



NORTH CAROLINA
BOTANICAL
GARDEN

CONSERVATION GARDENER

SPRING & SUMMER 2020
\$4.95



THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

ON THE COVER

Aquilegia canadensis

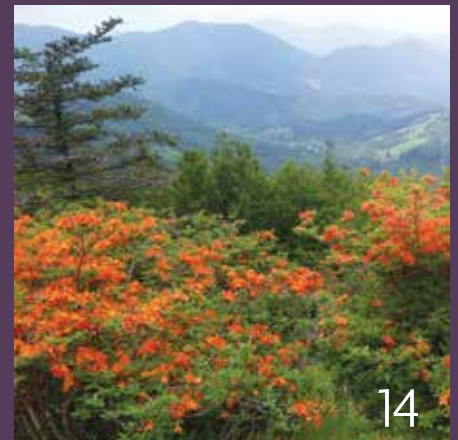
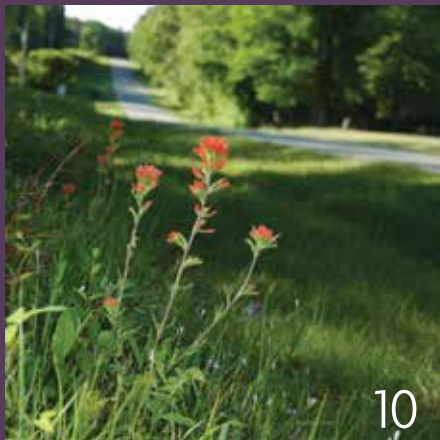
Eastern columbine

Illustration by Dot Wilbur-Brooks



IN THIS ISSUE

Wildflower of the Year 5 Adapting to Climate Change 6
Roadsides 10 Staff Pick: Pitcher Plants 13
Wildflower Hotspots 14
Perfect Pairs 16 Nature Prescription 18



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

Where are all the flying cars?

BY DAMON WAITT, NCBG DIRECTOR

Dear Members and Friends,

On my fourteenth birthday, my parents gave me a subscription to Popular Science. They knew I had a fascination with mechanical things. Each month I waited with anticipation to see what the next issue had in store. Would it be a sleek bullet train, a solar-powered house, a personal jetpack? What innovative ways would be proposed to solve the world's ecological problems... oil-eating bacteria, geo-thermal wells, wind farms? Often as not, the cover featured a prototype of some new invention that would improve the human condition or change the way humans interacted with the natural world. In my mind, Popular Science was the promise of things to come, what my adult life held in store - a world with flying cars.

Fast forward to 2020. We are in the thick of the promised technological

revolution. And though cars are linked to satellites and can drive themselves, they still don't fly.

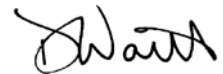
I, like many people, grew up believing in flying cars and the ability of science to fix whatever parts of nature had become damaged or broken. Unfortunately, the technological revolution was informational, not ecological. My unquestioning faith that technology would solve our ecological problems has, itself, become damaged and broken.

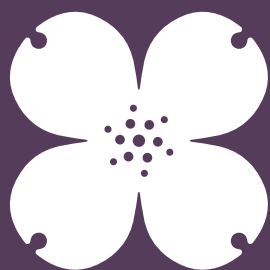
Pictured on the cover of this issue of Conservation Gardener is a machine that takes the main greenhouse gas out of the atmosphere and locks it away where it won't cause any problems. The machine is fueled by the most abundant molecule on the planet and a near endless source of solar energy.

In the process, the machine produces life-giving oxygen and simple sugars that serve as the foundation of the food chain. Our feature story is about what this machine can do in your home garden to reduce the impacts of climate change. I think about the benefits these strategies have on preserving biodiversity and survey the ecosystem outside my front door. Like a well-oiled machine, my native plant garden is at work providing ecosystem services in the natural economy. A glance at the rainwater harvesting gauge reveals enough water has been collected to meet the needs of the biological community for several months.

I grab the hose, open the hood, and replenish the fuel cells on my flying car.

Sincerely Yours,





NORTH CAROLINA
BOTANICAL
GARDEN

North Carolina Botanical Garden

DAMON WAITT *Director*

LISA HICKS *Business Office*

STEPHEN KEITH *Development*

JOANNA MASSEY LELEKACS *Education*

JOHNNY RANDALL *Conservation*

DAN STERN *Horticulture*

ALAN WEAKLEY *Herbarium*

North Carolina Botanical Garden Foundation Officers

ANNE HARRIS *President*

SIMS PRESTON *Vice President*

NATHAN BYRD *Treasurer*

JENNY ROUTH *Secretary*

Conservation Gardener

JENNIFER PETERSON *Managing Editor*



Our new educational exhibit, *Saving Our Wildflowers*, is focused on the importance of wildflowers to our ecosystem.

Year of the Wildflower

BY JENNIFER PETERSON, MANAGING EDITOR

This year, the Garden is advocating for our native wildflowers through a yearlong celebration we're calling Year of the Wildflower. We're offering educational exhibits, lectures, art, classes, field trips, and so much more.

As we started to prepare for this year, we discussed what parts of the work we do at the Garden could be highlighted through this theme. Unsurprisingly, this theme encompasses much of what we do: research, conservation, horticultural display, and education.

Needless to say, it was not difficult to find content for this first of two editions of the *Conservation Gardener* centered on wildflowers. I can assure you, we still have a lot to share in the fall.

As always, one goal of this magazine is to offer ways you, the home gardener,

can make a difference in your own garden. This edition will not disappoint. It is packed with information you can use, including articles about gardening in the face of climate change (p. 6), encouraging prairie plants in your yard or roadside (p. 10), places you can visit amazing wildflowers here in North Carolina (p. 14), and more.

We are also excited to announce our new podcast *Plant Power*. Through this six-episode series, we'll explore native plants and their connection with our changing climate. Read more about it on page 19.

Please join us in celebrating wildflowers this year! I hope to see you at the Garden!

MEMBERS

**SEED
PACK**

As a member, you are entitled to eight free seed packets! Learn about our Members' Seed Pack and order your seeds at:

NCBG.UNC.EDU/SEEDPACK



Meet the 2020 Wildflower of the Year

BY HEATHER SUMMER, NCBG COLLECTIONS MANAGER & SEED PROGRAM COORDINATOR

The 2020 North Carolina Wildflower of the Year, marsh-pink (*Sabatia angularis*), is native to the eastern and southern United States, and it can be found growing in low, moist edges of open woods, as well as prairies, roadsides, meadows, and marshes. This stunning biennial in the gentian family (Gentianaceae) is also known as rose gentian, rose pink, or bitter-bloom.

Perhaps our favorite feature of marsh-pink is the deep rich pink of its flowers. From mid to late summer, they mass in loose clusters atop 1-2' tall, four-angled stems. At first glance from a moving vehicle, roadside populations appear as a quick flash of color. Stopping for a closer look reveals a spectacular summer floral display. Upon even closer inspection, each five-petaled, star-shaped flower is strikingly beautiful, with a greenish-yellow center outlined in red. The flowers of marsh-pink lack nectar, but they do provide a pollen reward to various species of bees.

There are many historic accounts of marsh-pink being used medicinally

in North America. Reportedly, a leaf tonic was used to treat indigestion and promote appetite, and the Cherokee drank marsh-pink infused tea to treat malaria. There are even accounts that the medicinal use of this species aided in reducing fever during the 1793 yellow fever outbreak in Philadelphia. One of this species' common names, bitter-bloom, refers to the bitter foliage that is reportedly unpalatable to browsing mammals.

Marsh-pink grows best in moist soil in full to partial sun. It is rarely offered in nurseries because of its biennial habit. It seemingly disappears in years of drought, only to reappear in an apparent population explosion during years of plentiful rainfall. As a biennial, it will overwinter in its first year as a dense, leafy basal rosette and then bloom, set seed, and die the following year. The tiny seeds are wind-dispersed and will self-seed in the garden. The secret to success with reseeding annuals and biennials is to leave enough open space in the garden to allow them to find room to re-establish

each year. Marsh-pink would bring a vibrant splash of color to a backyard bog garden but would also be happy if given its own open spot in a sunny, moist perennial bed.

The North Carolina Botanical Garden and the Garden Club of North Carolina work together to promote the use of native plants in home gardens. Each year since 1982, a showy native perennial has been chosen and seeds of that wildflower are distributed to interested gardeners. To view a list of the past North Carolina Wildflowers of the Year, visit the Garden's website under the Plants tab.

For a Wildflower of the Year brochure and packet of marsh-pink seeds, send a stamped, self-addressed, business envelope with attention to NCWFOY 2020 to North Carolina Botanical Garden, UNC-Chapel Hill, CB 3375, Chapel Hill, NC 27599-3375.





Adapting to Climate Change in Your Home Garden

BY CATHERINE BOLLINGER

Most gardeners in the Southeast agree their gardens are changing, and the pace of those changes is quickening with each passing year. Shifts in temperature averages and rainfall regimes will determine which plants can survive in our changing climate – and which cannot.

Temperature changes – Average highs and lows are rising in the southeastern United States. Thirty years ago, most of North Carolina was in plant hardiness zone 7. Now most of the state is considered zone 8, meaning average winter lows are ten degrees higher. Our nighttime lows in summer are also higher, and we're experiencing record-setting strings of 100°-plus days. These changes in temperature regimes create stress on garden plants that evolved with lower nighttime temperatures, especially vegetable and non-native ornamental plants.

Rainfall changes – In the last decade, our region has experienced two 500-year flood events as hurricanes lingered overhead and rained for days. Higher temperature trends mean these periods of overabundant rain are often followed by prolonged summer droughts. Municipal water restrictions during droughts make watering difficult, and we can't do much of anything for our plants during periods of overabundant rain.

Increasing Challenges

Changes in temperature and water regimes challenge our garden plants in a number ways:

- Bloom times are changing. As spring temperatures arrive earlier in the year, they trigger blooming in many plants. Insect species may also emerge early. These timing disruptions can create a disconnect between the insects and plants that rely on each other to complete their life

cycles. Hummingbirds that migrate based on daylight length instead of temperature may miss flowers they expect to find. Caterpillars may emerge before the birds that eat them arrive, leading to starving nestlings.

- Diseases and pest species inflict more damage to plants already stressed by rising temperatures and too much or too little water. Fungal diseases thrive during prolonged warm, wet weather. This is an especially big issue for vegetable growers, but it also affects ornamental plants such as roses and lawn grasses.



Buy locally grown plants - they are best adapted to your area. Find a variety of locally grown native plants at the Garden's plant sales.

- Plants that require six weeks or more of uninterrupted winter temperatures may fail to set flower buds or produce altered blooms without expected cold spells. For example, non-native tulip bulbs often produce shortened stems or fail to bloom altogether if they aren't exposed to adequate winter cold.
- Roses and other ornamentals in protected urban gardens may not go fully dormant during mild winters; then a late freeze kills their premature tender spring growth. Even native plants can break dormancy during January days with April temperatures, making species from canopy giants to shrubs leaf out or bloom before the threat of late freezes is past. One year in my yard, every canopy tree had pushed out new leaves by late February and then a March hard freeze killed all the new growth. The trees did not produce new leaves that year until almost June. In mid-January of this year, after three weeks of significantly above-normal temperatures, the Catawba rhododendrons that grow along Morgan Creek on North Carolina Botanical Garden property were budding – that typically happens in May.
- Weeds and insect pests now appear earlier in the year. In central North Carolina, mosquitoes and ticks have become a year-round threat. Non-native pest insects such as the brown marmorated stink bug and the kudzu bug can overwinter as adults, giving them a head start on crops earlier in their growing season.
- Changes in temperature and rainfall regimes favor some

invasive species. Last summer, a new invasive plant took over the active floodplain on my land: marsh dayflower (*Murdannia keisak*) overgrew all areas with standing water, creating thick, impenetrable mats of vegetation. This invader, native to Asia, was accidentally introduced in South Carolina in the mid-1930s. As temperatures have risen and flood events have become common, this weed of rice fields has overtaken North Carolina's coastal plain wetlands and is steadily moving inland.

Reducing the Effects of Climate Change in Your Yard and Garden

The good news is there are a number of climate-change-savvy gardening strategies to help you grow healthy, better-adapted plants while reducing use of fertilizers, supplemental water, and gas-guzzling power tools that emit noise and carbon dioxide pollution. All it takes is a re-imagination of our southeastern yards and gardens.

Change what you're growing

- Replace disease- and pest-prone non-native ornamental plants with natives. Higher temperatures and erratic rainfall patterns are hard on non-native ornamental plants such as evergreen azaleas. If you've noticed an uptick in diseases and insect pests on these and other traditional landscape plants, instead of spraying them with fungicides and herbicides, consider replacing them with better-adapted native shrubs. Visit the NCBG website (under the Plants tab) for a list of native shrubs for your garden.
- Eliminate or at least reduce the size of your lawn. Whether your lawn is fescue or a warm-season grass, it is not native, it guzzles resources, it is more prone to disease, and it provides no significant ecological services for native wildlife. We might avert the so-called insect apocalypse – the dramatic downturn in native insect species that are at the base of the food chain – if property owners bring back the native plants that were removed when homes and offices were built. If you can't imagine your life without a lawn, at least reduce water waste by using a smart irrigation system that only waters when the soil is dry.
- Increase plant diversity in your yard. When you grow only a few kinds of plants in your yard, it is easier for diseases and insect pests to find and damage them. Mixed plantings make it harder for pests to flourish.
- Whenever possible, buy locally grown plants. They will be best adapted to your area, and they may have "genetic memories" from a past and possibly similar climate, thereby "pre-adapting" them for climate change. As you add new natives, make sure you remove invasive non-native plants that may be dominating parts of your yard. The NCBG website offers great guidance on how to tackle these ecosystem-destroyers under the Plants tab. When

Left: A variegated fritillary on Indian blanket (*Gaillardia pulchella*). Photo by Catherine Bollinger

choosing new trees and shrubs, pay attention to their temperature range requirements; consider adding more heat- and drought-tolerant species. For example, I've had great success in my pollinator garden with Indian blanket (*Gaillardia pulchella*), a wildflower native to the sand dunes of our coast. This tough sun-lover blooms from spring to hard freeze despite prolonged periods of drought, and it also handled hurricane rainfall.

Change your growing methods

- Grow organically, especially in your vegetable garden. I think organically grown food tastes better, and I enjoy my food much more when I know pesticides and chemical fertilizers haven't touched them. If you don't grow your own vegetables, buy organically grown ones from a local farmers' market.
- Consider increasing plant diversity in your vegetable rows/beds by mixing compatible vegetables, and be sure to interplant plenty of herbs and flowers to encourage visits from pollinators and to confuse pest insects.
- Plant winter cover crops, such as crimson clover, to reduce weeds and enrich soils.
- Protect your crops from excessive sun with shade cloth and from late freezes with protective covers.
- Be vigilant about checking your vegetable garden for pests and diseases. It's easier to avert a pest or disease invasion when you catch it early. The increase in pesticide and herbicide use – not just on crops but also in home and business landscapes – is a major force behind the downturn in insect species. A healthy,



Increasing plant diversity in your yard, as shown in this Edible Campus garden bed, makes it harder for insect pests to find and damage them.

“Now is the time to re-imagine your landscape by planting well-adapted natives that will feed and shelter struggling wildlife.”



SPRING PLANT SALE

Improve the biodiversity in your backyard with native plants from NCBG and other local vendors. Enjoy our food truck village and an environmental fair.
NCBG.UNC.EDU/PLANTSALE

SATURDAY, MAY 2
MEMBERS' MORNING: 10:30 A.M.-NOON
PUBLIC SALE: NOON-4 P.M.



CLIMATE CHANGE AT REGIONAL BOTANICAL GARDENS

A TALE OF TWO GARDENS

We asked the directors of two regional botanical gardens to briefly describe the impacts of climate change on their gardens and how they are responding to those challenges.

Patrick McMillan

Director of the South Carolina Botanical Garden

The collection focus at the SCBG has changed dramatically since it was established. Prior to the 2010s, our collection focus included hydrangeas, hostas, Himalayan hybrid rhododendrons, maples, and camelia. Today, we have been forced to abandon the collection concentrations of rhododendron, hosta, and hydrangea as they are in serious decline due to warm nighttime temperatures during the summer, prolonged droughts, and warmer winter low temperatures. The majority of these collections continued to decline despite our best attempts to keep them hydrated and cool. It would have been difficult for the first directors of this garden to imagine a garden containing over 20 palm species, over 100 agave species and cultivars, and a shift toward Texan species in many of our exhibits. That is the climate we have today and the challenge we must meet today – to garden in the face of a changing climate, to look toward those species that provide a wildlife benefit, ecosystem services, and are resource-neutral and climatically resilient.

Damon Waitt

Director of the North Carolina Botanical Garden

With habitat collections representing the Coastal Plain, Sandhills, Piedmont, and mountain regions of the state, NCBG serves as a living laboratory to study the long-term impact of climate change on the state's native biodiversity. At the same time, our emphasis on native plants adapted to the region offers built-in resilience from the vagaries of near-term climate effects like prolonged drought. Most at risk are the rare plant species with their stringent ecological and habitat requirements. We are working hard to preserve both these and common species in our seed bank to protect against climate-induced extinction in the wild. After escaping the last glaciation by being just south of their advance, the southeastern flora served as the nursery for the post-glacial re-population of northern climes. Time will tell if that favorable latitudinal placement will serve as well when temperatures go in the opposite direction.

diverse native landscape will rarely need such poisons to thrive, even in the face of climate change.

- Create a compost pile and a brush pile. Finished compost is a huge asset to organic gardening and reduces what you send to municipal dumps or through your sewage system. Brush piles provide much-needed habitat for native wildlife, including native pollinators, and they eliminate the need to have brush hauled off to city dumps or chopped up with gas-guzzling chippers.
- Stay informed. Take full advantage of your NCBG membership by enrolling in some of their classes to deepen your understanding of native plants and to learn more about how to care for them. If you're a vegetable gardener, visit the websites of your local agricultural extension agent, where you'll find the latest information on pests and diseases and recommendations for well-suited varieties to grow.

All yards and gardens are opportunities to create landscapes more resilient to the effects of climate change. Now is the time to re-imagine your landscape by planting well-adapted natives that will feed and shelter struggling wildlife and contribute to stabilizing our warming planet.

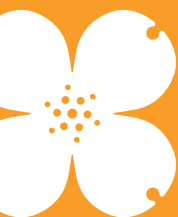


Plant winter cover crops, such as crimson clover, to reduce weeds and enrich soils. Photo by Catherine Bollinger

MEMBERSHIP SURVEY

We want to know what you think! Watch your mailbox in the coming month for information about our membership survey. Follow the instructions on the postcard, and provide us with your feedback.





Roadsides: The Front Yard of the Nation

JOHNNY RANDALL, NCBG DIRECTOR OF CONSERVATION

I borrowed the title of this article from the 1936 book by JM Bennett, who envisioned a nation of manicured roadsides. Generations of roadside managers embraced this concept, and it remains the Department of Transportation standard throughout the Interstate Highway System.

A paradigm shift occurred in the last quarter century with the realization that road verges, the strips of green space on the side of the road, are a primary refuge for the nearly lost Piedmont prairie. This prairie occurred within the greater Piedmont ecoregion that stretches from Maryland to Alabama between the Blue Ridge Mountains and Coastal Plain. Do not picture the Piedmont prairie as a limitless grassland like the Great Plains, but rather an extensive mosaic of open grassland interrupted with extensive savannas where widely scattered trees dotted the landscape. Historical accounts of this vast, prairie-like

landscape contradict the picture many of us were painted of a continuous forest from the coast to the mountains, where it was said a squirrel traveling this distance would never have to touch the ground.

French cartographer Guillaume DeLisle in 1718 labeled much of the North Carolina Piedmont as “Grande Savane,” outlining a vast expanse of open land. Naturalist and surveyor-general of North Carolina John Lawson, in his 1709 book *A New Voyage to Carolina*, wrote, “In February and March the inhabitants have a custom of burning the woods... an annual custom of the Indians in their huntings, of setting the woods on fire many miles in extent.” Around 1763, naturalist Mark Catesby noted in his journal that “There are many spacious tracts of meadow-land...burdened with grass six feet high,” and that “The buffaloes ranged in droves feeding upon the open savannas morning and night.”

Prior to European settlement, fire from lightning strikes, American Indian burning practices, and large mammal grazing shaped the Piedmont landscape. Loss of megafauna, disruption of American Indian culture, and widespread fire suppression caused the Piedmont prairie to contract. Modern farming practices and pervasive human development added to the cascade of unfortunate events for the Piedmont prairie. Ironically, the ever-increasing network of roadsides provided a sunny refuge for these shade-intolerant prairie denizens – also known as heliophytes. For a comprehensive review of the past extent, tragic loss, and resurrection of southern grasslands, please refer to *Forgotten Grasslands of the South* (2013) by Reed Noss.

Take hope! The mid-20th century ushered in an age of ecological enlightenment and recognition of this nearly destroyed Piedmont ecosystem.

No longer does Smokey Bear shout, "Only you can prevent forest fires!" Now, he says, "Only you can prevent wildfires!" – a shift away from widespread fire suppression to wildfire prevention. The National and State Park Services, US Forest Service, The Nature Conservancy, and even the North Carolina Botanical Garden have prescribed burning crews. The NC Plant Conservation Program in the NC Department of Agriculture burns its fire-dependent preserves, and many private land owners hire managers to restore and burn their remnant Piedmont prairies.

Efforts abound across the nation to protect and celebrate roadsides as unappreciated stores of biological diversity and raw beauty. Examples include Southeastern Roadside Defenders, Southeastern Grasslands Initiative, Rights-of-Way as Habitat Working Group, Florida's Roadside Meadow Program, and Georgia Plant Conservation Alliance.

Closer to home, the Piedmont Native Plant iNaturalist site (go.unc.edu/PiedmontPlants) encourages citizen scientists to get out there, and the newly formed Orange County Rights-of-Way Task Force is charged with implementing the various elements of a resolution to adopt best management

"The Piedmont prairie is not a collection of wayside waifs, but the foundation of a nearly lost fundamental ecosystem."

practices to benefit native plants and pollinators. And hot off the press is the Piedmont Prairie Partnership must-watch video at go.unc.edu/PiedmontPrairie.

Although generally narrow and linear, roadsides loaded with native grasses and wildflowers often provide a clue that Piedmont prairie once extended far to the interior of these verges. In some places, the interior landscape continues to express its prairie-like condition thanks to mowing, grazing, or other means of maintaining a more open habitat.

If you do not have a remnant prairie on



SIMS
LECTURE

50 YEARS OF WILDFLOWER CONSERVATION IN NORTH CAROLINA HISTORY AND THE ROAD AHEAD

APRIL 5; 2:30 – 3:30 P.M.

Take a virtual journey through the past 50 years of wildflower conservation in North Carolina, and learn how we can all be advocates for our native wildflowers. Julie Moore will share her experience with the Garden's early role in plant conservation and describe how the Garden and other local organizations continue working to protect our state's rare and unique flora.

This free annual lecture focused on native plants and their conservation and ecology is made possible through a gift in honor of Evelyn McNeill Sims.

DETAILS AT
NCBG.UNC.EDU/SIMS

PIEDMONT PRAIRIE INDICATORS

If you find the following species in an open, perhaps neglected space on your property, you may have remnants of a Piedmont prairie.

native asters

Symphotrichum grandiflorum, *S. concolor* and *S. pilosum*

Blazing Star

Liatris spicata and *L. squarrosa*

Goldenrods

Solidago rugosa, *S. pinetorum* and *S. odora*

Maryland Golden-aster

Chrysopsis mariana

Milkweeds

Asclepias tuberosa and *A. verticillata*

Rosinweed

Silphium compositum

Sunflower

Helianthus atrorubens

Thoroughworts

Eupatorium rotundifolium and *E. hyssopifolium*

Wild quinine

Parthenium integrifolium

Yellow Wild Indigo

Baptisia tinctoria

Giant Plume Grass

Erianthus giganteus

Indian grass

Sorghastrum nutans

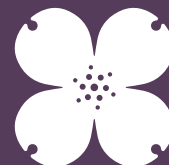
Little bluestem

Schizachyrium scoparium

Splitbeard bluestem

Andropogon ternarius

Refer to the Piedmont Native Plant iNaturalist website for a more comprehensive list and images.
GO.UNC.EDU/PIEDMONTPLANTS



your land but have a reasonably large sunny area, you have potential for this drought tolerant plant community. And it just so happens that the North Carolina Pollinator Toolkit – available at ncbg.unc.edu/plants/pollinator-central/ – provides step-by-step instruction on building a Piedmont prairie in addition to other plant communities that harbor and benefit pollinators.

Resurrecting a Piedmont prairie by properly managing a remnant site or creating one from scratch does not temper the urgency of protecting vulnerable roadside ecosystems. Roadside conservation advocates must continue to celebrate and work to protect these strikingly beautiful stores of biological diversity from improper management and the devastating effects of overzealous herbicide application.

Celebrate our past in this Year of the Wildflower: wander through the Garden's Piedmont prairie habitat garden or get into the weeds on one of the scheduled NCBG tours of the Mason Farm Biological Reserve and the Penny's Bend Nature Preserve that harbor Piedmont prairie ecosystems. Both of these sites are open to the public, but they are worth visiting with a botanist who can introduce you to these amazing vestiges of the once, current, and future Piedmont prairie. Also consider visiting Triangle Land Conservancy's Horton Grove, and keep a lookout for periodic guided tours of NC Plant Conservation Program's Piedmont preserves. On your visits, with luck, there might be the lingering smell of prescribed fire and the opportunity to imagine a buffalo herd thundering through a waist-high sward of interwoven asters, sunflowers, goldenrods, and blazing stars.

Roadsides will continue to be the "front yard of the nation." The perception of what constitutes curb appeal is expanding to include an appreciation of these forgotten native grasslands and wildflowers. The Piedmont prairie is not a collection of wayside waifs, but a nearly lost, fundamental ecosystem.



Indian paintbrush (*Castilleja coccinea*) along a roadside in central Orange County, North Carolina.

MEET THE FAMILY

Mint Lamiaceae

Species worldwide: 7,000

Species in North Carolina: 139

Distinguishing characteristics:

- Petals fused into a tube with upper and lower lips
- Square stems, especially when young
- Leaves growing opposite each other
- Aromatic oils



helmet skullcap
(*Scutellaria integrifolia*)



obedient plant
(*Physostegia virginiana*)



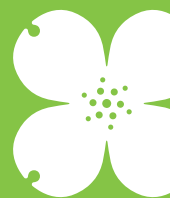
bee balm
(*Monarda fistulosa*)





Staff Pick: Pitcher Plants

BY CHRIS LILOIA, HABITAT GARDENS CURATOR

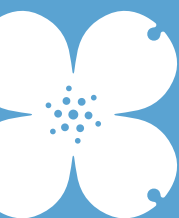


The NCBG pitcher plant collection is one of our most beloved displays. Beautiful, weird, and insectivorous is clearly a winning combination. Colorful and alluring pitchers, which are actually modified leaves, are visible for most of the year and attract the attention of people and insects alike. But have you seen the flowers?

Late April to mid-May is the time of year to catch the show. We have 11 species of pitcher plants and many different hybrids with flower colors ranging from pale to bright yellow, pink, red, purple, and even multicolored. Most of the plants bloom before they've made their spring pitchers. This helps with pollination as it wouldn't do to eat the insects who ensure the next generation. The bright petals hang down in a showy and somewhat otherworldly floral display. After the petals drop, the rest of the structure remains, holding the ripening seeds until they are ready in fall.

While pitcher plants have very specific growing requirements, you can easily replicate them in a container at home in a sunny spot. An acidic, low-nutrient growing medium like peat and sand combined with full sun and constant moisture is all you need. Check out our growing carnivorous plants instructions at ncbg.unc.edu/plants/resources-for-gardeners. Or better yet, come by to see ours in bloom and get your own pitcher plants and growing instructions while you are here.





Spring Wildflower Hotspots

BY TOM EARNHARDT, HOST/PRODUCER OF EXPLORING NORTH CAROLINA

It is not an easy task to choose just six wildflower hotspots in North Carolina. In some parts of the state, it would be a difficult task even within a single county. I'll start in the eastern part of the state, and work to the west.

For folks new to North Carolina, or those who have visited this location 20 times, the "Big Island" longleaf pine savanna of The Nature Conservancy's Green Swamp Preserve (NC Highway 211, eight miles west of Supply) never disappoints. Although the entire preserve can be exciting, Big Island is a true hotspot from April through late summer. It is a location with changing species of orchid, four different pitcher plants, sundews, rare lilies, and the annual star of the show—Venus flytrap. The entire season can produce surprises, but the first week in May and

first week in August offer completely different and equally spectacular wildflowers.

Drive 60 miles down US 1 from Raleigh to Moore County and you will encounter Weymouth Woods Nature Preserve, another unforgettable wildflower location in an ancient longleaf pine forest. Here you will find one of the oldest living longleaf pines in North Carolina at just under 500 years of age. You will also learn the history of the naval stores industry and see the rare red-cockaded woodpecker. From spring through early summer the trails in Weymouth Woods are lined with incredible Sandhills' wildflowers. Early in the season you will see dwarf iris, birds-foot violet, and wild azalea. This is also the home of lilies, pine gentian, orchids, and asters. Just take

a great wildflower ID book (such as *Wildflowers of the Atlantic Southeast*) and don't be surprised by what you find!

In the North Carolina Piedmont there are many choices, but one of my favorite locations is Hanging Rock State Park in Stokes County, northwest of Winston-Salem. These are isolated mountains, with Moore's Knob rising 2500 feet above sea level! In this unique location, there are both Appalachian and Piedmont flora – more than 700 species. You will find rhododendron, laurel, fire pinks, pink lady slippers, and the turkey-beard lily. Here you can stay in the Piedmont, but also "visit" the mountains. I would be remiss if I did not tell you to visit other Tar Heel monadnocks, freestanding mountains, such as Pilot Mountain, Morrow

Left: Flame azalea at Roan Mountain *Photo by Tom Earnhardt*
Right: Gray's lily *Photo by Tom Earnhardt*
Bottom: Wildflowers blooming at
Green Swamp Preserve *Photo by Johnny Randall*

Mountain, and Crowder's Mountain (all NC State Parks in the Piedmont). Each location has excellent spring and summer wildflower offerings.

When you get to the southwestern part of North Carolina in Transylvania and Jackson Counties, there are no poor wildflower locations! These two counties—where the Appalachian Escarpment rises from South Carolina near Cashiers and Highlands—have locations with an annual rainfall of 100-inches per year (Not a misprint!). For starters go to Gorges State Park, with 7,700 acres of waterfalls, 20-plus natural communities, and myriad rare plants. Gorges State Park is a hotspot for native orchids and one of the best places to see one of the rarest wildflowers in America: the Oconee Bell.

Head to Hickory Nut Gorge and Chimney Rock State Park for another hotspot. On the north facing slopes in Chimney Rock Park, especially near Hickory Nut Falls, you will see violets, mayapple, foamflower, fire pink, trillium, ginseng, mock orange, and several different orchids. This moist cove forest ecosystem is extraordinary, but you will also see many of the same flowers in the less traveled Linville Gorge. From deep, moist soils to dry, rocky outcrops, both Hickory Nut Gorge and Linville Gorge offer a huge variety of ecosystems and plant communities in which wildflowers flourish.

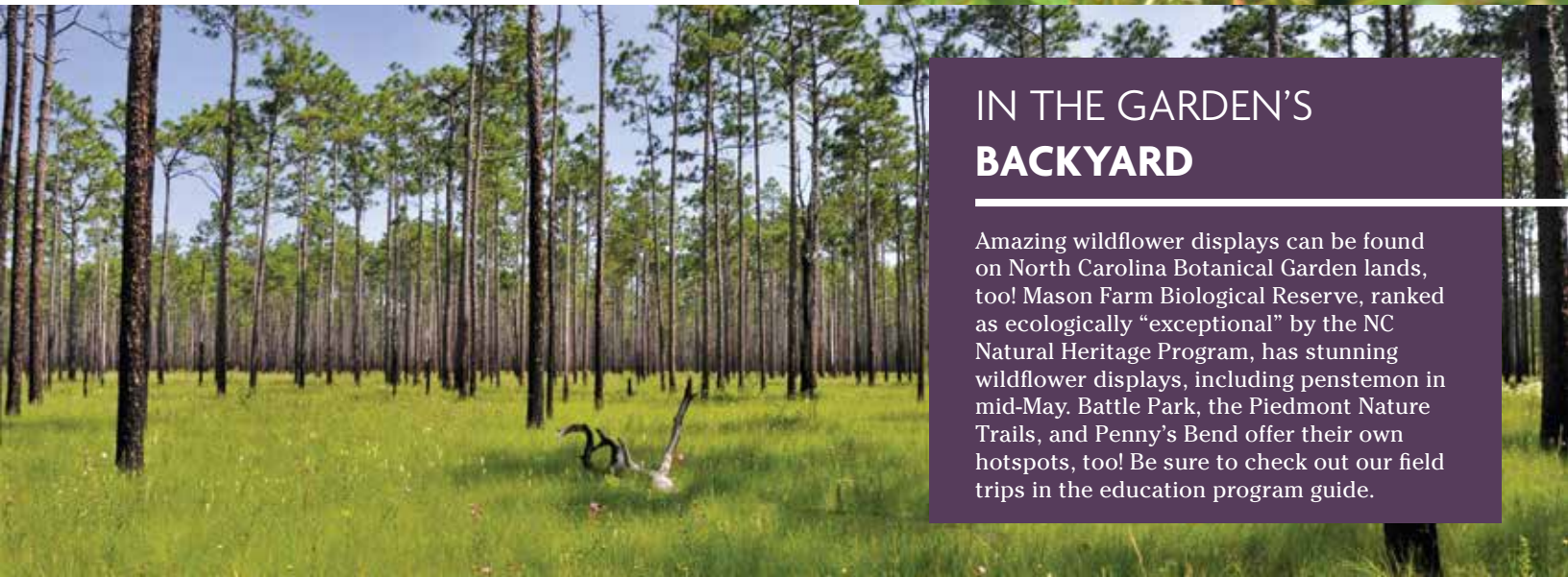
Finally, this spring and summer, go to a high mountain “bald.” North Carolina has many options, but a favorite location is Roan Mountain (at Carver's Gap on the North Carolina-Tennessee border) with a dazzling rhododendron and flame azalea display in early June. In the 5,500 foot meadows at Carver's Gap and Engine Gap you will also find the rare, exquisite Gray's Lily in late June. Farther to the northeast, Elk Knob State Park near Boone also offers a high altitude meadow where you can see rhododendron, azaleas, Gray's lily, and purple fringed orchids.

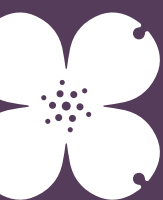
Suffice it to say that each place mentioned above offers a lifetime of wildflower viewing. Our challenge in North Carolina is to identify and maintain these beautiful reminders of our natural heritage by protecting the communities and ecosystems in which they thrive.



IN THE GARDEN'S BACKYARD

Amazing wildflower displays can be found on North Carolina Botanical Garden lands, too! Mason Farm Biological Reserve, ranked as ecologically “exceptional” by the NC Natural Heritage Program, has stunning wildflower displays, including penstemon in mid-May. Battle Park, the Piedmont Nature Trails, and Penny's Bend offer their own hotspots, too! Be sure to check out our field trips in the education program guide.





Perfect Pairs

BY ANGELICA EDWARDS, NCBG COMMUNICATIONS INTERN

Wildflowers and pollinators have remarkable relationships. Some bee species are capable of vibrating their bodies to sonicate, which allows them to expel elusive pollen from wildflowers with poricidal anthers. The yucca moth and the yucca flower are so interconnected that both depend on one another to survive. The pipevine swallowtail is one of few species which can tolerate the toxins of the Dutchman's pipe, giving it a unique advantage over other butterflies. The ruby-throated hummingbird and the cardinal flower have a strategic relationship ensuring the cross pollination of the cardinal flower. To learn more about these relationships, continue reading.

The link between monarch butterflies and milkweed is well-known. Did you know the dependence of a pollinator on a specific plant is fairly common?

*Illustration by
Dot Wilbur-Brooks*



Cardinal Flower and Ruby Throated Hummingbird



At up to four feet tall, cardinal flowers (*Lobelia cardinalis*) dwarf the tiny ruby-throated hummingbird. Ruby-throated hummingbirds are the only hummingbird in the eastern U.S. They flock to cardinal flower's bright red, nectar-rich, tubular blooms, which fit their long beaks. Cardinal flowers hold their reproductive parts out on long structures that wrap perfectly around the hummingbird's head as it drinks nectar from the flower. When it visits the next flower for nectar, it brushes some of that pollen off. Each cardinal flower plant staggers its blooms, opening the flowers at the bottom first and then working its way up. When a flower first opens, the pollen-producing male parts of the flower stick out to catch the hummingbird's head. A few days later, the female parts extend out beyond the male parts to receive the pollen. With staggered blooms among nearby plants, this clever timing increases the cardinal flower's chances of cross-pollination.

Blueberry and the Bee

Most flowers make pollination as easy as possible: they store pollen out in the open, where a visiting insect can pick it up by brushing against it. Blueberries are different. They hide their pollen away inside a tube-like anther with a small pore at the tip where most insects cannot reach it. But carpenter bees and bumblebees have developed a strategy to reach the blueberry flower's nutritious pollen. They bite the anther with the pollen inside and hold onto it. Then, they contract their indirect flight muscles, producing enough force to expel the pollen. During this process, they create a high-pitched noise and their entire body shakes. This is buzz pollination, also called sonication. Bumblebees, carpenter bees, and certain other insects use it to pollinate blueberries, kiwi, cranberries, and other flowers with similar structures. Many pollinators, like honeybees, are not capable of buzz pollination: they rarely pollinate blueberries!



Pipevine Swallowtail Butterfly and the Dutchman's pipe

On a shimmering summer day, a pipevine swallowtail flutters in search of a particular plant to lay its eggs: Dutchman's pipe (*Isotrema macrophyllum*). This southeastern native vine gets its name from its pipe-shaped flowers. Also known as pipevine, it has evolved toxic chemicals to discourage animals from eating its leaves. Pipevine swallowtails have evolved alongside it: they are one of the few species that can tolerate its toxins. But this adaptation comes with a cost: pipevine swallowtails have become such specialized eaters that their caterpillars cannot eat anything but pipevine and closely related plants. Once she has found a pipevine plant, the female pipevine swallowtail lays a cluster of red-orange eggs on its leaves. When the caterpillars hatch, they begin to eat those leaves, storing the plant's toxins in their bodies to discourage predators from eating them. The adult butterflies retain the toxins through metamorphosis, and they even pass them on to their eggs. When under attack, the butterfly excretes the toxins, leaving a foul taste in its attacker's mouth. The pipevine swallowtail is so effective at deterring predators that other butterfly species have mimicked its appearance.



Yucca Flower and Yucca Moth

The yucca moth is a small, white insect that blends in perfectly with the petals of the yucca flower. The two species depend on each other completely: neither could survive without the other. Yucca moths spend most of their short life on the yucca flower. They fulfill a vital pollinator role and in return receive shelter for themselves and their offspring. In spring, male and female yucca moths mate on the yucca blossoms. The female shapes pollen she has gathered from the yucca flower into a lump and leaves the flower for the first time, visiting nearby yucca flowers in search of a home for her offspring. Once she finds a yucca flower that passes inspection, she lays her eggs in the ovary of the flower and deposits the pollen she gathered earlier in the flower, ensuring pollination. This allows the plant to produce fruit that can not only produce a new plant but also feed the moth's larvae.



Prescriptions for time in nature are becoming more common. One great option for filling that prescription is working at a community garden, like the Carolina Community Garden.



Nature: Available with or without a Prescription

Last summer, a study published in Scientific Reports found people who spend two hours in nature each week are significantly more likely to report higher wellbeing and good health than those who do not.

Another study found Americans spend 87% of their time indoors and an additional six percent of their time in a vehicle. That means the average American spends only seven percent of their time outdoors.

Time in nature is associated with lower blood pressure, reduced anxiety and depression, increased energy, improved sleep, and more. Here at the Garden, we have long celebrated the benefits of nature. Our horticultural therapy program, started in 1978, uses gardening as a way for people of all abilities to participate in the care of plants and production of food. The practice of horticultural therapy has proven to be valuable for addressing a wide range of human needs—emotional, social, physical, and spiritual.

It's no surprise some doctors have begun prescribing nature and gardening to their patients. In the United Kingdom, the National Health Service encourages "green prescriptions" for walking and other activities, including gardening.

Similar programs have sprung up across the US. Vermont, Pittsburgh, and Birmingham all have park prescription systems, and the National ParkRx Initiative and Park Rx America are growing. Closer to home, prescriptions for gardening are catching on, too. The University of North Carolina's Campus Health program now writes prescriptions for students to help out at Carolina Community Garden workdays.

In addition to the physical benefits of spending time outside and engaging in gentle exercise, gardening can improve mental health: studies have shown getting your hands dirty can enhance your mood, and anyone who has pulled up a weed or harvested a vegetable can attest to the satisfaction that comes with caring for a garden. Community gardens in particular offer a social benefit as participants work alongside one another, cooperating and working toward shared goals.

With the amount of time we spend indoors, it might be difficult to break the routine and get outside. Prescriptions are one way to encourage people to break the routine, but thankfully, nature is available without a prescription. Plant your own garden. Set a regular "date" with nature. This could be meeting up with a friend, or it could be a workday at your local community garden. Nature awaits!



COMMUNITY PHOTO EXHIBIT

Ever wanted to have your photograph displayed in a gallery? Start taking pictures now, and be a part of our first ever community photo exhibit at the end of this year!

We're looking for photographers of all ages and skill levels to submit photos of native flowers in North Carolina. Only have a smartphone?

No problem! Prints will be no larger than 8x10 inches. In November and December, we will display hundreds of selected photos in an exhibit in our DeBerry Gallery.

LEARN MORE AND SUBMIT YOUR PHOTOS AT
NCBG.UNC.EDU/COMMUNITYPHOTO

A Taste Test for Pollinators

Native plants are at the base of our food chain and ecosystems. Our native plants have evolved along with native insects and birds, resulting in an inseparable relationship.

But, what about cultivated forms of native plant species, sometimes referred to as nativars? Plant features can be selected to vary from the original in color, scent, shape of petals, or other characteristics. Since these characteristics are important to pollinators, are these changes making the plants more or less attractive to them? Are nativars as beneficial to our ecosystem as straight species?

To tell the truth, we don't know the answer to this question. There is a lack of research regarding nativars and pollinators.

But, we are searching for answers, and you can help! Through Project Budburst, the Garden is joining with other gardens across the country to learn more. Here at the Garden, we have planted wild, native species next to their nativars, and we will be documenting the number of pollinators visiting them.

You can join this effort in two ways. You can grow your own plants and document the pollinators in your own garden or containers. Or, you can volunteer to come to the Garden and count the pollinators on our plants!

If you would like to volunteer to count at the Garden, contact Elaine at emcmanus@unc.edu. And if you'd like to plant your own research garden, find the list of plants and instructions at budburst.org/projects/nativars.

A pollinator on Foxglove beardtongue (*Penstemon digitalis*), one of the species Project Budburst's nativar project will study.



NEW NCBG PODCAST NOW AIRING!

PLANT POWER: THE POWER OF PLANTS IN A CHANGING CLIMATE

Tune in to our new podcast series! Emma Wilson, the Garden's Fred and Virginia Houk Sustainability Intern, guides listeners through interviews with some of North Carolina's finest naturalists, exploring native plants and their connection with our changing climate. Each episode is focused on providing resources to listeners to mitigate climate change impacts in their community. Tune in to our six episode mini-series for information on topics including land conservation, protecting our pollinators, and turning to nature as a source of healing.



Emma Wilson, host of the Plant Power podcast, interviews NCBG director Damon Waitt for the first episode.



FOLLOW ALONG!

Podcast episodes will be released every two weeks through April. Find the links to subscribe to the Plant Power podcast on our website at ncbg.unc.edu/plantpower. The series can also be found on Apple Podcasts, Google Podcasts, and SoundCloud. Subscribe to the podcast, and if you like what you hear, share it with a friend!

You can sustain the Garden each month by establishing a recurring gift via credit card. See the options on the Garden's giving page at unc.live/ncbg, or contact Stephen Keith at 919-962-9458.

A Legacy of Biodiversity Preservation

BY STEPHEN KEITH, NCBG DIRECTOR OF DEVELOPMENT

The Year of the Wildflower theme is a delightful reminder of the North Carolina Botanical Garden's efforts to protect, preserve, restore, and celebrate native plant diversity in the state and region.

Your annual gifts allow garden educators, horticulturalists, and conservationists to continue their work to benefit the environment, safeguard natural resources, inspire minds, and showcase native plant collections.

Many donors provide multiple gifts each year to the overall Garden in addition to specific programs or managed areas. Thank you for the many 2019 year-end gifts, which sustain the annual budget. There are numerous ways to support the Garden annually, including responding to the spring appeal, serving as an Event Host, sponsoring the Garden with your business through the Corporate

Partner program, establishing an automatic monthly gift, or by using the gift envelope in this magazine. These gifts help meet the growing needs of the Garden.

There are many philanthropic ways to celebrate biodiversity besides annual giving. Each year the Garden receives gifts through wills or revocable living trusts. These gifts provide a percentage of an estate or a certain amount of cash, securities, or property. Bequests provide the resources to continue the Garden's mission, extending the legacy of the donor. We have trained staff to answer questions and guide donors as they work with their qualified estate attorney. If you would like to start this conversation, I welcome you to contact the NCBG development office.

Several recent large gifts will have a great impact on the future of the Garden.

interns have been hired to work with the Native Plant Materials Development program. This project involves travelling across the state to collect seeds, cleaning and storing seeds, growing seed increase plots, and providing native plant materials to other conservation organizations.

Marcella and Paul Grendler also wanted to help with this project and seized the opportunity to provide funding for a 4-wheel drive field vehicle. The Grendlers have a history of meeting the Garden's equipment needs, and we thank them for this recent gift, extending the staff's ability to travel locally and afar to meet biodiversity goals.

Another large gift commitment was made at the end of 2019 to name a new student internship endowment at the North Carolina Botanical Garden. We are grateful to **Ellen and Charles Johnson** for meeting a strategic need of the Garden.

The Garden currently hosts between 10-12 student interns each summer, serving in all areas of the Garden, including summer camp, the Coker Arboretum, Battle Park, habitat collections, and natural areas. The summer student interns join the NCBG staff during a crucial time in the growing season and during summer camp.

When the Ellen McFarland Johnson & Charles Sidney Johnson, Jr. student intern endowment is complete, the annual interest payout will provide enough funding to pay for the full-time



Marcella and Paul Grendler with the 4-wheel drive truck they bought for the Garden's field work.

As described in a previous magazine (Fall/Winter 2019/20), a new Garden project will offer native plants and seeds for specific restoration projects in the region. Inspired by an anonymous donor, a new conservation grower and two seasonal

Continued on page 22

**Thank you for choosing to honor friends and family
through a gift to the North Carolina Botanical Garden!**
Tribute Gifts below were received from August 8 to December 31, 2019.

IN HONOR OF

Brie G. Arthur

Guilford County EMGV Association

Charlotte T. Battle

Liz Manugian, *for the Horticulture Fund*

Catherine Bollinger and Thomas Scheitlin

David and Susan Bollinger

Richard and Lisa Brashear

William K. and Anne P Brashear

W. Woodrow Burns Jr and Catharine Gilliam Burns

Mary S. McGuire Gilliam

Becky and Munroe Cobey

Mary B. Todd, *for the
Jim Todd Living Plant Fund*

Arthur and Mignon DeBerry

Stephen L. Keith and Lisa C. Glover,
for Coker Arboretum Endowment

Barbara and Tom Driscoll

Dianne M. Byrne and Ted Johnson,
for Educational Outreach

Mike Dunn

on the occasion of his retirement

For Summer Camp Scholarships
Pam and Bill Camp
Sarah and John Dendy
Matt Gocke and Dara Shain
Stephen L. Keith and Lisa C. Glover
Joanna and Bill Lelekacs
Nell and C.L. Morton
Valerie G. Vickers and Paul D. Mitchell,
for Children's Wonder Garden

Rebecca Feldman and David Stower

Jennifer E. Feldman and
Benjamin Z. Landman

Ken and Laura Frazier

Steven and Susan Skolsky,
*for North Carolina Botanical Garden
Student Intern Fund*

Karro Frost

Terry and Joe Graedon

John and Sheri Gant

Edmund and Betsy Gant, *for Botanical
Garden Conservation Fund*

Julie Gaskell

Devin T. Gaskell

Matt Gocke

Eszter S. Karvazy, *for Horticulture Fund*

Richelle Gunderman

Amanda Gunderman, *for Piedmont
Nature Trail Expendable*

Alex Hapgood

Rus and Dixie Hapgood,
for Forest Theatre Fund

Marilyn Henshaw

William R. Henshaw

Albert and Lois Howlett

Marc and Laurie Howlett

Maxwell Huppert

on the occasion of his 5th birthday
Sarah and David Huppert

Katherine Mallard Lindsey

Brent and Becky M. McKee

Margo MacIntyre

For Coker Arboretum Endowment
Allison L. Essen
Alton L. Johnson
Charlotte A. Jones-Roe and Chuck Roe
Mark and Jane Ritchie, *for Coker
Arboretum-Expendable*

Harriet Wall Martin

Kitty E. Bell
Tobin and Katherine Savage

Laura J. Mindlin

Marcie and Bill Ferris,
for Edible Campus Gift Account

Ken Moore

Julie H. Moore
Peter and Margaret Schubert

Nell Hatley Morton

Libba and Jim Wells

North Carolina Botanical Garden Staff

Pam and Bill Camp,
for Natural Areas Endowment
Peter and Carolyn White

Clifford R Parks

Kate B. Adams,
for Coker Arboretum Endowment

Johnny Randall

For Natural Areas Endowment
Allison L. Essen
Charlotte Jones-Roe and Chuck Roe
John and Christy Mack
Larry and Audrey Mellichamp
Missy and Sam Rankin, *for Botanical
Garden Conservation Fund*
Tom and Margaret Scott

Missy Rankin

Gary and Marcia Parks

Katharine Lee Reid

Franklin and Monica Tew

Bill Ross and Susan Gravely

Charlotte T. Battle, *for Battle Park Fund*
Liz Manugian, *for Horticulture Fund*

Eleanor Spangler Rutledge

Kitty G. Harrison

Tom and Margaret Scott

Abbie J. Royster

Blaine and Susan Short

Anne Loustau,
for Friends of UNC Herbarium

Janna L. Starr

Lori Bocklund

Roxy Soleil Stern

Alan and Maxine Stern,
for Natural Areas Endowment

Robert Tyndall and Constance Larcher

Dustin and Stephanie Devaney

Rene Vladutiu

Catherine Alguire,
for Children's Wonder Garden

Damon Waitt

Carey and Billie Durham,
for NCBG Director's Fund

Mollye Watkins

William and Susan Watkins,
for Natural Areas Endowment

Dot Wilbur-Brooks

Stephen L. Keith and Lisa C. Glover,
*for the North Carolina Botanical
Garden Student Intern Fund*

Alana McAllister Wilson and Amanda McAllister Wilson

Alfred and Lyn Wilson,
for Natural Areas Endowment

IN MEMORY OF

Cindy Ahlbom

Diane and Kenneth Heisig

Ross Andrews

Wendy E. Sarratt

Anonymous

Marianne and Terry Gildea

Raymond Lindsay Barron

Albert and Jane McAdoo
Joseph and Gene Zablotney,
for Coker Arboretum Endowment

Zachary Alexander Bassin

Phyllis Bassin

Mary Virginia Bender

Deborah E. Bender and John F. Curry

Elizabeth A. Bozeman

John R. Bozeman,
for Coker Arboretum Endowment

Melinda Kellner Brock

Katherine Magill Walters,
for Melinda Kellner Brock Terrace

Cordelia Penn Cannon

Cordelia G. Thompson, *for
Coker Arboretum Endowment*

Eve Marie Carson

Jack A. Nichols and Ashley E. Sakwa

Glenna Marie Lake Chapin

Donna A. Bergholz

Mabel Hepler Clinard

Marcia Kennedy

William C. Dickison

Robert and Alice Henry

Patsie Ann Eagan

Edward and Heather Harris,
for Piedmont Nature Trail Expendable

Debra Ann Easter

Ronald K. Levy and Lisa K. Shepherd,
for Children's Wonder Garden

Rob Gardner

Rufus M. Dalton
Laura and Vann Evans
Larry and Audrey Mellichamp,
for Coker Arboretum Endowment

Roger Gilleland

Joseph and Jane McEvoy

Amy Margot Gitelman

Honré F. Gitelman

Paul Green

Betsy Green Moyer

John R. Hamill

Bill and Marcia Daniell,
for Natural Areas Endowment

Sugar Hahn-Joslin, a beloved dog

Julia C. Bryan

Andrew C. Henley and Rebecca J. Henley

Elena G. Elms,
for Coker Arboretum Endowment

Michael Kenneth Hooker

Carmen Hooker Odom

Frederick Johnston Houk Jr.

Virginia S. Houk, *for Battle Park Fund*

Norman Kane

Tamsie and Staples Hughes

Jerry Katz

Robin Moser-Katz

Meg Graham Kemper

Terri L. Phoenix

Norma Surles King

Jesse A. Blackman,
for Coker Arboretum Endowment

Prof. Frederick Henry Koch

Mary N. Morrow,
for Forest Theatre Restoration Fund

Marion Bonavita Laird

Blacknall Memorial Presbyterian Church
Margaret Frothingham

Harriet C. Laskey

Joel I. Laskey,
for Coker Arboretum Endowment

Edward James Ludwig

Helen A. Ludwig

Rex A. McGuinn
Margaret R. McGuinn,
for Edible Campus Gift Account

Martin Joseph McInerney
Dale and Carol Batman
Marion R. Godfrey
Andrea Jimenez and
Craig Hollingsworth
Bill and Leah Palmieri-Guy
Terry and Patty Whitley

Scott McLean Jr.
Dave Robert, *for Battle Park Fund*

John B. McMillan
Jean N. Phillips

Billie Hart Morgan
Jef Morgan

Grover E. Murray
Sally M. Murray, *for Coker
Arboretum Endowment*

Alyce P. Nadeau
Joy Cline Haas, *for Coker
Arboretum Endowment*

Arline Olsen
Elise Olsen

Carolyn Anne Owen
Jim and Kathy Gallucci

Nancy Margaret Pruden
Jeannette Leigh P. Tolley

Caroline Osborne Rechholtz
Laurie Rechholtz

Sarah Poole Rivers
Martha and Bob Brinson

Nancy Howes Robinson
Barbara R. Tepperman

Marian Sanders
Kathy Herr, *for Living Plant Fund*

Thomas A. Sharp
Tyrrell C. Sharp

Lisa Granfield Soong
Martha A. Propst,
for Friends of UNC Herbarium

Lorna Stevens
Kathleen A. Hearsey and
Lauren C. Stevens,
for Battle Park Fund

William Grady Thomas
Dianne and Jim Frazier,
*for Coker Arboretum
Endowment*

Page Vernon
Jim and Alison Vernon, *for
Children's Wonder Garden*

**Bernice Stiles Wade and
Barbara Lois Stile**
For Battle Park Fund
Lars G. Schoultz and Jane Volland
Anne Rogers Wade

Jeffrey Eugene Welch
Grace Penny

Helen Jane Wettach
Ginger R. Travis,
for Coker Arboretum Endowment

LEAVE A LEGACY

Include the North Carolina Botanical Garden in your will or estate plans. Contact Stephen Keith at 919-962-9458 or Stephen.Keith@unc.edu for more details.

Dorothy A. Whitehead
Charles and Patricia Whitehead,
*for Coker Arboretum
Endowment*

David Whittington
Kathryn and Peter Enchelmayr,
for Battle Park Fund

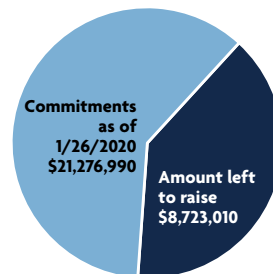
Cynthia Leigh Wittmer
Steven and Rose Krasnow

Frank Ming Wong
June K. Foushee

PROGRESS TOWARD THE GARDEN'S \$30 MILLION UNC CAMPAIGN GOAL

The North Carolina Botanical Garden is a department of UNC-Chapel Hill. You can support the Garden and participate in Carolina's fundraising campaign. We have reached over 60 percent of our \$30 million campaign goal. The priorities of our campaign include several capital projects, such as the entryway landscape, greenhouse renovation, Forest Theatre enhancement, and Children's Wonder Garden construction. We are also working to increase annual giving, complete several endowments, increase compelling interpretation throughout our spaces, and plan for the future Plant Biodiversity Research Center. For more information about the Garden's campaign, contact Stephen Keith at 919-962-9458.

FOR
ALL
KIND | the
CAMPAIGN
for
CAROLINA



Continued from page 20

salary of a student intern, plus provide capital to register the intern for the annual Cullowhee Native Plant Conference.

Ellen and Charles are neighbors and long-time supporters of the Garden. Ellen served as a tour guide for 20 years under Dot Wilbur-Brooks and is a 10-year volunteer at the Green Gardener desk at the Allen Education Center. When asked why they chose a student internship, Ellen proclaimed, "We know the young people who benefit from internships will go on to careers related to the study and preservation of our natural world." Ellen and Charles look forward to the impact student interns will have on the Garden's mission. Ellen also affirms the North Carolina Botanical Garden "is a place where young and old can learn why it is important to conserve, protect, and use native plants."

It takes many people to keep the Garden operating smoothly. With support from over 3,600 donors in the last fiscal year, the Garden continues to preserve biodiversity and educate people of all ages. Come enjoy the Year of the Wildflower events and programs and know that your gifts and contributions are essential to the Garden's success.



Summer interns get hands-on experience with horticulture and our native flora.

THANK YOU, CORPORATE PARTNERS!

Corporate Partners are businesses who support the North Carolina Botanical Garden year-round by sponsoring the full year of signature events. Thanks to our 2020 Corporate Partners for their commitment to the Garden's success. If you would like to become a Corporate Partner, please contact Stephen Keith at 919-962-9458.

NATURAL AREA STEWARD



HABITAT SUSTAINERS



GARDEN SUPPORTERS



CHAPEL HILL GARDEN TOUR

SATURDAY, APRIL 25, 10 A.M.-4 P.M.
SUNDAY, APRIL 26, 11 A.M.-4 P.M.

The 13th Chapel Hill Garden Tour, titled "Vision & View," showcases six unique private gardens and the North Carolina Botanical Garden. Gardens range from historic to modern, personal to campus, mountaintop to lakeside. Passionate, visionary gardeners with diverse properties and points of view created these special gardens. Proceeds support ongoing programs at the NCBG and Chapel Hill Garden Club. Purchase a Golden Hour ticket for special early morning admission to four of the tour gardens. This is a great opportunity to get fabulous shots for the Garden Club's photography contest!

GO.UNC.EDU/CHAPELHILLGARDENTOUR

NORTH CAROLINA BOTANICAL GARDEN

MARK YOUR CALENDAR

April 5
**Evelyn McNeill Sims
Native Plant Lecture**
with Julie Moore

May 2
Native Plant Sale

May 11-17
National Public Gardens Week

June 6
Carolina Moonlight Garden Party

June 11
Pitchers & Pitchers

September 12
**Sculpture in the Garden
Preview Party**

September 25 & 26
Fall Plant Sale

October 23
BOOtanical Family Festival

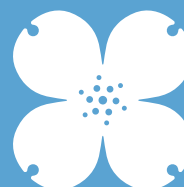
November 1
**Jenny Elder Fitch
Memorial Lecture**

November 20
**NC Botanical Garden Foundation
Membership Meeting**

December 3
**Winter in the Garden
Member Party & Preview Night**

December 4 & 5
**Winter in the Garden
Holiday Festival**

For more information:
ncbg.unc.edu



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

NONPROFIT
U.S. POSTAGE
PAID
UNC – CHAPEL HILL

ADDRESS SERVICE REQUESTED

