

NORTH CAROLINA
BOTANICAL
GARDEN

CONSERVATION GARDENER

SPRING/SUMMER 2023
\$4.95



THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

IN THIS ISSUE

ON THE COVER

Geranium maculatum

wild geranium



Wildflower of the Year 5

Harnessing the Power of the People 6

Citizen Science at the Herbarium 10

Staff Pick 13 Growing Plants from Seed 14

Renewing a Campus Treasure 17



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



I couldn't have said it any better myself

BY DAMON WAITT, NCBG DIRECTOR

Dear Members and Friends,

Like everyone else on planet Earth, I am captivated by the debut of ChatGPT, the artificial intelligence tool capable of generating human-like text. Since a big part of my job is using my human brain to generate human text (for example, crafting a creative and interesting Director's letter for Conservation Gardener magazine), I began to worry if this new technology was going to render me non-essential, obsolete, a relic. So, I challenged ChatGPT to answer the most fundamental question of all, "Why is Conservation Gardening important?" Here is what *it* had to say..

Conservation gardening is important for several reasons:

- **Biodiversity:** Conservation gardening promotes the use of native plants and sustainable gardening practices, which can help to preserve biodiversity and provide habitat for local wildlife. By planting a diverse range of plant species and reducing the use of harmful chemicals, conservation gardeners can create healthy ecosystems that support a wide range of animal and plant species.
- **Climate Change Mitigation:** Conservation gardening can help to mitigate the effects of climate change by reducing carbon

emissions and promoting carbon sequestration. Native plants absorb carbon dioxide from the atmosphere and store it in the soil, helping to reduce greenhouse gas emissions. In addition, conservation gardening practices such as composting and reducing water usage can help to reduce carbon emissions.

- **Water Conservation:** Conservation gardening promotes the use of drought-tolerant native plants and other sustainable gardening practices, which can help to conserve water resources. By reducing water usage, conservation gardeners can help to reduce the strain on local water supplies and promote water conservation.
- **Soil Health:** Conservation gardening practices such as composting, reducing tillage, and planting cover crops can help to improve soil health and reduce soil erosion. Healthy soil is essential for plant growth and provides important habitat for soil microorganisms, which play a key role in nutrient cycling and soil health.

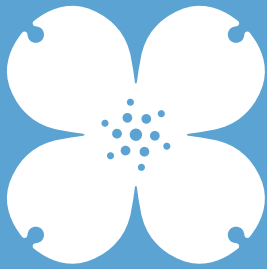
- **Health Benefits:** Conservation gardening can have important health benefits, both for individuals and for communities. Studies have shown that spending time in green spaces and engaging in gardening activities can improve mental health and physical well-being. In addition, conservation gardening can help to promote social connections and community engagement.

Overall, conservation gardening is an important tool for promoting sustainable and environmentally friendly gardening practices. By planting native species, reducing the use of harmful chemicals, and promoting healthy ecosystems, conservation gardeners can help to promote biodiversity, reduce the effects of climate change, conserve water resources, and promote soil health.

"Uh oh! ChatGPT, find me a job working with my hands."

Sincerely Yours,

Damon Waitt



NORTH CAROLINA
BOTANICAL
GARDEN



THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

North Carolina Botanical Garden

DAMON WAITT *Director*

LISA HICKS *Business Office*

STEPHEN KEITH *Development*

JOANNA MASSEY LELEKACS
Learning and Engagement

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*

MEMBERS SEED PACK

As a member, you may choose up to eight seed packets! Learn about our Members' Seed Pack and order your seeds while supplies last!

NCBG.UNC.EDU/SEEDPACK

Save the World with Citizen Science

BY JENNIFER PETERSON, MANAGING EDITOR

As a member of the North Carolina Botanical Garden Foundation, you likely understand the importance of conservation. I imagine many of you have native plants in your landscape, and try to make your space a welcoming space for pollinators, birds, and other wildlife. You are definitely doing your part. But, is there more we can do?

The world is facing many big issues, including climate change and species extinction. Scientists are working to find solutions, but that work is obviously difficult. The sheer amount of data needed is mind-boggling. Did you know we, average people, are able to contribute to scientific research? This issue of *Conservation Gardener* is focussed on pitching in via citizen science.

I am excited Chris Goforth, local citizen science expert, has contributed an article explaining the importance of this work and a variety of projects to get involved in (p. 6). We follow this up with a list of citizen science projects the Garden is actively participating in (p. 9).

The UNC Herbarium has a long history working with citizen scientists, and Carol Ann McCormick describes the work of several important contributors (p. 10).

And, since this is *Conservation Gardener*, of course we have articles useful for the home gardener. Learn about the North Carolina Wildflower of the Year (p. 5), colorful plants for your shade garden (p. 13), and how to grow native plants from seed (p. 14).

We are also including information about both an invasive plant (p. 15) and an imperiled plant (p. 18), features we are planning to repeat in every issue.

As spring emerges throughout our region, take time to appreciate the native plants, pollinators, and birds close to you. And, if you are able, consider participating in citizen science. Your contributions could be vital to finding answers for the world's big problems!

Note: We have used the term "citizen science" throughout this magazine. There is debate about using this term versus "community science." As with many other organizations, our definition of citizen includes all people, regardless of where they are from. If you'd like to know more about this, I recommend visiting go.unc.edu/3456. I'm interested in your thoughts about this, too. Let me know what you think at jennifer.peterson@unc.edu.

As a garden focused on conserving the biodiversity of southeastern native plants, we recognize that just as biodiversity is critical to a healthy ecosystem, diversity in people and perspectives makes our organization and community stronger. NCBG is committed to creating an environment in our gardens and natural areas where everyone's voice is heard and everyone feels safe and welcome.



NC Wildflower of the Year

BY HEATHER SUMMER, NCBG COLLECTIONS MANAGER & SEED PROGRAM COORDINATOR

Ten years ago, we expanded the scope of our Wildflower of the Year program to include a showy native shrub. In 2023, we are doing it again to celebrate buttonbush (*Cephalanthus occidentalis*), a large deciduous shrub that occurs throughout central and eastern North America in swamps, depressional wetlands, and along the banks of streams, rivers, and lakes.

In mid to late summer, buttonbush explodes with small, fragrant white flowers with long protruding styles that are densely arranged in spherical clusters, resembling little pincushions or fireworks. Buttonbush is truly a pollinator magnet as these flowers are an abundant and preferred nectar source for numerous species of bees and butterflies, as well as ruby-throated hummingbirds. In fact, buttonbush is considered a valuable plant among beekeepers, and it has been reported that this species was brought into the commercial trade in the 1700s as a nectar resource for honeybees. Globular seed heads of reddish-brown pyramid-shaped seeds develop in late fall and persist on the plant after the leaves have dropped. These clusters of seed heads resemble the spiky “gum balls” of sweetgum (*Liquidambar styraciflua*) but are softer and break apart pretty quickly after falling to the ground. Ducks and other waterfowl, as well as mammals, consume the individual seeds.

Preparations of buttonbush roots and bark are used medicinally by several Indigenous tribes to treat a wide variety of ailments including headache, fever, dysentery, and muscle inflammation. The leaves of buttonbush contain the glycoside cephalothin and can be toxic to animals (including humans!) if ingested in large doses, which means that deer typically avoid browsing on them.

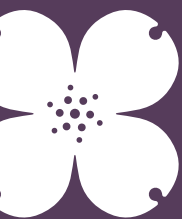
Buttonbush thrives in consistently moist to wet, rich soils in full to part sun, but it is adaptable to various soil types and does not need to be planted in standing water to survive. It is not drought tolerant, so supplemental watering may be necessary if it is planted on drier sites. Growing up to 12 feet tall, buttonbush has an open, irregular form that can be pruned in late winter or early spring (before new growth appears) to maintain a more compact shape. If left untouched, buttonbush will eventually spread into an attractive but dense thicket, which is why it is often planted to control soil erosion along streambanks. It is the perfect choice for rain gardens or low-lying, wet areas with poor drainage.

Want to try your hand at growing buttonbush from seed? You can pick up a free seed packet from our exhibit hall or send a self-addressed, stamped envelope to:

North Carolina Botanical Garden
UNC-Chapel Hill
Attn: NCWFOY 2023
CB 3375
Chapel Hill, NC 27599-3375

The North Carolina Wildflower of the Year program is managed by the North Carolina Botanical Garden with some financial support from the Garden Club of North Carolina, Inc. Each year since 1982, a showy native perennial has been chosen and seeds of that wildflower are distributed to interested gardeners.





Citizen Science: Harnessing the Power of the People

BY CHRISTINE L. GOFORTH, HEAD OF CITIZEN SCIENCE,
NORTH CAROLINA MUSEUM OF NATURAL SCIENCES

Can you remember a time where you witnessed or discovered something that filled you with wonder?

Maybe you saw an insect exhibiting a particularly interesting behavior that you couldn't explain or you worked out that if you bounced a ball just right, you could make it ricochet off three walls and land neatly in a trash can. Science exists because humans are drawn to these sorts of discoveries and indulge our urges to explain how things work and learn about the world around us. Ask any scientist why they got into science and you will likely hear about a time when they witnessed or learned something amazing and simply had to explain it. The scientist's need to satiate their curiosity and indulge their sense of wonder drives the important work that they do.

Unfortunately, scientific studies have been done nearly exclusively by professional scientists for the last 250 years or so, the work often done in a sort of black box that has increasingly excluded amateurs of any skill level. But why should professional scientists have all the fun and make all the best discoveries? Over the past three decades, the modern era of citizen science has arisen, a type of science that welcomes help from

anyone regardless of their level of experience with science. While there are many names for this way of conducting scientific research (e.g., community science, public participation in scientific research, public science, contributory science, or participatory science), citizen science projects are partnerships between the public and professional scientists to answer scientific questions. These projects allow the world's citizens to peek inside that black box of science and become an active member of the scientific process. In essence, anyone anywhere has the potential to contribute to scientific research as a citizen scientist and indulge that sense of wonder that we all share as humans.

There are thousands of citizen science projects looking for help from members of the public. Many of these are top-down projects, where a scientist asks for help conducting their research and often engages the public in the data collection or data processing portions of their work. These types of projects benefit the researchers by allowing them to access far more locations at more times than they could ever manage alone. They also allow researchers to pursue big questions, the ones that require hundreds if not thousands of people doing the

Left: A citizen scientist records an observation in iNaturalist, a free app used to collect data for a variety of research projects.

work together to generate answers. Participants in these sorts of top-down projects can learn about the scientific process by taking part in the work, and the potential for learning and discovering something entirely new is high. Imagine being a participant in a citizen science project who discovers a new species or sees a new behavior that no scientist has ever seen! Citizen scientists have done this and more.

Other citizen science projects, especially those that use the name community science, are community-driven bottom-up projects that lead to real-world solutions to local problems, especially problems that adversely impact the community. These sorts of projects often address threats to human health, such as water or air pollution that leads to higher cancer or asthma rates in people who live nearby. In these cases, a scientist may advise on how to rigorously collect defensible data and help with the data analysis, but the end goal is usually a solution to a community problem. In these projects, new scientific discoveries may take a back seat to enacting meaningful local change.

While there is still mistrust of citizen-generated data within some scientific circles, there is ample evidence to suggest that carefully designed citizen science projects with good quality control measures in place can both generate massive amounts of high-quality data and lead to major scientific discoveries. For example, the eBird project asks people to report checklists of birds that they see and know how to identify. The project has thus far documented over two billion birds worldwide and has proven to be an invaluable tool in the understanding of bird migrations and bird conservation efforts.

Citizen scientists are also well-known for their ability to find and document rare things, such as discovering the locations of the handful of remaining wild populations of the once very common nine-spotted ladybug in New York state or North America's rarest ant species spotted outside an apartment complex in Cary, North Carolina. Citizen science events such as the City Nature Challenge (CNC), a friendly competition between cities internationally to see which can photographically document the most wild living things over a four-day period, have documented thousands of rare and endangered species. In 2018, a CNC participant took a photo of a random plant in a Raleigh park that turned out to be veined skullcap, a rare,

endangered plant that had not been seen in Wake County since the 1960s and was thought to be locally extinct. A simple photo taken by an event participant who knew only that the plant was one she had not yet photographed

“...anyone anywhere has the potential to contribute to scientific research as a citizen scientist and indulge that sense of wonder that we all share as humans.”

led to a major ongoing conservation effort to protect the growing population of this rare plant well into the future.

Projects vary greatly in scope. Those big questions that require help from many people often have a national or international focus and recruit, train, and support hundreds to millions of participants. These projects include the Community Rain, Hail, and Snow Network (or CoCoRaHS), a massive network of people across North America who measure precipitation with precision rain gauges and make daily reports. With so many people participating in so many locations, CoCoRaHS gathers finer-scale data than well-known organizations such as the National Weather Service and has led to improved understanding of local rainfall patterns across the continent. Nature's Notebook asks participants to report the current status of a wide range of plant and animal species to better understand the impacts of climate change across the US and Canada. Caterpillars Count, a project based at the University of North Carolina Chapel Hill, asks people to document the number and types of insects on tree leaves to study how the timing of the availability of these insects impacts migratory bird populations in our changing world.



Other projects have a more local focus, such as the Carolina Bird Atlas. Built within eBird, the Carolina Bird Atlas allows local bird researchers to gather additional data on the breeding status of birds and more to support locally relevant studies and conservation efforts. The Carolina Ghost Hunt aims to document the range of the various species of ghost fireflies found in the Carolinas, including one that may be an entirely new species. The ecoEXPLORE project engages kids in grades K-8 across North Carolina in documenting biodiversity, earning prizes and badges as they learn and interact with scientists.

With so many citizen science projects available, there is a project for nearly every interest and every type of science.



Blue-gray gnatcatcher feeding nestlings. Photo by Mike Dunn

SciStarter.org is a great place for prospective citizen scientists to start their search for projects. The website lists thousands of citizen science projects and makes them searchable by topic, location, activity type, indoor vs. outdoor, and more. Local organizations, such as the North Carolina Botanical Garden and the North Carolina Museum of Natural Sciences, are also great places to look for more hands-on activities, such as in-person trainings and educational programs to help you get started with a citizen science project.

Most of the projects mentioned thus far are great for anyone interested in plants, botany, or gardening. Want to know which insects are visiting your flowers or which weed is popping up in the corner of your garden? Try snapping a photo for Natural North Carolina, a project built within iNaturalist. iNaturalist has amazingly powerful artificial intelligence that can help you identify species while also sharing your photos with scientists who can use them in their work. You may also love the Great Sunflower Project, a project that aims to document pollination services across the US and help restore areas identified as “pollination deserts.” If you already know the butterflies in your yard or garden, consider submitting a checklist to the eButterfly project, the biggest database of butterfly data currently available to scientists. If you grow milkweed plants of any type, you may also want to look into Monarch Watch, a project that studies monarch migration by asking participants to place numbered stickers on monarch wings and releasing them, or the Monarch Larva Monitoring Project, which documents the breeding success of this iconic butterfly species across its range.

With so many major discoveries made by citizen scientists, the phenomenal opportunity to learn about and enjoy the world around you, and the potential to solve some of the biggest problems facing our world in a highly collaborative manner, citizen science projects are a great

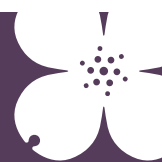
way for everyone to contribute to science. If you have any interest in science or nature, why not become a citizen scientist? Engage that sense of wonder that we all share and become a part of science. Perhaps that next great discovery will be yours!

Chris Goforth is a citizen science practitioner, entomologist, and educator based in Raleigh, North Carolina. She is currently the head of citizen science for the North Carolina Museum of Natural Sciences. She is also a dragonfly enthusiast! See her Lunchbox Talk on this topic (and other Lunchbox Talks) at ncbg.unc.edu/recordings.

LEARNING & ENGAGEMENT: A NEW NAME FOR NEW TIMES!

The Garden's Education department is making a shift ... to the department's name! The new name – Learning & Engagement – better describes the full breadth of departmental programs. All our programs still foster learning, and the new name intentionally centers people over and above the institution. It better defines how we are working shoulder to shoulder in community through the Carolina Community Garden, Edible Campus UNC,

and Therapeutic Horticulture programs as well as our expanding partnership with the UNC American Indian Center. We look forward to leaning into this new name as we continue to provide quality learning activities and engage with the community. Your input into our programs and activities is always welcomed – ncbgregistrar@unc.edu!



Monarch butterfly on butterfly milkweed (*Asclepias tuberosa*).



Citizen Science at the Garden

Ready to engage in citizen science? The Garden is involved in several projects, and we'd love your help!

iNaturalist

iNaturalist is a free app that lets you record and share photos or observations of nature. You can identify species yourself, use iNaturalist's artificial intelligence to narrow it down, or let other expert users identify what you've spotted. Many scientists use these observations in a variety of research projects. You can read more about iNaturalist, including tips for using it, in our Fall/Winter 2020/21 edition of Conservation Gardener at go.unc.edu/ConservationGardenerFall20.

Seek by iNaturalist - For Kids!

This app uses iNaturalist data to identify wildlife. Kids can earn virtual badges as they photograph and identify species.

Budburst

The North Carolina Botanical Garden is a Budburst satellite hub, partnering with local community organizations and schools to run "mini" Budburst Pollinators and Climate Project programming events and collect data. These events inspire and train community members to make observations about how plants and their pollinators are responding to a changing climate. Stay tuned to ncbg.unc.edu to learn about upcoming partner events. Check out budburst.org for more projects.

Caterpillars Count!

Caterpillars Count! is a community science project for measuring the seasonal variation, also known as phenology, and abundance of arthropods like caterpillars, beetles, and spiders found on the foliage of trees and shrubs. Caterpillars Count! was started by Allen Hurlbert, professor at UNC-Chapel Hill, and is part of a broader National Science Foundation funded project on phenological mismatch. Learn more at caterpillarscount.unc.edu.

Mason Farm Butterfly Project

The Mason Farm Butterfly Project monitors butterflies at Mason Farm Biological Reserve, a nature preserve in Chapel Hill managed by the Garden. A partnership between Joel Kingsolver's lab in the UNC-Chapel Hill Biology Department and the Garden, participants are invited to record butterfly observations at Mason Farm and contribute their sightings to a database, which will be used by members of the Kingsolver lab to study changes in butterfly flight seasons over time. Learn more at ncbutterflies.web.unc.edu.

ecoEXPLORE For Kids!

ecoEXPLORE (Experiences Promoting Learning Outdoors for Research and Education) is an incentive-based citizen science program for children in grades K-8. Developed by the North Carolina Arboretum, this innovative program combines science exploration with kid-friendly technology to foster a fun learning environment while encouraging children to explore the outdoors and participate in citizen science. The North Carolina Botanical Garden is an ecoEXPLORE Hotspot, a special area to make your observations. Learn more at www.ecoexplore.net.

Science Across NC

Science Across NC is a collaboration of organizations, including the North Carolina Botanical Garden, offering quarterly events to get people outside and participating in research-based science. Earn badges for each event by collecting and submitting data. Learn more at scienceacrossnc.org.



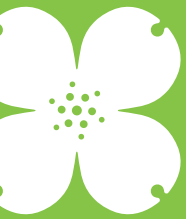
**SPRING
PLANT
SALE**

SATURDAY, MAY 6; 9 A.M.-1 P.M.

Improve the biodiversity in your backyard with native plants from NCBG and other local vendors.

NCBG.UNC.EDU/NATIVE-PLANT-SALE





Citizen Science at the Herbarium

BY CAROL ANN MCCORMICK, CURATOR, UNC HERBARIUM

The University of North Carolina at Chapel Hill Herbarium is no stranger to citizen scientists. I'd guess that 10% of our vascular plant specimens were collected by people who are not botany graduate students, professors of taxonomy, or scientists with state or federal agencies. What we today call a "citizen scientist" in the past may have been called "a talented amateur" or "a keen observer of the local flora." While some of our Citizen Scientist Collectors have jobs with nothing to do with science, many have jobs that use botany in very practical ways – forestry, horticulture, or gardening.

Henry Ashby Rankin

One "keen observer" was Henry Ashby Rankin, born in Fayetteville, North Carolina in 1872. He owned a sawmill and plywood business. Rankin never attended college and it's not known how he came by his love and knowledge of botany. In a letter to William Chambers Coker, founder of the Herbarium, Rankin wrote, "I am not a botanist, but am much interested in the flora of the section." Rankin's letter to Coker dated 8 October, 1929, continues, "Last fall I sent Dr. Small of the N.Y. Botanical Garden, specimens of *Parnassia* about which he became rather excited. [Small] said it was the original *P. caroliniana* found by Michaux on the Carolina coast... and I am sending you specimens from Hallsboro [Columbus County, NC] and would like to know – well

I'm just wondering if perhaps [Small] is a little too enthusiastic about multiplying species." French botanist Andre Michaux (1746-1802) found and named *Parnassia caroliniana* from a vague locality in the Coastal Plain of "Carolina." Throughout much of the 19th and early 20th centuries, taxonomists assumed the "coastal plain" locality was erroneous, as *Parnassia* is a plant of cool habitats. However, 120 years later, citizen scientist H. A. Rankin had found Michaux's Carolina Grass-of-Parnassus in the steaming savannas of the Carolinas!

Coker replied in a letter two days later, "I am much pleased to get your specimen of the plant [*Parnassia caroliniana* found near Hallsboro]; it will prove a valuable addition to our herbarium... I would like to get acquainted with you, and suggest that you take some opportunity to run up to Chapel Hill and see our herbarium and Arboretum. I would be much pleased to entertain you while in town." The Herbarium in Chapel Hill curates about 54 vascular plant specimens collected by H. A. Rankin.

Terry Holdsclaw

Jumping forward about 100 years, we continue fruitful collaborations with citizen scientists. In 2002, Terry Holdsclaw, resident of Catawba County, called wanting to compare some plants he'd pressed with specimens in

Left: Grass of Parnassus, *Parnassia caroliniana*, rediscovered in the savannahs of North Carolina by citizen scientist Henry Ashby Rankin in 1929.

the Herbarium. I asked why he doubted his identifications, and he mentioned that the Manual of the Vascular Flora of the Carolina, published in 1968, had not documented the plants from the counties where he had found them. “I remember you telling me,” said Terry, “the Herbarium will take a specimen of anything that does not have a county dot in the Manual. Years ago, I was an undergrad at NC State University ... majoring in Forestry, though I’ve never worked in that field... I ended up in horticulture, landscaping, and the nursery business.” When asked about the most exciting plant he’d found, he answered, “Prairie trillium, *Trillium recurvatum*. But actually, my uncle, Billy Holdsclaw was the one who noticed it first. He noticed that it did not look right for Little Sweet Trillium, *Trillium cuneatum*. I was very excited when it keyed easily to Prairie Trillium – a state record.” Over the past 23 years, Holdsclaw has deposited over a thousand specimens in the Herbarium in Chapel Hill – many of them county records – from Alexander, Catawba, Iredell, and Lincoln counties.

Thomas Jones, Jr. and Mary G. Douglass

Today, fortuitous meetings are facilitated by iNaturalist and Facebook. In October 2022, Thomas Jones, Jr. and Mary G. Douglass posted a photo of *Spinulum annotinum* on Weakley’s Flora of the Southeastern United States Facebook page, seeking confirmation of their identification. Why were they unsure? Stiff clubmoss had never been proven to occur in North Carolina! Within hours their post garnered a flurry of “surprised face” icons and comments such as, “This would be significant if verified – it sure does look to be *Spinulum*,” by Tom Govus and “Wow!!!! What a rediscovery for the region! Last seen in Tennessee on Thunderhead Mtn in the late 1880s,” by Dwayne Estes, and “What a great find!!!! Michaux points awarded! North Carolina distribution added to the Flora of the Southeastern United States... It would be great to get a specimen for the University of North Carolina at Chapel Hill Herbarium (NCU) as documentation,” by Alan Weakley.

Mary Douglass and Tom Jones retired to Buncombe County, North Carolina, about ten years ago, and they have a goal to hike all the sections of the Mountains-to-Sea Trail (MST) in that region. “We’re always looking at plants and insects, anything really, as we hike,” says Mary. Though both studied botany as undergraduates, neither was ever employed in that field. “Both of us have worked for the Animal and Plant Health Inspection Service with the US Department of Agriculture,” says Mary. They met in the 1970s as members of the South Carolina Association of Naturalists (SCAN). Both credit SCAN with expanding their knowledge of natural history and natural places in the Southeast. “During the winter,” says Tom, “I pick a group of plants to study. It is appealing to pick a group that’s not too large and with species that we’ve not yet seen. Last year, it was the clubmosses. I went to Weakley’s Flora



Citizen science duo Thomas Jones, Jr. and Mary G. Douglass

and took notes so I’d be more aware of them.” That day on the MST, Tom was not feeling well, so as Mary hiked ahead, he rested on a rock. “As I sat there, I noticed the *Spinulum* and thought, Wow, isn’t that the clubmoss that isn’t supposed to be here? I took some photos, and when we got home, I showed them to Mary. She was NOT happy that she’d missed seeing this plant!” Mary responded, “I was the one who insisted that he post it on Weakley’s Flora of the Southeastern United States Facebook page, as it certainly looked right to me but we wanted confirmation. We were so pleased when the Herbarium in Chapel Hill asked us to revisit the mountain to collect a specimen. We are proud to see our names associated with this state record. Academics do not always appreciate citizen scientists, but we have found that Keith Bradley (South Carolina Heritage Trust Program) and Alan Weakley (University of North Carolina at Chapel Hill Herbarium) are open to our observations.” Tom and Mary’s *Spinulum* specimen was accessioned into our collection in October 2022.

Becky Dill

iNaturalist has proven to be fertile ground for the Herbarium to discover talented botanists. Ecologist Julie Tuttle was intrigued by plants found in Anson County, North Carolina by “gillydilly.” “I’ve been using iNaturalist for about three and a half years,” says Becky Dill, a.k.a. gillydilly. “My husband, Gene, and I retired to Anson County about 15 years ago. In college I majored in livestock production, though many of my electives were plant related. My husband and I both worked in Standardbred horse racing, and I’ve always enjoyed... looking at wildflowers. In Pennsylvania, I was a master gardener, but when we moved to Anson County, I

encountered many unfamiliar plants. I love to pull over on a rural roadside and take flower photos on my phone, and sometimes I could get an identification using Petersons wildflower guide. Eventually my phone got so full of flower photos it wouldn't function! I found iNaturalist, and when I saw that National Geographic was a developer, and that they stored your photos on their servers (freeing up space on my phone!), and that you could get help with identifications, I looked no further. I started posting and iNat user "jtuttle," whom I now know is Julie Tuttle, was so helpful with identifications. She invited me to join her NC Piedmont Roadside Native Plants project." Tuttle explains, "The purpose of the NC Piedmont Roadside Native Plants project is to document native plant species on high-quality roadsides and powerline rights-of-way... [which] tend to harbor sun-loving native species that historically thrived in open, prairie-like or woodland sites."

Becky Dill continues, "I was startled to find rare plants and plants that hadn't been documented from Anson. In the spring of 2022, I got instructions from the Herbarium on how to collect and press plants, so I've been prioritizing plants that have not been documented from Anson County. I find nc-biodiversity.com to be so useful to determine which plants need documenting. For example, I know a place in neighboring Richmond County where giant ironweed, *Vernonia gigantea*, grows, so in August I went to collect it for the Herbarium. However, the Department of Transportation had graded and cleared the roadside, so the plant was gone. On my way home on a rural roadside I saw a tall aster with yellow flowers on naked stems, and my wildflower-identification-at-45mph was *Helianthus atrorubens*. I stopped, and upon looking closer I realized it was, prairie dock, *Silphium terebinthinaceum* – a county record! I posted it on iNaturalist, the botanists at the NC Natural Heritage Program saw it, and they contacted Bruce Sorrie, who asked if I could take him to the site." Bruce Sorrie wrote of their September 2, 2022 foray, "As some of you may know, Becky Dill discovered a new pop [population] of *Silphium terebinthinaceum* earlier this week. It piqued my interest so met her today in the Triassic Basin portion of the county. This healthy roadside pop harbors at least 40 flowering plants plus other individuals with just



Herbarium specimen of muck sunflower (*Helianthus simulans*) collected by citizen scientist Becky Dill.

basal leaves. As a follow-up we walked to the nearby powerline where immediately we were surrounded by *Tridens stricatus* (!), "longspike tridens, last seen in North Carolina in 1957 and known only from four counties. We estimated >250 culms without having traveled very far into the powerline. Other county records included *Hypericum virgatum*, sharp-leaf St. John's-wort, and *Lechea tenuifolia*, narrowleaf pinweed... Obviously this area of mafic soil needs additional fieldwork and Becky will return again soon."

"What are my goals for 2023?" said Becky Dill when we chatted in early January 2023. "Let's see. Collect *Carex vestita* in Anson County. UNC-Chapel Hill grad student Eric Ungberg alerted me to this species as he'd found it in Montgomery County. I think I have found it in Anson County, but I need to get a good specimen. And who knows what else is in Anson County, waiting to be found – that's what keeps me exploring the beautiful roadsides of Anson County"

The Herbarium always has and always will depend on volunteers, students, citizen scientists, and botanists to continue our mission to document and conserve the plants and natural places which sustain us.

IN THE GARDEN SHOP

Stop by the shop to get your 2023 NC Wildflower of the Year t-shirt featuring an illustration by Dot Wilbur-Brooks! Every year, Dot brings a new perspective to our Wildflower of the Year with a stunning illustration, and this year's is a real showstopper! Show your pride in our native plants by wearing a t-shirt featuring buttonbush!

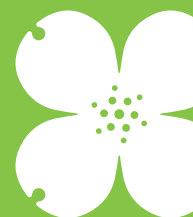




Photo by Edwin Bridges

Staff Pick: Plants for Shade

BY CHRIS LILOIA, NCBG CURATOR, HABITAT GARDENS



Many of us garden in shade. At the beginning of the growing season, spring ephemerals abound followed by familiar perennials like phlox and columbine. There are lots of options for early color but once summer sets in, a shady garden is often dominated by green. Here are a few brighter choices.

Common Jack-in-the-pulpit (*Arisaema triphyllum*) (A) flowers are tiny and generally go unnoticed inside the pitcher shaped spathe that encloses them. That spathe, however, is worthy of notice and can show a lot of variation within and among *Arisaema* species. Spathes, or pulpits, can be green or more colorful with white or purplish stripes, some are small, others large, and even their timing and persistence can differ. The clusters of brilliant red berries that follow are where the real color comes in. Only larger more mature plants make the female flowers which lead to the production of fruit. These ripen in summer and become increasingly apparent as fall proceeds and the lush summer green starts to fade. Solomon's plume (*Mainthemum racemosum*) (B) also has red fruit which ripens in late summer and livens a green landscape. Its arching form helps each leaf receive sunlight and white flowers clustered at the tip are a sweet addition in spring.

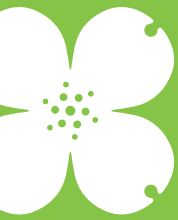
Our native wild geranium (*Geranium maculatum*) (C) looks nothing like the scented geranium we're familiar with

as a bedding plant, but this shade tolerant groundcover produces lots of pink flowers when early spring bloomers are on their way out. Their seeds are dispersed by tiny catapults.

One of my favorite perennials for shade is white wood aster (*Eurybia divaricata*) (D). The starry white flowers topping a sprawl of stems are lovely for a long stretch of summer into fall. They pair well with axillary goldenrod (*Solidago caesia*) (E) which is a great goldenrod for shade. Its bowed architecture complements the asters and their overlapping bloom times makes for a good show.

Smooth oxeye (*Heliopsis helianthoides*) (F) and green-head coneflower (*Rudbeckia laciniata*) (G) round out the sequence with yellow flowers in fall. Both are tall and robust, coarser than the others mentioned above, and capable of grabbing some attention. Smooth oxeye is the shorter and more floriferous of the two; green-head coneflower is taller and great for a wetter site. Both are also good for adding some upright structure and providing interest in the winter and food and habitat for wildlife.

Add a fern like broad beech fern (*Phegopteris hexagonoptera*) (H) and a groundcover like wild ginger, (*Asarum canadense*) (I) and you have a dynamic shade garden.



Growing Native Plants from Seed

BY HEATHER SUMMER, NCBG COLLECTIONS MANAGER & SEED PROGRAM COORDINATOR

As you may recall, in the last edition of *Conservation Gardener*, we provided instructions for collecting your own seeds for propagation. Now we will provide information on sowing those seeds!

What You'll Need

- Trays or pots
- Large plastic bags (large enough for your pots to fit in; gallon-sized is usually sufficient)
- Commercial seed starting mix (this is finer in texture than potting soil and has no added fertilizer)
- Shallow tray without holes
- Possibly: plastic wrap, clear plastic humidity dome, and fertilizer

Storing

Store seeds in an airtight jar in the refrigerator until you are ready to sow.

Sowing

How to sow each species of seed can vary. There are some seeds you'll need to stratify before they germinate, or expose to the equivalent of winter conditions, and others require no pre-treatment. You can find a chart of germination codes for common species at ncbg.unc.edu/ codes, and instructions for each germination code can be found at go.unc.edu/germinationinstructions. General germination strategies include:

- No pre-treatment necessary
- Cold, moist stratification
- Soak seeds in warm water for eight hours before sowing
- Very fine seeds; do not cover with soil when sowing
- Sow seeds directly in garden
- Warm and then cold stratification

Watering

Place entire pot in a shallow tray of water. When the soil mix surface is moist, remove pot from the tray of water and allow it to drain. Always water seeds and small seedlings by this method. Check pots regularly to see if they need watering. They should not dry out or be kept soggy. Keep an eye on them – this early stage is important to survival.

Transplanting

Transplant seedlings into separate pots when they are large enough to handle, usually after two or three pairs of true leaves emerge. Plant seedlings in their permanent garden locations after roots are established but before they are potbound. For very slow growing species, it may take several years before this happens.

Fertilizing

Fertilizing is not necessary until seedlings emerge and have at least two pairs of true leaves. Fertilize seedlings with routine applications of an organic, water-soluble fertilizer at 1/4 to 1/3 the recommended strength during the active growing season.

Additional Resources

In a pinch, many seeds will germinate at a low percentage even if you ignore every rule, except the one about keeping them moist. Looking for further information? You'll find a list of our recommended books for seed germination and perennial gardening at ncbg.unc.edu/resources

The article about collecting seeds can be found at go.unc.edu/ConservationGardenerFall22



Invasive Alert: Fig buttercup

BY THE NC INVASIVE PLANT COUNCIL

Fig buttercup (*Ficaria verna*) is an invasive plant aggressively taking over floodplain and streamside ecosystems in North Carolina. Its bulblets and tubers spread easily through water to start new colonies. Once established, it creates dense mats that out-compete native plants and disrupt the natural balance of our ecosystems.

Also called lesser celandine and pilewort, fig buttercup is generally only visible above ground in winter and spring. Its leaves appear in winter, and then its yellow flowers appear in March and April. By early summer, the flowers and leaves die back, and the plant becomes dormant until the following winter.

Native to Europe, North Africa, and West Asia, fig buttercup has long been invasive in the northeastern U.S. In the last 10 to 15 years, it has increasingly become a problem here in North Carolina. Sometimes grown as an ornamental plant, it can spread from home gardens into nearby streams and floodplains and through mulch.

How can I identify fig buttercup?

It's important to correctly identify fig buttercup before trying to remove it, as we have a number of low-growing yellow native wildflowers here in North Carolina that look similar. See the sidebar for a description of its characteristics.

What should I do if I see it?

Make an observation on iNaturalist! iNaturalist is a joint venture between the California Academy of Sciences and the National Geographic Society that allows you to upload location-specific photos of plants, animals, and fungi to its free website or app. If you upload your observation of fig buttercup to iNaturalist, it helps track the plant's spread through the state.

Or email to report your sighting! If you're not comfortable with iNaturalist, send an email noting the location of the sighting, preferably including photos, to figbuttercupnc@gmail.com.

Learn more about fig buttercup at nc-ipc.weebly.com/fig-buttercup-project.html

NORTH CAROLINA BOTANICAL GARDEN



Fig Buttercup Characteristics

Location: You're most likely to find fig buttercup near a stream or along a floodplain forest.

Leaves: Dark green, shiny, hairless, succulent, heart-shaped.

Stalks: Smooth and hairless

Flowers: Bright, buttery yellow flowers with eight petals (occasionally more) and a slightly darker center. Each flower sits singly on a stalk above the leaves.

Habit: Grows low to the ground. A large infestation can appear like a green carpet with yellow dots over the forest floor.



Staff from the Garden and UNC's American Indian Center celebrate the progress of the new cultural garden.

American Indian Cultural Garden Growing

UNC's American Indian Center has long planned a garden space featuring plants and elements important to American Indian culture, and the Garden has been a proud partner in this process. We are so excited to announce work has begun on the new garden's site, after receiving approvals from UNC, the Town of Chapel Hill, and the historic district where it is located. The new garden space will wrap around our Carolina Community Garden, and several Garden staff helped clear the land of invasive species, opening up a canvas for the new space. Consider donating to this project at go.unc.edu/AICG.

Sustainability Tip: Shredded Paper

BY JANNA STARR, SUSTAINABILITY INFLUENCER, INSTAGRAM @WASTEFAIRY

What should you do with shredded paper? Shredded paper has shortened fibers, making it difficult to recycle. Check with your local municipality's waste management website to see if they accept shredded paper in curbside recycling or at a special drop-off. In North Carolina, Orange, Durham, and Wake Counties do not accept shredded paper for recycling. Before you shred a document, think about if it needs to be shredded. And, rather than throwing your shredded paper in the trash, consider adding it to your compost bin or worm bin, or using it for packing or shipping fragile materials.



**EVELYN MCNEILL
SIMS LECTURE**

ARCHITECTS OF ABUNDANCE: INDIGENOUS REGENERATIVE LAND MANAGEMENT AND EXCAVATION OF HIDDEN HISTORY

**APRIL 2: 5:30-6:45 P.M., VIRTUAL AND IN-PERSON OPTIONS
FREE - PREREGISTRATION REQUIRED**

Lyla June Johnston, an Indigenous musician, scholar, and community organizer of Diné (Navajo), Tsétsêhéstâhese (Cheyenne) and European lineages, will share her research about ways pre-colonial Indigenous Nations gardened large regions of Turtle Island (aka the Americas) to produce abundant food systems. Contrary to popular belief, Indigenous Peoples leveraged immense influence on their surroundings in ways that could heal our planet today. Her work brings this poorly understood history to the Western world and highlights the connection between Indigenous land ethics, decolonial narratives, and more.

DETAILS AT NCBG.UNC.EDU/SIMS



Renewing a Campus Treasure

The Coker Arboretum arbor is an iconic part of the UNC campus. Last replaced 25 years ago, its black locust timbers had begun to deteriorate, and the walkway under the arbor ended in a flight of stairs that made the path inaccessible to many people. The North Carolina Botanical Garden Foundation is partnering with the Garden and UNC Facilities Planning and Design to renovate the arbor and walkway to ensure they're safe, accessible, and able to be enjoyed by students and community members for years to come.

The new walkway will have a new, sloping grade, roughly parallel with adjacent Cameron Avenue. In addition to better accessibility, this will mean greater visibility for public safety officers and community members in the Arboretum.

Andropogon Associates is developing the design plan for the future arbor. From community meetings, we know it's important the structure maintain its rustic character and the play of light and shadow in the space. The stone gathering circle to the side of the arbor will remain in place, and the new arbor and walkway will connect to it.

Meanwhile, the old arbor has been removed. Construction of the new walkway will begin in August, and the new arbor will be constructed in October and November. The vine collection will be replanted in December.

The Class of 1997 contributed funds for the arbor 25 years ago, and they are renewing their senior class gift for their 25th anniversary. Thanks to leadership from North Carolina Botanical Garden Foundation Director Ladell Robbins, Class of 1997 president, they have raised significant funds for this project. Read more about Ladell and the Class of 1997 on page 18.

You can help us rebuild this campus treasure! Make a gift today at go.unc.edu/arbordonation. For questions about making a gift, contact Stephen Keith at 919-962-9458.



The arbor has been removed and will be rebuilt in late summer/fall 2023.

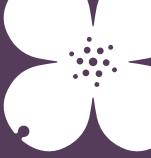


**CAROLINA
MOONLIGHT
GARDEN PARTY**

SATURDAY, MAY 20; 6-9 P.M.

Join us for the Triangle's premier garden soirée as we welcome the community to our courtyard garden for an evening of fun and festivities with botanical flair. Secure your tickets, become an event host, and invite your friends to experience the Garden at twilight for our largest fundraising event of the year.

NCBG.UNC.EDU/MOONLIGHT



DONOR SPOTLIGHT: LADELL ROBBINS LEADS CLASS OF 1997 TO SUPPORT ARBOR REPLACEMENT



North Carolina Botanical Garden Foundation Director and Class of 1997 Senior Class President Ladell Robbins worked this past year to organize his classmates to support the Coker Arboretum's capital project to replace the beloved wisteria arbor.

Ladell recalls, "My earliest memories of the Coker Arboretum are from freshman orientation. As a student I would often pass through the Arboretum, but before I knew it, the Arboretum became the destination." Along with Amelia Zelnak, Class of 1997 Vice President, Ladell spent the summer of 1996 on campus making plans for the upcoming school year. Given the tragic fraternity fire in May of 1996, which resulted in the death of several class members, there was a strong urgency to have an impactful senior class gift. "Our idea was to find a senior class gift connected to a place where people gather, have the occasion to rest and reflect, and enjoy the natural environment."

The Class Marshalls agreed, and 25 years ago, Carolina's

Class of 1997 accepted the North Carolina Botanical Garden's proposal to fund a project to replace the 300-foot wooden arbor and build an adjacent central stone gathering area in the Coker Arboretum. This site was chosen as the senior class project to not only enhance an iconic location at Carolina, but to also remember classmates who died before graduation.

In 2022, with 22 members of the Class of 1997 homecoming planning committee, Ladell orchestrated a committee challenge to engage classmates to recommit to their original senior class gift in celebration of their 25th reunion. With gifts still coming in, they have inspired more than 85 donors and raised \$45,000, easily surpassing their original class gift total.

Ladell and his classmates have a special affiliation with the Coker Arboretum and invite all Carolina alumni and community members to support the arbor renovation. "I encourage others to support Coker Arboretum because it is a living space on UNC's campus that provides knowledge, peace, healing, and joy to all its visitors."

You can follow the plans and construction timeline of the arbor renovation at ncbg.unc.edu/arbor. You still have time to support this community effort!

Imperiled Plant: Gray's Lily

Gray's lily (*Lilium grayi*) is listed as Critically Imperiled by NatureServe. This perennial wildflower grows in early summer at high mountain elevations in moist meadows, bogs, and forests. It is mostly found in North Carolina, but small numbers have been found in Virginia and Tennessee.

The decline in population is due to habitat alteration, succession, and wild collection. In addition, lily spot disease has recently been attributed to significant decline. Other threats include hybridization with *Lilium canadense*.

Gray's lily is found in the protected lands of Roan Mountain, the Blue Ridge Parkway, and Bluff Mountain. The Garden has been working with this species for decades through the Center for Plant Conservation. We have been seed banking populations for the past few years to protect against decline due to lily spot disease.

Want to learn more about Gray's lily and the work to conserve this plant? Ben Brewer was awarded the 2022 NCBG Award for his field research as a graduate student at Appalachian State University. Watch his Lunchbox Talk on this topic at go.unc.edu/grayslily



Gray's lily (*Lilium grayi*) Photo by Will Stuart

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

A Conservation Legacy

BY STEPHEN KEITH, DIRECTOR OF DEVELOPMENT

Do you remember your last hike in the woods or stroll through a wildflower meadow? Or perhaps you remember your last visit to the native plant collections of the North Carolina Botanical Garden. The rich biodiversity in these areas reminds us of the need to preserve and protect plants and animals (including insects, too!) all around us. Your participation with the Garden has a positive impact on projects highlighting biodiversity in the region. There are so many ways you have boosted the natural world.

In the summer of 2022, we hosted a second phase of planning for future enhancements of Koch Memorial Forest Theatre on UNC's campus focused on a business model and business operation study. Community members **Stewart Parker, Alice & John May, Tom Kenan, Paula Noell, Mal & Amanda Watlington, Patricia Beyle, and Lynn Knauff** ensured we had the funds to hire the consultant firm Theatre Projects to lead community workshops and local focus groups. Thank you to the many survey respondents who helped shape the overall vision.

A record number of you gave over the summer and fall of 2022, and gifts to the general fund allow the Garden to meet its mission through its annual budget. Several larger annual gifts in the first half of the fiscal year from **David & Laurie Joslin, Fran & Gary Whaley, Mike & Elston Miles, Janis McFarland & Rich McLaughlin, and Anne Harris**, along with many others who responded to the end of year campaign, have kept the Garden in solid financial standing. This spring

and summer you will continue to have opportunities to support the Garden through the spring brochure, through Event Host or Corporate Partner sponsorship, through GiveUNC, or by celebrating with us at the Carolina Moonlight Garden Party, the Garden's largest fundraising event of the year. **Harriet and DG Martin** are our first



Wild bleeding-heart (*Dicentra eximia*)

2023 Carolina Moonlight Event Hosts, and they invite many more supporters to join them.

Thank you for continuing to renew and share information about membership in the North Carolina Botanical Garden Foundation. Membership payments provide for daily needs at the Garden and support the people, programs and exhibits that make the Garden whole. With over 3,000 memberships, the Garden has a broad base of support. We are especially grateful for our Director's Circle and Sustainer members who provide aspirational support. We recognize these members in each magazine publication (see page 22).

With an outpouring of support for open space preservation, we look forward to closing on a land deal to expand Stillhouse Bottom Nature Preserve. Thanks to many community gifts and the final pledge payments of an Anonymous Donor, **Betty Lou & David Chaika, Lyn Headley, the New Hope Audubon Society, Richard & Karen Taylor, and Zhi Hong**, more land in Chapel Hill will be preserved and foster local biodiversity. All donors to this project will receive an invitation to a dedication celebration once the land is officially transferred.

Many of you made the Coker Arboretum's recent capital project a priority. We began fundraising for the Arbor renovation in the fall of 2022, coinciding with the Class of 1997's recommitment to their senior class gift. You can follow the plans and construction timeline of the arbor renovation at ncbg.unc.edu/arbor/ and you still have time to support this campus icon. We are grateful for the recent gifts of **Ladell Robbins '97, Matthew & Paige Guest '97, Chris & Katie Tebbit '97**, and many others (see page 18) to galvanize fellow class member participation. We also thank Carolina alumni **Tom Kenan, Clay & Jane Harrell, and Jinny Clancy** for their recent gifts to raise funds to rebuild the wooden arbor, with construction slated for late summer 2023.

There are many projects and priorities at the Garden, and it takes many dedicated folks to keep NCBG a national leader in public gardens. With Conservation, Learning & Engagement, and Horticulture staff working throughout the Triangle area, we have 14 named sites to

Continued on page 22.

Thank you for choosing to honor or remember friends and family through a gift to the North Carolina Botanical Garden.

Tribute gifts received between July 1 and December 31, 2022

IN HONOR OF

Mike and Mary Andrews

Jonathan L. Andrews

John William Benning

Thomas F. and
Betsy Lark B. Benning,
for Friends of UNC Herbarium

Catherine Bollinger and Thomas Scheitlin

David M. and Susan H. Bollinger

Rena and Jim Cauley

Greg Cauley, for Coker
Arboretum Improvement Fund

Julie Coleman

For Piedmont Nature Trail
Expendable

Louise W. Barnum
Reverend Margaret G. Crandall
Kathleen Hauser
Lynne K. Hicks
Susan H.* and David W. Keesee
Mary Ellen and Michael Olson
Martha B. Petty

Patsy Decker

Kathleen and
Todd Shapley-Quinn

Jean DeSaix

Sonny Browne and
Joseph Robertson, for Coker
Arboretum Endowment
and Coker Arboretum
Improvement Fund

Nancy Easterling

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

Ezra and Zoe Efir

John D. and JoNell C. Benson

Lutte Lee Erwin

Adaline C. Smith and Gene
Liau, for Botanical Garden
Conservation Fund, Coker
Arboretum Improvement Fund,
and Educational Outreach

Joanne Gardner

John K. and Sherene S. Min

The Gavin and Miller Families

Hannah E. Gavin, for Coker
Arboretum Improvement Fund

Katie Geith and Kelly Geith

Christine Geith,
for Mason Farm Endowment

Matt Gocke

Thomas A. and
Barbara B. Driscoll,
for Horticulture Fund

Jack Haggerty, in celebration of his birthday

Susan Kuhbach, for Mason Farm
Biological Reserve

William A. Johnson and Shirley J. Werner

Mary L. Johnson

Kylie Joyce

Kathy and Joseph Joyce, for
Carolina Community Garden

Stephen L. Keith

Sally S. Glover,
for Educational Outreach

Richard LeBlond

Hervy and Jane McIver,
for Friends of UNC Herbarium

Chris Liloia

Ken Moore and Kathy Buck,
for Horticulture Fund
Steven and Laurie Prentice-Dunn

Claire Lorch

Patricia M. Collins, for Carolina
Community Garden

Claire Lorch and Fred Stang

For Carolina Community Garden
Hannah Stang and Ryan Hanlin
Howard J. and Jill M. Stang

Margo Lassiter MacIntyre

For Coker Arboretum
Improvement Fund
Valerie Bateman and
Robert Jessup
Ken Moore and Kathy Buck

Emilie P. de Luca, for Coker

Arboretum Endowment
Mark C. and Jane M. Ritchie, for
Coker Arboretum Expendable

Harriet Wall Martin

Kathryn E. Bell

Jim Massey

For Friends of UNC Herbarium
Elizabeth L. Ley
Michael J. Papay

Carol Ann McCormick

Gwendolyn B. and Aziz Sancar,
for Friends of UNC Herbarium

Katherine Meehan

Thomas A. and Barbara B.
Driscoll, for Horticulture Fund

Ken Moore

Jeffrey P. and Dianna C. Mazza

Claude Lafitte Morganti

Martha A. Magenheimer, for
Educational Outreach and
Friends of UNC Herbarium

Betsy Green Moyer

Paul M. and Catherine M. Green,
for Natural Areas Endowment

NCBG Staff and Volunteers

Maura E. High

Geoffrey Neal

Ken Moore and Kathy Buck,
for Coker Arboretum
Improvement Fund

Charlotte Louise Offerdahl

Olivia N. Shelton
Lynn S. Wilson and Paul Killough

Our children

Alfred and Lyn Wilson, for
Natural Areas Endowment

Derick Poindexter

Diane B. Laslie, for Friends of
UNC Herbarium

Johnny Randall

James Joslin and Beth Hahn,
for Stillhouse Bottom Natural
Area

Missy and Sam Rankin,
for Botanical Garden
Conservation Fund

Johnny Randall and the NCBGF Conservation Committee

Ken Moore and Kathy Buck,
for Stillhouse Bottom Natural
Area

Stephen and Sandra Rich

Joel and Nancy Isenberg, for
North Carolina Botanical
Garden Director's Fund

Tom and Margaret Scott

Jane Royster

Aislinn and Matthew Spain

Peggy L. Hickie, for Summer
Camp Scholarships

Kathy Strader

Donna and Rodney Tucker, The
North Carolina Botanical
Garden Student Intern Fund

Alan S. Weakley

Dan Pittillo, for Friends of UNC
Herbarium

Bob Wendell

Stephen A. and Sandra D. Rich,
for North Carolina Botanical
Garden Director's Fund

Dot Wilbur-Brooks

Brooks and Chris Graebner, for
Educational Outreach

IN MEMORY OF

Ross Andrews

Wendy E. Sarratt

Lois Anderson Annab

Mike and Mary Ann Boddie,
for Botanical Garden
Conservation Fund
H.R. and Betsy Malpass

Raymond Lindsay Barron

Albert T. and
Jane Barron McAdoo

Thomas Braswell Battle

Henry Grossberg, for Battle Park
Endowment

Alma Holland Beers

Stan and Sarah Holland, for
UNC Herbarium General
Endowment

Violet Elizabeth Briggs

Stephanie D. and
Samuel P. Davis III
Terry L. Noah and
Margaret R. Helton
Jessica T. Stark
Sue Tolleson-Rinehart

Melinda Kellner Brock

For Melinda Kellner Brock
Terrace
Katherine Magill Walters
Suzanne, Dan, Sophia, and
Phoebe Weintraub

C. John Burk, Jr., UNC '59

Låle A. Burk

Annalee Dale Cairns

Ellen L. Cairns, for a Botanical
Garden memorial bench

Milton Cantor

Robert P. and Susan S. Wolff

Eve Carson

Ashley E. Sakwa and
Jack A. Nichols

Reece and Kathryn Chambers

Charles J. and April C. Bocholis

Gretchen Cozart

Thomas A. and Sallie N. Cozart
Gene G. Foster
Lacy M. and Sydnor C. Presnell

Arthur St. Clair DeBerry, Jr.

Mary Bland Josey

Susan Dennis

Country Oaks Garden Club

John E. Dodge

Rush & Associates, Inc.

Katharine Dupree

Sonia J. Colnot, for Coker
Arboretum Endowment

Jo Anne L. Earp

H. Shelton Earp III, for Coker
Arboretum Improvement Fund

John M. Foushee, Jr.

June K. Foushee

Rob Gardner

Laura I. and Vann W. Evans

Philip Edmund Greer

Michael F. and Barbara D.
Perkins, for Coker Arboretum
Improvement Fund

Marcella T. Grendler

For Coker Arboretum
Endowment
Harriet and D.G. Martin
for Coker Arboretum
Improvement Fund
Colin and Annabelle Devonport
Judith Drost
Clare and Donna Grendler

Francis and Peggy Grendler

Stephen L. Keith and
Lisa C. Glover
James H. Leshner and
Eleanor S. Rutledge
Philip A. and Margaret S. Rees
Roberta and Douglas Tilden
Bob and Barbara Wendell
Gary M. and Frances D. Whaley

For General Support

Minna and Haven Whiley

Victor A. Greulach

Susan Greulach Scharff and
Joseph Scharff, for Friends of
UNC Herbarium

Janine Giacomini Guimberteau

Jeffrey A. Dulude, DDS
Andrea and Adrian Mesoznik

Brigitte Hamilton

Joann Currier

Frank Hampshire

Nancy Hampshire

Jim and Frances Hart

Anonymous

Letitia Haworth

Lance Haworth

Virginia Hill

Shayna A. Hill, for Botanical
Garden Conservation Fund

Walter C. Hill

Michael Charters, for Friends of
UNC Herbarium

Michael K. Hooker

Carmen H. and
Thomas L. Odom, Sr.

Frederick Johnston Houk, Jr.

For Fred and Virginia Houk
Sustainability Internship Fund
Thomas N. and
Nancy J. Chewing
Virginia S. Houk

Joanna Howell

Meredith A. and Brian P. Niles,
for Class of '97 Restoration

Jonathan B. Howes

Mary Cook Howes

Jingfan Huang

Zhi Hong, for a Botanical
Garden memorial bench and
Stillhouse Bottom Natural
Area

Inky

Dixie Z. Damrel, for Friends of
UNC Herbarium

Pamela Elton Jenks

Pattie Purcell Bonham, for Coker
Arboretum Improvement Fund

Jill Frackenpohl Jordan

Diana L. D'Abruzzo,
for Class of '97 Restoration



MONTHLY GIFT

You can support 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.

Alexander Eugene Kenan
Katie Bobbe, for *Carolina Community Garden*

Fred Oliver and Mary Waggoner Kiger
Fred W. Kiger and Karen T. McCall, for *Battle Park Endowment*

Steven Worth Leonard
Charles M. and Carol C. Aregood Wilson Baker and Mary-Anne Bestebeurtje John B. Nelson, for *Friends of UNC Herbarium*

Mary MacFadyen, UNC Medicine Class of 1927
Francine N. Roberson, for *Coker Arboretum Improvement Fund*

Alan MacIntyre
Brian J. and Julia S. O'Grady

Liz Mahanna
Katya M. Prince, for *Botanical Garden Conservation Fund*

Jinny Marino
Anna M. DeConti, for *Educational Outreach and Horticulture Fund*

Ralph McCallister
David and Amy Sutter, for *Educational Outreach, General Operating Fund Endowment, and The North Carolina Botanical Garden Student Intern Fund*

Thelma and Josiah McClain
Matthew P. Herman and Kevin Wilson

George D. McCoy
Phillip Ray Poovey

Harold McFarland
David Fitts Sarah and Ben Knotts Blanche, Bill and Patsy McFarland Sue Miller Howard and Rita Willett

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

Scott McLean, Jr.
Jean C. Stewart, for *Battle Park Endowment*

T. L. "Larry" Mellichamp
William J. Duffield, for *North Carolina Plant Biodiversity Research Fund*
Audrey D. Mellichamp, for *Botanical Garden Conservation Fund*
George C. and Lynda B. Waldrep

Carol Lasher Miller
Cyrus I. Miller

Donald Lee Moore
Gail Moore

Grover Elmer Murray
Sally M. Murray, for *Friends of UNC Herbarium*

Robert Samuel (R.S.) and Yeran Kazanjian Najarian
Allison L. Essen

Norlene Newcomb
Martha Coates

François Nielsen
Martha L. Diehl

Jessi Seawright Ogburn
James H. and Melinda W. Ogburn, for *The North Carolina Botanical Garden Student Intern Fund and General Support*

Linda Brown Palladino
Martha Baldwin Stacie Belcher Hal and Jeanne Brown Greg and Megan Campbell Sandi Donohue Angela Ensley Mike Fahmie Annie Galloway Dana Gelin Paige Green Richard and Betty Kent Irene Kesselman Jenny and Joey Okun William W. Palladino, for *a Botanical Garden memorial bench*
Neil and Debi Pedersen Marilynn and Sandy Pittard

Susan Sanderfird Jake Stein and Sayaka Hino Susan Trabka Nicole M. Trimmer Rhonda Underwood Helen C. Wernet Patricia A. Williams Stephanie and Park Willis Brian, Jessika, and Quinten Zimmer

Julie Mitchell Palmer
For Dr. Julie Mitchell Palmer *Endowment for the Natural Areas*
Artecho - Pamela Palmer, President and Landscape Architect
Candace C. Dee

Louise Wilson Pearson
William R. and Margaret Pearson, for *Natural Areas Endowment*

Hannah Pincus
Kelly and Michael Pincus, for *The North Carolina Botanical Garden Student Intern Fund*

Sandra M. Powers
Edward J. Blocher

Cheryl Anne Prather
Country Oaks Garden Club Stephen L. Keith and Lisa C. Glover, for *The North Carolina Botanical Garden Student Intern Fund and Forest Theatre Restoration Fund*
Roberta and Douglas Tilden, for *Battle Park Endowment*

Nancy Pruden
Jean C. Stewart, for *Battle Park Endowment*

Lanie Quade
Martha A. Propst

Albert Radford
Dennis F. and Janice L. Whigham, for *Friends of UNC Herbarium*

Margi Rice
Christine and Robert Berndt

Clifford A. Rinehart, Jr.
Sue Tolleson-Rinehart

Debra Rinehart
Alexander W. Carl, for *Natural Areas Endowment*

David Lawrence Robert
For *Coker Arboretum Improvement Fund*
Mary Clara Capel Karen Henry and Jack Fowle Vincent J. and Katherine C. Kopp Michael A. and Belinda A. McFee Bland and Ann Simpson

For the *David Robert Fund* for the *Coker Arboretum*
Julie and Steve Williams

Caroline H. Royster
John and Betsy Royster

Connie Saunders
Garth and Sarah Saunders, for *Coker Arboretum Expendable*

Francis Reid Senter
James Senter

Thomas A. Sharp
Tyrrell C. Sharp

Norris Smith
Mary N. Mulcahy, for *Friends of UNC Herbarium*

Jean and Pearson Stewart
Jean C. Stewart, for *Battle Park Endowment*

Barbara Stiles and Bernice Wade
Lars G. Schoultz and Jane Volland, for *Battle Park Endowment*

Janice D. Stratton
Margaret B. McCotter Jennifer Tooker

Susan Strickland
Anonymous

Susan Sunflower
Nancy Adamson

Jane Talbot
Andrea and Robert Stark

Susan Toplikar
Mike Cindric

Page Vernon
Jean C. Stewart, for *Battle Park Endowment*
Jim and Alison Vernon

Jackson Alguire Vickery
Catherine Alguire and Bob Durovich, for *Educational Outreach*

Sara Waitt
Joseph A. Marcus, for *Friends of UNC Herbarium*
Ken Moore and Kathy Buck, for *North Carolina Botanical Garden Director's Fund*

Dave Whittington, UNC '77
Kathryn and Peter Enchelmayer, for *Battle Park Endowment*

Anne B. Winfield
Janet O'Neal and Dianne Lindsey, for *Battle Park Endowment*

Charles L. Wyrick, Jr.
James H. and Melinda W. Ogburn, for *The North Carolina Botanical Garden Student Intern Fund and General Support*

*Deceased

WE REACHED OUR \$30 MILLION UNC CAMPAIGN GOAL



the CAMPAIGN for CAROLINA

In the last month of 2022, the Garden achieved its goal of raising \$30 million in cash and commitments during UNC's Campaign for Carolina. What an achievement! Counting gifts since the campaign launch in 2015, your support through annual giving, garden endowments, student internships, land preservation efforts, conservation management, as well as multiple capital projects, all combined to allow the Garden reach its goal. Thank You!

101% OF GOAL

MEMBERSHIP RECOGNITION

Director's Circle and Sustainer members provide aspirational annual membership support to champion our plant conservation mission. The following are members of the North Carolina Botanical Garden Foundation's top membership categories as of December 31, 2022. Thank you!

Director's Circle (\$1,500)

Anonymous (2)
Jim and Delight Allen
Michael and Mary Andrews
Terry and Ernest Ball
Ann Louise Barrick and
J. Elaine McNeill
Ruth N. Benton and
Tod A. Sedbrook
Bruce and Dianne Birch
Bob and Vicky Borden
Christopher E. Bogan
and Mary Katherine Barnett
Cotton and May Bryan
Låle Burk
Barbara J. Burns
Asa and John Butts
John J. Calhoun and
Catherine C. Morris
Claire and F. Hudnall
Christopher
Jinny Clancy
Camilla A. Collins and
Jane R. Bramham
Cindy and Tom Cook
Robin and Lewis Davis
Amy Helwig Dunlap and
Ken Dunlap
Shelley Earp
Muriel Y. Easterling
Louise C. Greene
L. Clayton and Jane M. Harrell
Anne F. Harris
Charles and Jeanne
Hecht
Bob S. Hogan and
Maratha J. Diefendorf
Travis Hornsby and
Christine M. Chu
Mary C. Howes
Eric and Emily Iverson
William A. Johnson and
Shirley J. Werner
Allen and Gina Jones

Charlotte Jones-Roe
and Chuck Roe
David and Laurie Joslin
James Joslin and Beth Hahn
Thomas S. Kenan III
Paul and Phebe Kirkman
Jeffrey M. Lang
Paula LaPoint
Nan and Edgar Lawton
Karen Levine and
Andrew Sisson
Martha S. and Charles A. Lewis
George and Judy Lockhart
Paul and Mary MacDougal
Harriet and D.G. Martin
Alice and John May
Geraldine A. McDowell
Janis E. McFarland and
Richard A. McLaughlin
Mike and Elston Miles
J. Victor Nadler and
Newell Olson
Peg Parker
Stuart and Linda Paynter
Gail Perry and Bill Cobb
Sue and Charles Plambeck
Jordan E. Pomeroy and
Summer A. Crabtree
Sims Preston and Posy Stone
L. Richardson and
Marilyn Jacobs Preyer
Judith Rizzo and
Arthur Kempton
Frances P. Rollins
Jenny and David Routh
Joseph H. Roycroft, Jr.
Kathleen and
Todd Shapley-Quinn
Thomas O. Stair and
Lucy H. Caldwell-Stair
E. Preston Stockton and
Diane Wise
Charles V. Taft
Sandy and Reaves Thompson
Carol Tresolini and Tom Fiore
Damon E. Waitt

James and Mary Wescoat
Fran and Gary Whaley
Pauline H. Williams and
Rob Davis
Mark and Stacey Yuskos

Sustainer (\$500)

Anonymous (3)
Mary and Gary Anderson
Amy C. Barr
Betsy and Walter Bennett
Patricia C. Beyle
Barbara V. Braatz
Stephanie C. and Jon D. Briggs
Eleanor H. Broadus
Valerie B. Bronner-Zamora
Nathan A. Bryant and
Katherine Meeks
Michelle A. Burdick
Cliff and Linda Butler
Nathan and Stephanie Byrd
Katharine M. Chapman
Susan T. Clark
Susan Coppola and
Michael W. Tilson
David and Anne Cottingham
Jeffrey L. Dangel and
Sarah R. Grant
Van W. Daniel
Janet and Jim Dean
Mignon R. DeBerry
Nancy Doubrava
John and Gail Dove
George R. and Mary B. Elmore
Katherine and Joseph Ely
Sara and Robert Euler
Jim and Mary Jo Fickle
Gene G. Foster
Greg Fitch and John Sweet
Kinsey C. Fisher and
Andrew N. Zachman
June K. Foushee
Kim and Stephen Fraser
Joanne K. Gardner

Julie and Pete Gaskell
Sally Sue Glover
Brooks and Chris Graebner
Cami and Charles Gregg
David and Joan Guilkey
Jan Hansen and Susan Blackford
Deborah L. Hill and
Julia G. Mack
Pat and Gene Holder
Susan Hollobaugh
Herbert Hurwitz
Richard K. Johnson
Susan and Lewis Kellogg
Robert and Susan Knapp
Thomas H. Krakauer
Shawn R. Kruse and
Mary M. Engel
Susan J. Lamb
Randy and Cathy Lambe
Jodie A. LaPoint and
Chris Weymouth
Winston Liao and Carol Hazard
Mark R. Little
Caroline and Don Lloyd
Junella and John Macrae
H. R. and Betsy Malpass
Joel D. Mattox and
Karen Perizzolo
Michael and Marcia Mayo
Eugenie and Matthew
McDonald
Ross and Holly McKinney
Peter and Prudence Meehan
Cyrus L. Miller
Susan and James Moeser
Pauline and David Moreau
Jef Morgan
Nell and C.L. Morton
Beverly and Robert Murdock
Sally Murray
Edward Neal
Scottie and David Neill
Linda W. Norris
Charlotte Offerdahl and
Grady Burgin
Joey and Jennifer Okun

Marian and Jeff Olson
Florence and Jim Peacock
Nick and Amy Penwarden
Ona and Peter Pickens
Chris and Bill Piscitello
Allan and Carrie Porterfield
Nancy and Ed Preston
Jane B. Preyer and Lark Hayes
Jim Protzman and Jane Brown
Missy and Sam Rankin
George S. Ramseur
Deborah L. Reichert and
Chanchal Samanta
Alan Rimer
Mark and Jane Ritchie
Sharlie and Todd Robbins
Sallie S. Robinson
Brenda H. Rogers
Michael K. Salemi and
Ariana Pancaldo
Margaret E. Scarborough
Yolanda V. Scarlett
Marika and Jonathan Schoolar
David and Nancy Schoonmaker
Tom and Margaret Scott
Jane M. and Robert H. Slater
Nancy S. Spencer
Mary P. Stephenson
George D. Stuart
Sherry L. Stuesse
Michael and Dominique Toedt
Steve and Denise Vanderwoude
Mary Coker Vilas
Richard and Judith Vinroot
Patrick W. Wallace and
Laurie E. McNeil
Ralph and Barbara Warren
Mal and Amanda Watlington
Deborah and M. Holland West
Peter and Carolyn White
Floyd and Diane Whitney
Tin-Lup and Sandy Wong
Cynthia Kaye Woodson

Continued from page 19.

manage, including over 1,200 acres of Garden, Foundation, and State-owned lands. A recent large gift to build the Battle Park Endowment by Eunice Brock & Sam Magill will provide Natural Area Steward Ben Heuser with the resources to sustain the care of the forest and trails. A second gift from Bill Bracey is ensuring our greenhouse and nursery operations can operate sustainably (think compostable pots!). Your continued support and enthusiasm allows the plant conservation mission to thrive in many locations.

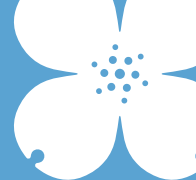
You helped us meet the North Carolina Botanical Garden's overall campaign goal in the 'Campaign for Carolina' (see page 21) that officially concluded at the end of 2022. Meeting and exceeding the \$30 million goal is a huge accomplishment to support the current and future efforts of the Garden. Since the campaign began in 2015, you helped us double our annual giving, created three new student internship endowments, established three new conservation management endowments, allowed us to design compelling and beautiful interpretation, implemented the Entranceway Master Plan, renovated the growing operation and greenhouse facility, funded the acquisition of land to increase the natural areas of Parker Preserve and Stillhouse Bottom, and created a native plant

materials development center at Mason Farm. And much more!

As I calculate the successful 'Campaign for Carolina' at NCBG, planned giving and bequest commitments are a staggering 55% of our total. This reminds me how deeply you care about the future of plant and land conservation. Planned giving is an excellent way to have a direct impact on the Garden's core mission in conservation, research, native plant horticulture, education, and engagement. As always, the development team at NCBG and UNC are available to help you craft your conservation legacy. Please contact me for more information.

As we enjoy another spring renewal and marvel at nature's vast tapestry, I encourage you to visit the many areas managed by the Garden and delight in all the opportunities, both virtual and on-site, to explore your role in plant conservation. Your gifts and contributions continue to keep the Garden growing. Thank you.

Stephen Keith
skeith@email.unc.edu
919-962-9458



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 2022 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 STEWARDS



HABITAT SUSTAINERS



GARDEN SUPPORTERS



MARK YOUR CALENDAR

April 2
**Evelyn McNeill Sims
Native Plant Lecture**
hybrid with speaker

May 6
Spring Native Plant Sale

May 12-21
Go Public Gardens Days

May 20
**Carolina Moonlight
Garden Party**

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

September 29 & 30
Fall Plant Sale

October 22
Fall Family Funday

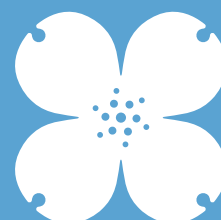
November 5
**Jenny Elder Fitch
Memorial Lecture**

November 17
**NC Botanical Garden Foundation
Membership Meeting**

December 2
**Winter in the Garden
NCBGF Member Holiday Party**

December 3
**Winter in the Garden
Craft Market**

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

