Moulder

Harriet H. Moulder

Grover Elmer Murray

Sally M. Murray,
for Botanical Garden Library

Kimiko Nakayama

Henry Grossberg,
for Battle Park Fund

Arline Olsen

Elise Olsen

William Stevens Powell

Virginia W. Powell

George and Mary Pyne

Milo Pyne and Alexa McKerrrow

Laurie and Albert Radford

David and Jean Radford

John Lewis Randall, Sr.

Joseph and Billie Puckett
Charlotte Jones-Roe and Chuck
Roe, for Conservation Fund

Hank and Renate Rodenburg

Meadowmont Garden Club
Dorothy and Neely McLaughlin

Anne McBride Smith

Mary and Timothy Smith,
for Coker Arboretum Endowment

Thomas A. Sharp

Tyrrell C. Sharp

Lisa Soong

Martha A. Propst

Jean and Pearson Stewart

Barbara and Lawrence Rowan

Barbara Louis Stiles

For Battle Park Interns
Stanley Koonce and
Alene Thorton-Koonce
Faye and Roy Martin
Bernice S. Wade

For Battle Park Endowment

Lars G. Schoultz and Jane Volland
Anne R. Wade

George Alan Stoudemire

Sylvia S. Wallace,
for Wonder Connection

Don Tiedeman

Mary J. Pringle
Jane and Jim Dean,
for Director's Fund

Page Vernon

Jim W. Vernon

Jane Carter Walker

Richard I. Walker

John W. Weil

Anna B. Weil

Anne Louise Dutton Wharton

Elizabeth Dutton,
for Wonder Connection

David Whittington

Kathryn and Peter Enchelmayer,
for Battle Park Endowment

Penne Wilson

For Art and Educational Exhibits
Glenda Parker Jones
Joanne Lott

Pauline Marion Worthy

Ford and Allison Worthy

MARK YOUR CALENDAR

April 2
Evelyn McNeill Sims Lecture
featuring Lisa Wagner

April 29
Spring Plant Sale

June 3
Carolina Moonlight Garden Party

September 16
**Sculpture in the Garden
Preview Party**

September 23
Discovering Magic in the Garden

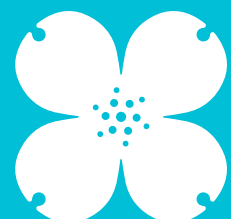
September 29 & 30
Fall Plant Sale

October 27
Boo-tanical

November 5
Jenny Elder Fitch Lecture
featuring Teri Chace

December 8-10
Holiday Festival

For more information:
ncbg.unc.edu/2017-events



North Carolina Botanical Garden

The University of North Carolina
Campus Box 3375
Chapel Hill, NC 27599-3375
Phone: 919-962-0522
ncbg.unc.edu · ncbg@unc.edu

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