

CONSERVATION GARDENER SPRING/SUMMER 2022

\$4 95

THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

ON THE COVER

Echinacea laevigata

smooth purple coneflower



IN THIS **ISSUE**

Wildflower of the Year 5 Managing Biodiversity 6 Restoring a Rare Plant 8 A River Runs Around It 10 Restoring Culture 14 Staff Pick 16 Coker Arbor Renovation 18



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

Ex Situ?

BY DAMON WAITT, NCBG DIRECTOR

Dear Members and Friends,

As repositories of plant biodiversity, botanical gardens are oft cited as the paramount example of *ex situ* (out of place) plant conservation. Over 30% of the world's plant species are represented in botanical gardens either as part of their living collections or as seed banked material. This equates to over 100,000 species! A little more than half of those species have been banked in one of world's 350 seed banking botanic gardens including more than 9,000 species that are threatened with extinction.

The North Carolina Botanical Garden is one of these gardens.

As a Garden that celebrates a sense of place, it seems contrary to think of the North Carolina Botanical Garden as practicing out of place (*ex situ*) conservation. Taking a walk through the Garden's habitat displays, from mountains to the coast, featuring plants native to the region, one would think everything was in its natural place (*in situ*).

Not so. While the Garden funnels the flora of North Carolina and

surrounding states into a 12-acre footprint, it is only a demonstration of what one would hope to find *in situ* in those undisturbed areas that have escaped the touch of overexploitation, habitat loss, and invasive species. I say only, but as you read the articles in this issue of Conservation Gardener you will discover there is tremendous conservation value in maintaining and curating an *ex situ* seed bank and an *ex situ* living collection.

Compared to *in situ*, *ex situ* conservation has historically suffered from an inferiority complex as the lesser of the two approaches to preserving plant biodiversity.

Not so. With natural habitats rapidly disappearing and the number of imperiled plants rapidly growing, *ex situ* conservation is gaining in importance. Most consequential is the use of *ex situ* collections (banked or living) to take *in situ* action as you will see in Michael Kunz's article, Managing Biological Diversity in a Constantly Changing World. That handshake between *ex situ* and *in situ* conservation, is why the Garden has:

- Travelled the back roads of the Southeast for 45 years collecting and banking the seeds of both rare and common species of native plants.
- Created a Native Plant Materials Development program to make bulk seed available for the restoration and rehabilitation of native plant communities.
- Curated a living collection of over 2,000 species in the its garden displays for over 50 years.
- Banked millions of seeds including seed from 39 populations of Venus flytrap as a bet hedging strategy against extinction in the wild and for use in research and restoration.

Ex situ?

You bet! We're *ex situ* (and *in situ*) and we wouldn't have it any other way.

Sincerely Yours,

Atrold

The Garden's Native Plant Materials Development Program is growing plants to increase seeds and seedlings available for restoration efforts.



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 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

RARE PLANTS

Have you ever wondered why the Garden doesn t just sell more rare plants to increase their populations? Saving plants is quite complicated, and selling rare plants to gardeners actually makes matters much more complicated. As a rule, the Garden will never sell plants whose sale or possession requires a state or federal permit. Read more about our rare plant policy:

GO.UNC.EDU/RAREPLANTPOLICY

No Easy Checkmarks

BY JENNIFER PETERSON, MANAGING EDITOR

I am highly motivated by checkmarks. I enjoy making lists and get great satisfaction from checking things off as I complete them. But, I am very aware there are many things that don't fit into neat checkboxes. Land conservation is certainly one of them. Often, conservation work does not end with ownership, and that's the theme of this edition of *Conservation Gardener*.

The North Carolina Botanical Garden Foundation (NCBGF) provides support for the Garden and serves as a land trust, holding land and conservation easements to protect natural areas from development. Our NCBGF's Conservation Committee understands this work goes beyond ownership of the land. Sometimes, conservation work is needed to restore plants that once grew on the land.

There are a variety of tools we can use to restore land, from prescribed burns to removing invasive plants, to growing plants and seeds for restoration efforts. Mike Kunz provides an overview on p. 6. The Garden is part of several projects to restore land, including efforts to grow seabeach amaranth on Cape Lookout National Seashore (p.8) and to bring native and rare plants back to Penny's Bend Nature Preserve (p. 10). In addition, our friends at Venus Flytrap Champions are encouraging landowners to protect carnivorous plants (p. 13).

And sometimes, it isn't just the plants that need to be restored, but also the knowledge and traditions of the land. Several Garden staff recently met with members of the Waccamaw Siouan tribe to learn about their work to rediscover the plants that had traditionally been found on tribal land. (p. 14).

Our efforts to restore land, plants, and knowledge will always be ongoing and rarely considered complete. Our reward is the satisfaction of knowing we are making the world a better place for this generation and generations to come.

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.



2022 Wildflower of the Year

BY HEATHER SUMMER, NCBG COLLECTIONS MANAGER AND SEED PROGRAM COORDINATOR

We are excited to share downy woodmint (*Blephilia ciliata*), a lovely native perennial in the mint family, as the 2022 Wildflower of the Year. Similar in appearance to its mint family relatives like bee balms (Monarda spp.), downy woodmint is a clump-forming perennial up to two feet tall, but it spreads slowly and won't become aggressive like other mint species sometimes do. In late spring through mid-summer, its upright, unbranched square stems explode with tight clusters of tiny, two-lipped lavender flowers with dark purple spots. These flower clusters are stacked along the stem in tiered bunches, reminiscent of the roof of a pagoda, which is why this species is also sometimes called downy pagoda-plant or pagoda horsemint. Equally as interesting as the flower clusters are the brown, spherical seed heads which ripen in mid- to latesummer, persist through the winter, and make interesting additions to cut flower arrangements.

Although not as pungent as other mints, the leaves of downy woodmint are still mildly fragrant and can be chewed or used to make herbal teas. The Cherokee have used a poultice of the leaves to treat headaches and sinus congestion.



Illustration by Dot Wilbur-Brooks

Downy woodmint is found throughout most of eastern North America in dry, open woodlands, meadows, glades, and prairies. It usually grows in thin, nearly neutral

 $(pH \sim 7.0)$ soils over limestone or diabase rock. In the garden, it will thrive in average to dry, well-drained soils in full to part sun, and it also does well if planted in a large container with sufficient drainage. The attractive clump of basal leaves at the bottom of the stem will remain green throughout the winter and over time can form a nice groundcover. Drought tolerant and somewhat deer and rabbit resistant, downy woodmint is also a great pollinator plant and is commonly visited by numerous species of native bees and butterflies. Plant this wonderful native mint with other pollinator species such as Coreopsis tripteris, Asclepias tuberosa, Solidago nemoralis, Phlox pilosa, and Pycnanthemum tenuifolium to make your garden a pollinator haven!

To receive a free packet of downy woodmint seeds, please send a selfaddressed, stamped envelope to:

North Carolina Botanical Garden UNC–Chapel Hill attn: NCWFOY 2022 CB 3375 Chapel Hill, NC 27599-3375

SPRING PLANT SALE

SATURDAY, MAY 7; 10:30 A.M.-4 P.M.

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

NCBG.UNC.EDU/NATIVE PLANT SALE







Managing Biological Diversity in a Constantly Changing World

BY MICHAEL KUNZ, NCBG CONSERVATION ECOLOGIST

The diversity of life on Earth is astounding. Each day, we add to our understanding of the ecological interactions that shape biodiversity on this ever-changing planet. However, humans have a significant role in reshaping these patterns and processes, leading to massive loss of both biodiversity and the natural areas that support it. These losses played a major role in the birth of environmental movements and conservation biology, ideas that have evolved with time. Where we once believed we could merely set land aside as parks and nature preserves, we know now that we must actively manage these areas, even in the most remote places. Often referred to as adaptive management, the way we conserve biodiversity is constantly shifting to reflect new information and circumstances and must involve diverse groups to cover all the bases.

In many ways, you can think of it like your garden at home. We don't just set aside a patch of earth and plant it. We use all the tools at our disposal to tend to it, pull weeds, and add diversity. We observe what and where different species are successful. When they are not, we take action to save them. We mitigate problems like pests and drought when they arise. And sometimes we must expand our garden because, let's face it, gardens are never big enough. The same idea is relevant for conservation in practice—it requires us to use all the tools we have to protect and manage for biodiversity.

In the broadest terms, conservation tools fall into two categories: *in situ* and *ex situ*. Here we will look at how these tools are applied.

In situ conservation, translating to "in the original place," are the actions we take to conserve biodiversity where it naturally occurs, with natural processes and functions. The more the human population grows, the greater the demand for new development, agriculture, roads,

and utilities. This destroys natural habitats and separates what is left behind into degraded fragments. As such, the top priority is to conserve natural areas before they are destroyed. The late E.O. Wilson developed the concept of Half Earth: saving one half of the earth's surface for nature and thus protecting 85% of species. Saving land is simple in concept but requires a lot of work in practice. It might entail acquiring land outright or protecting an area through a conservation easement. Land conservation can come in many forms, from protecting whole areas (e.g. nature preserves, state parks, national monuments) to smaller tracts acting as buffers or wildlife corridors. Whatever the method, it requires cooperation between various groups, from governments to non-profits to private landowners.

Additional *in situ* tools help us manage land and restore biodiversity in a variety of ways, from removing invasive species and logging old pine plantations to restoring natural disturbances like fire. Many habitats in the Southeast have a long history of frequent fires, but fire suppression and fragmented landscapes have all but stopped naturally occurring fires in the recent past. Prescribed burn programs allow land managers and landowners to reintroduce this process to the land, returning and maintaining forest structure and supporting healthy populations of native plants and animals. Public and private conservation lands in the Southeast lead the nation in prescribed burn programs, and there are increasingly creative ways to engage private landowners in this process.

Understanding how and when to restore a landscape is another critical step in conserving biodiversity. However, what do we do when all of the diversity is no longer there to be restored? One tool used in this situation is reintroducing species back into the habitats from which they were lost. For this, practitioners often link *ex situ* conservation practices such as seed banks back to *in situ* actions. These seed collections provide the source material to propagate new individual plants under

IN SITU VS EX SITU

In situ conservation refers to actions taken in the original place. This could include removing invasive species, prescribed burns, and logging where prairies once existed.

Ex situ conservation refers to efforts taken somewhere else. This could include seed banking and plant propagation.

controlled conditions. For widespread and common species, the individual plants produced can go directly into restoration sites, or they are placed in production to produce bulk quantity seed for planting. For rare species, linking *ex situ* and *in situ* methods may be critical to preventing extinction by creating new populations or augmenting existing ones.

The process of reintroducing species is often long with many bumps along the way. We don't always get the results we want right away. This is true of all conservation measures, which is why there is constant adaptation in how, when, and where practitioners apply them. Two things we do know, however, are that first we have to constantly adapt multiple *in situ* and *ex situ* tools to achieve our goals. And second, through the work of a great many individuals, groups, and agencies, we have used these tools to make strides in conserving biodiversity.



Rows of plants growing in seed increase plots as part of the Garden's Native Plant Materials Development Program. These seeds will be used for restoration efforts.



50 YEARS OF NATIVE PLANT AND HABITAT CONSERVATION IN NORTH CAROLINA: **HISTORY AND THE ROAD AHEAD**

APRIL 3; 5:30 6:30 P.M., VIRTUAL AND IN PERSON OPTIONS, PREREGISTRATION REQUIRED

Take a 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



Researcher Restores Rare Plants on North Carolina Coast

BY SUSAN HUDSON, THE WELL, JANUARY 12TH, 2022

Seabeach amaranth is a fugitive and a pioneer.

Each year, the low-growing plant with its fleshy, spinach green leaves and red stems battles extinction by striking out for new territory. The territory *Amaranthus pumilus*, or seabeach amaranth, prefers is the narrow swath of beach between the high-tide line and the sand dunes on barrier islands.

This location presents challenges. One is that this sandy stretch is also the path most often used by beachgoers and their pets. The other is that — despite having "sea" in its name — seabeach amaranth is salt-intolerant. One good drenching from a high tide or storm surge can wipe it out.

But the threatened species has a champion who is improving its odds for survival in North Carolina. As part of a five-year project, Michael Kunz has spent long hours crawling across the sand to give the rare plant a fighting chance on the North Carolina coast. It's part of his job as a conservation ecologist with the North Carolina Botanical Garden.

"We are trying to help prevent species from going extinct,"

Kunz said. "What we've been doing at the Garden is trying to find ways to restore populations of this plant."

Worth saving

While botanists don't want any plant species to become extinct, seabeach amaranth merits special attention because of its pioneering role on beaches. As one of the first plants to establish itself when storms or current changes build new beaches, seabeach amaranth blazes a trail for other plants to follow.

"They're out there trying to do things where nothing else is growing yet," Kunz said. "They're one of the primary colonizers of unvegetated sand. They slow the wind speeds down and trap sand to begin building dunes. They add nutrients to the sand, which allows other plants to come in and get established as well.

Historically, seabeach amaranth performed this role on beaches from South Carolina to Massachusetts. But the plant hasn't been seen in the wild north of New York in 150 years and is experiencing a 98.5% decline throughout its range.

"We've changed the beaches significantly, both through

Left: In the spring of 2021, staff members from the North Carolina Botanical Garden and the National Park Service did the tedious work of planting seeds by hand. *Photo by Mike Kunz.*

climate change and through development, and this plant also likes to grow in the places where people like to be on the beach. Its habitat, I think, is very pinched," Kunz said.

Planting in the wild

The current five-year project to re-establish seabeach amaranth in North Carolina began with gathering tiny black seeds from wild plants to add to the botanical



Seabeach amaranth growing in a sand dune on Cape Lookout National Seashore. Photo by Mike Kunz.

garden's seed bank of endangered species. The plants grown from these seeds in the protected environment of the Garden's greenhouse produced more than 11,000 seeds, with 4,000 being preserved in the bank. The rest were set aside for planting in the wild, either directly into the sand or in biodegradable peat pots.

The botanical garden has worked with the U.S. Fish and Wildlife Service and the National Park Service to be able to plant the seeds on many beaches where they would have the best chance for survival.

"The North Carolina project is specifically with the National Park Service, which has a strong interest in restoring seabeach amaranth on Cape Lookout National Seashore. They have been key to making this project happen: from ideas to funding to support," Kunz said. "The Fish and Wildlife Service has supported it, too, and funded previous projects with the National Refuge System in South Carolina, Virginia, New Jersey, and Massachusetts."

For each spring planting mission in these remote areas, Kunz and park service staff and volunteers loaded small boats with seeds, peat pots, 40 gallons of fresh water and other supplies before being ferried to places like the Core Banks and Shackleford Banks on Cape Lookout National Seashore.

"You're often not dropped off right at the habitat that you want to use. So it's lugging and carrying 40 gallons of water, which doesn't sound like that much. But given that each gallon weighs eight pounds, it becomes a lot of weight very fast," Kunz said.

> Once they found a suitable spot, they set up the plots in carefully measured grids to be able to follow the progress of the plants over time and keep accurate records — a time-consuming process.

> "Then it really is putting one seed in the ground at a time, so it's crawling around on your hands and knees in the sand," Kunz said.Throughout the summer, Kunz and Park Service staff went back to check on the plants, recording information about their germination, survival, and seed production.

A moving target

So far, the results have been mixed. "We've tried this several times. There are some places where we've had pretty good success, where we've had hundreds of individual plants that make it through the full season," Kunz said.

In other places, the plants failed because of early-season storms or factors they haven't identified yet.

"Growing a plant on a sand dune is rather difficult. It's a harsh environment," Kunz said.

Seabeach amaranth is called a "fugitive annual" because it completes its life cycle in a single growing season, dispersing its seeds in a habitat that is constantly shifting. "It's never in the same place for a really long time. It kind of pops around and moves around as the inlets change and the beach changes. Since the plant is a moving target, the restoration is also a moving target," Kunz said.

He doesn't expect immediate success. "But if we can establish pockets of amaranth in suitable habitat, hopefully it will be putting a lot of seeds back into the environment. And then, as natural changes on the beach shift and move, there will be enough seeds to continue to have this plant not be extinct in the wild."



A River Runs Around It: Restoring the Rare Flora of Penny's Bend

BY EMILY OGLESBY, NCBG COMMUNICATIONS AND EXHIBITS COORDINATOR

Two hundred million years ago, before birds existed, or bees, or wildflowers, molten rock seeped into cracks below the surface of what's now Durham, North Carolina. The North American and African continents, whose union had created the Appalachian Mountains, were slowly pulling apart. In their wake, they left rifts that filled with sand and silt washed down from eroded mountaintops, eventually forming low basins of sedimentary rock. But the molten rock oozing in from below was entirely different in composition: it solidified into a hard igneous rock called diabase that has more in common with the dark, volcanic basalts of the ocean floor than the surrounding sandstone and siltstone.

Fast forward to recent millennia, and the Eno River's path from northern

Orange County to the Neuse River hits that rock head on. Taking the path of least resistance, the river flows around the diabase intrusion, maneuvering through the softer rock that surrounds it. The result is Penny's Bend, a peninsula surrounded on three sides by the Eno River.

It's more than just a striking geological formation: the diabase rock weathers into soil unlike almost any other in North Carolina. It's mafic (has a high pH) and is richer in iron, magnesium, and calcium than many other native plants in our area can tolerate. It tends to create shrink-swell clays that harden the soil practically into concrete in summer, with little water available for plants, while in winter, the ground is gooey and swells when wet. As a result, Penny's Bend harbors highly rare plant species that evolved to live specifically in these stressful conditions. Some of the rare species at Penny's Bend include:

- Prairie blue wild indigo (*Baptisia aberrans*)
- Smooth purple coneflower (*Echinacea laevigata*)
- Hoary puccoon (*Lithospermum canescens*)
- Glade wild quinine (*Parthenium auriculatum*)
- Prairie dock (*Silphium terebinthinaceum*)
- · Curlyheads (Clematis ochroleuca)

In addition to the troublesome clay soil, natural wildfires helped keep the upper meadows at Penny's Bend clear of large shrubs and trees so these wildflowers could thrive. At various points, the Occaneechi, Shakori, and Lumbee Tribes occupied the land that is now Penny's Bend, and we can guess they hunted on the land. When Englishman John Lawson traveled to Occaneechi Village (near present-day Hillsborough) and the Shakori village of Adshusheer (near present-day Durham) in 1700, he described meals of bear and venison, hot bread, and fowl. And though the Occaneechi farmed corn, beans, and squash, the difficult soil at Penny's Bend means it's unlikely it was ever used to grow crops. the Camerons who named it – it first appears in a map Paul Cameron commissioned of his land holdings in 1890.)

Through the mid-20th century, other landowners grazed cattle and raised and trained quarter horses at Penny's Bend. The property might have met a typical fate of subdivision and development were it not for the creation



Pollinators on smooth purple coneflower at Penny's Bend Nature Preserve.

of the Falls Lake reservoir in the late 1970s. Penny's Bend met enough of the requirements for protection of nearby properties that the Army Corps of Engineers, charged with creating the lake, purchased the land outright.

Shortly after, they leased the property to the State of North Carolina, who subleased it to the North Carolina Botanical Garden Foundation. For over 40 years, the Garden has managed Penny's Bend Nature Preserve with a directive to protect rare plants and wildlife habitats; preserve the site's availability for non-intrusive recreation; and

Penny's Bend spent much of its time under English settlers as a pasture for grazing cattle and horses. In the 19th century, it was part of the Bennehan-Cameron family's massive landholdings, which included over 30,000 acres in four counties and the famous Stagville plantation. Over the years, the family enslaved thousands of African Americans to work their land; Paul Cameron bragged that

century, it was part of the Bennehan-Cameron family's massive landholdings, which included over 30,000 acres in four counties and the famous Stagville plantation. Over the years, the family enslaved thousands of African Americans to work their land; Paul Cameron bragged that he "had nineteen hundred of them once." While Penny's Bend probably didn't undergo the tobacco and wheat farming typical of the Camerons' properties, the family built a grist and sawmill along the Eno at the edge of Penny's Bend that has since been destroyed. (The origin of the name Penny's Bend is unknown, but it was probably

provide an accessible example of *in situ* conservation in an urbanizing environment. This last goal is of particular interest.

The federal ownership of Penny's Bend provides a unique opportunity for protecting its rare plants *in situ*, or on the site where they live. Other nearby pockets of diabase rock that harbor similar species have been paved or grown over on private property. In the late 1980s, Garden curator Rob Gardner gathered plants of smooth purple coneflower and hoary puccoon destined for destruction along Wanderlust Road, which abuts Penny's Bend, and planted them in the preserve. In 1993, Gardner and staffer Darrin Perrey propagated additional smooth purple



3-D generalized diagram of the Eno River as it flows over the boundary of the Piedmont upland and Triassic lowland. Illustration from NC Geological Survey.

coneflower plants from seed for the site.

When you're restoring a plant so rare it only grows in a few sites in the entire world, a preliminary hurdle is figuring out how best to reestablish it. With funding from the National Fish & Wildlife Foundation, the Garden's conservation department was able to propagate and plant 575 smooth purple coneflower seedlings and 1,000 seeds at Penny's Bend in 2007. By tracking the success of seedlings and seeds in different plots across the preserve, they learned lessons that have since been applied to smooth purple coneflower reintroduction projects elsewhere.

More intensive land management was long on the agenda for the Penny's Bend Management Advisory Committee, which to this day includes staff from the Garden, the North Carolina Natural Heritage Program, the North Carolina Plant Conservation Program, the Eno River Association, the US Army Corps of Engineers, and local botanists. They conducted the first prescribed fire in the meadow around 20 years ago to mimic the natural wildfires that had been suppressed for centuries. More recently, they have begun addressing the southern slope, which had become overgrown with loblolly pines.

Originally a wetland tree of the Coastal Plain, the loblolly pine is not technically native to the Piedmont of North Carolina. Fire suppression, clearing land for development, and the creation of tree farms have enabled its spread across the Southeast (and made it the second-most plentiful tree in the United States, after red maple). Where they take over, they block sunlight to the forest

Left: Penny's Bend in 1972, with a large, open meadow. Right: Penny's Bend in 2012. Notice the meadow has filled with loblolly pine trees. floor, preventing native wildflowers and grasses from growing. Accordingly, removing the loblolly pines from the southern slope of Penny's Bend and sowing in their place locally harvested native seed was on the Penny's Bend management plan for over 15 years.

In 2020, a forester was hired to clear the loblolly pines, an effort that was not without some initial controversy. "Logging operations are never 'pretty' – including those for ecological restoration," said Johnny Randall, director of conservation programs at the North Carolina Botanical Garden. Staff arrived on site one day to find some logging equipment had been tampered with, ostensibly by visitors unhappy to see the downed trees.

But by summer 2021, the slope, cleared and prepared by burning, was ready for planting. Duke University Environmental Management master's student Lydie Costes led an effort with the Garden's conservation department to plant 800 seedlings of prairie blue wild indigo in the newly sunny area. By studying how well different plots of seedlings survive, her work will inform future plantings and restoration efforts.

In fall 2021, Garden staff and volunteers, Eno River Association volunteers, Duke University graduate students, and NC Plant Conservation Program staff came together to plant seeds and seedlings of around 23 matrix species on the southern slope. These more common native wildflowers and grasses will form the basic backdrop of a Piedmont savanna, where the site's rare wildflowers can thrive. By spring 2022, the Garden's conservation department will have planted around 6,000 seedlings and





several seed plots, thanks to funding from the Burt's Bees Greater Good Foundation.

Where did all these plants come from? The staff of our Native Plant Materials Development Program have been hard at work collecting seeds and propagating new plants for restoration efforts around the state. For this project, they have grown new seedlings from seeds collected at Penny's Bend specifically. This fortifies the natural genetic diversity of the site and ensures the new plants are the right ecotypes—forms of a species that have evolved to live in a particular habitat.

Some of the native grasses and wildflowers Garden staff have grown for and planted at Penny's Bend include:

- Slender wood oats (*Chasmanthium laxum*)
- Shortleaf skeleton grass (Gymnopogon brevifolius)
- Downy oatgrass (Danthonia sericea)
- Narrow-leaf mountain mint (*Pycnanthemum tenuifolium*)
- Eastern smooth beardtongue (Penstemon laevigatus)
- Orange coneflower (*Rudbeckia fulgida*)
- Eastern milkpea (Galactia regularis)
- Spurred butterfly pea (*Centrosema virginianum*)
- Scaly blazing star (Liatris squarrosa var. squarrosa)
- Downy lobelia (Lobelia puberula)



Hoary puccoon (Lithospermum canescens) at Penny's Bend Nature Preserve.

- Eastern gray goldenrod (*Solidago nermoralis* var. *nemoralis*)
- Piedmont Barbara's buttons (*Marshallia obovata* var. *obovata*)

Looking ahead, management efforts will focus on maintaining these new plantings: using prescribed burns to keep the site clear and removing invasive plants who might otherwise have a field day in the newly open soil.

VENUS FLYTRAP CHAMPIONS

The Venus flytrap (*Dionaea muscipula*), called the most wonderful plant in the world by Charles Darwin, is only native to a region 90 miles around Wilmington, North Carolina.

Recent surveys of known populations of Venus flytraps show a continuing decline. The plant is listed as a theatened species, and the U.S. Fish & Wildlife Service is considering listing it as an endangered species. The main causes of the decline in population are habitat loss, lack of fires, and poaching.

New neighborhoods in the region not only take habitat, but they also change the hydrology and ensure there will be no fires to manage the landscape.

Venus Flytrap Champions is a program working to save habitat for Venus flytraps. They reach out to landowners in

FIND OUR MORE ABOUT VENUS FLYTRAP CHAMPIONS: VENUSFLYTRAPCHAMPIONS.ORG

the region to offer help indentifying flytraps on their land, and demonstrating conservation practices to keep those populations intact. Landowners can make a significant impact on maintaining and increasing the habitat for flytraps. Venus Flytrap Champions is also working to recognize landowners for doing great work.





Restoring Plant Connections on Tribal Land

BY JENNIFER PETERSON, NCBG ASSOCIATE DIRECTOR OF COMMUNICATIONS

Linda Patrick recalls running in the fields near her home in southeastern North Carolina as a child, stopping to play with the numerous Venus flytraps on the Waccamaw Siouan tribal land.Years have passed, the land has changed, and she doesn't see flytraps anymore. Memories of the land have begun to fade as well.

Darlene Graham and Sue Jacobs, respected elders within the Waccamaw Siouan tribe, have a deep connection to their land, and they are using this connection to discover the ways of their ancestors and to share this knowledge with other tribal members including youth.

The Waccamaw Siouan are called the People of the Falling Star. According to their history, long ago, a meteorite fell and struck the earth, forming a huge hole. The streams in the area flowed into that hole, creating Lake Waccamaw. The tribe has lived in the area for thousands of years. In fact, three canoes from their ancestors have been found in the lake. One is at Fort Fisher, one is at the Lake Waccamaw Depot Museum, and the other is still in the lake to preserve it until its new home is determined. This connection to the land and the plant traditions of the Waccamaw Siouan has led Graham and Jacobs to create the Healing Green Space, a garden filled with beds of important plants. Tribal members gather here for meditation, relaxation, and healing, and they consider this as a safe haven for the plants as well. They have included a water feature to provide calmness to the soul, and a fire pit, to bring back elements that were important to their ancestors.

The Healing Green Space is a hub of activity on their tribal lands. In addition to serving as a site for talking circles and community events, the space is used for workshops during their annual powwow that takes place at the end of October. In addition, fourth graders from the area and surrounding counties visit to learn about Native American culture. New nighttime, open air programs and workshops are in the works, including a study of the stars, constellations, and moon phases that serve as a planting guide in the sky for the Waccamaw Siouan.

Meanwhile, Graham and Jacobs have been on a quest to learn as much about native plants as they can, and they are delighted to recognize plants they have learned about on walks in the tribal lands.

"Chief Jacobs of the Coharie tribe says when you honor the plants, they will honor you and show their face," said Graham."And that certainly is true. Many plants I didn't see before appeared after I learned about them."

"Also, the Creator provides what we need when we need it and medicinal plants speak the loudest," adds Jesalyn Keziah of UNC's American Indian Center, noting when medicinal plants are needed, they seem to appear.

"when you honor the plants, they will honor you and show their face."

The knowledge this group has gained has been an incredible asset to their community and beyond.

"We are in a powerful time. So many in our community are seeking plant knowledge and want to share it widely," mentions Keziah. Tribes throughout North Carolina have been eager to share information with each other. The Waccamaw Siouan recently learned about elderberry from the Coharie people.

"The work the Waccamaw Siouan have done has been inspirational to other tribes, and a beautiful example of what can be accomplished," adds Keziah.

UNC's American Indian Center and the North Carolina Botanical Garden collaborated last fall to host the NC Native Plant Symposium: Green Roots, Red Resilience. This event offered Native Americans and others an opportunity to learn about indigenous connections to plants.

In addition to knowledge, the Waccamaw Siouan have gained actual seeds from their ancestors. Through the efforts and persistence of tribe members, scientists from NC State University, the University of South Carolina, and the U.S. Department of Agriculture were able to return seeds of corn to the tribe that had been preserved.

"When we got the corn, we were very excited to have the seeds of our ancestors home again. But we were not really prepared," said Graham. "Our community members quickly gathered and prepared a site for the corn."

The prepared field was still pretty grassy, but the seeds needed to be planted, so they did just that. They ended up with nine rows of corn that Graham would water – and

Left: Corn grown with seeds from their ancestors towers over the Waccamaw Siouan tribal land. Right: The Healing Green Space provides a calm garden for tribe members and a safe space for the plants, too. Photos by Darlene Graham when she wouldn't, she says the Creator sent enough water to sustain them.

Their nine rows of corn provided a bountiful harvest.

"It was as though the corn was saying, 'I am home,'" said Graham.

The tribe has a recipe from their ancestors for corn meal soup, and Patrick decided to try to make the soup with her grandchildren. They shelled the corn and ground it in a coffee grinder until it was powdery. She cooked it with salt and butter – and they were delighted with the results.

Patrick, Graham, and Jacobs recently met with staff from Garden. As a result of the conversation, the Garden will be sharing knowledge on prescribed fires, plant propagation, historical plant specimens found in the Herbarium, and techniques to grow Venus flytraps in the Healing Green Space. And the Garden is eager to learn about the uses of native plants, traditions, and more from the Waccamaw Siouan.





Staff Pick: American Indian Paintbrush

BY CHRIS LILOIA, NCBG CURATOR, HABITAT GARDENS

When we began planting the Piedmont Habitat in 2011, one of the first species we added was American Indian paintbrush, Castilleja coccinea. The Garden's conservation depatment had been working to establish a self-sustaining population in the fields at Mason Farm Biological Reserve. Because of these efforts, we had seedlings ready to go.We were excited to transform unplanted garden space with a stunning annual that would bloom quickly and show off the special flora that persist on our Piedmont roadsides. We quickly learned it's not as easy as one might think. Many years of careful cultivation, trial and error, and rabbit spray have gone into the colorful show that visitors now anticipate.

American Indian paintbrush is an annual or biennial so it's important to watch out for seedlings and be sure there are safe sites for ripe seeds to fall and establish.We count on natural reseeding for future blooms and collect very little seed for use elsewhere.Visitors will see the dormant plants in place long after the blooms have faded.This is to ensure that their seeds stay put. Though the plants produce energy through photosynthesis, they are hemiparasitic. Slender projections called haustoria connect their roots with those of neighboring plants, allowing them to access water and minerals. For this reason, it is important to grow them with wellestablished, suitable hosts. Literature suggests blue-eyed-grasses and little bluestem, but they fare well with a variety of species at the Garden.

Our paintbrush flowers from spring into summer, creating a slowly shifting kaleidoscope of color as its neighbors come into and out of bloom. The striking red-orange of its inflorescence comes mostly from the bracts, not the flowers. These bright, modified leaves are slow to fade – one reason why these plants remain showy for a long time. This coloring also attracts hummingbird pollinators. Foamflower, lobed tickseed, lyreleaf sage, and common golden Alexanders contribute their colors to the display.

References to use of this plant by

American Indians are many and diverse. They include treatment of colds, rheumatism, paralysis, and menstrual difficulties. It was also used as a poison or love potion, to prevent conception, and as a rinse to make hair glossy.

American Indian paintbrush is one of many species of *Castilleja*, and almost all are found in the western United States. Castilleja *coccinea* can be found throughout the eastern U.S. and Canada and is uncommon throughout most of its range. It thrives in sun and moist to average soils. Threats are often related to maintenance of the open sunny habitat these plants favor, but also include development and competition from invasive exotics.We have slowly built populations in the Garden and at Mason Farm Biological Reserve through patient stewardship of seed collected from several roadside sites in Orange County.

Photo: American Indian paintbrush in the Piedmont Habitat with white foamlower, golden lobed tickseed, lavender lyreleaf sage, and yellow common golden Alexanders.

CERTIFICATE AND ADVANCED CERTIFICATE IN NATIVE PLANTS

From 2001 to 2020, we offered the Certificate in Native Plant Studies. In 2021, the program was relaunched with enhanced flexibility to support the varied goals of our participants. Both the Certificate and Advanced Certificate in Native Plants enable you to deepen your understanding of the native flora of the southeastern United States.

The Certificate in Native Plants is geared toward the dedicated amateur botanist/naturalist. The Advanced Certificate in Native Plants is geared toward the professional and provides a strong background of knowledge for those involved in botanical, ecological, and conservation endeavors.

CERTIFICATE IN BOTANICAL ART & ILLUSTRATION

Art and illustration are central to the study of plants. Conventional scientific botanical illustrations accompany taxonomic articles and field guides. In botanical art, the artist has more freedom to make personal visual choices to draw the viewer in and evoke an emotional response, but the image remains scientifically correct.

Founded in 2001, our certificate program provides participants with a well-balanced curriculum in both botanical art and illustration that includes scientific background, visual arts theory, and practical experience in different media.

COMING SOON: BOTANICAL ART FUNDAMENTALS, A VIRTUAL PROGRAM

FOR MORE INFORMATION ABOUT THE CERTIFICATE PROGRAMS: CONTACT DAVID MICHAUD AT NCBGREGISTRAR@UNC.EDU 919-962-4882

NCBG.UNC.EDU/CERTIFICATES



NEW!

IN THE GARDEN SHOP

These paper flowers created by Cynthia Woodsong look so realistic, a bee tried to pollinate one while the photo was being taken! Stop by the Burke and Judy Davis Garden Shop to see these beauties in person, and maybe even take one home with you! A variety of trilliums, trout lilies, Venus flytraps, pitcher plants, and bloodroot are available.

SHOP ONLINE @ SHOP.NCBG.UNC.EDU



SATURDAY, MAY 21; 6-9 P.M.

Plan to join us for a homecoming celebration as we welcome the community to our courtyard garden for an evening of fun and festivities with a botanical flare. Purchase your tickets for this twilight soiree at the Garden's largest fundraising event of the year.

NCBG.UNC.EDU/MOONLIGHT



Coker Arbor Renovation Planned

BY ANGELICA EDWARDS, NCBG COMMUNICATIONS INTERN

The North Carolina Botanical Garden plans to renovate the Coker Arboretum arbor for improved visibility, accessibility, safety, and longevity.

The arbor was last renovated over 20 years ago, built with black locust wood. Time has worn the arbor, and it is sinking and decomposing.

"The opportunity today is the creation of a structure that connects the campus, the Arboretum, and the larger community," said Damon Waitt, the director of the North Carolina Botanical Garden.

To build for the past, present, and future, the arbor structure will be replaced with more modern, strong, and durable materials but will maintain its rustic character and charm. Distinct collections of native vines will weave in and out of the arbor.

The renovated arbor entrance will be larger and include a gentle slope rather than stairs, making it more accessible to all visitors. Parts of the arbor will be raised to create a sense of arrival and reinforce it as an entry gateway.

The arbor will be raised to street level and moved farther from traffic for improved pedestrian safety. Maintaining sight-lines in and out of the arbor will create additional safety improvements.

"Lighting, safety, and accessibility are all important parameters that must be paired with a respectful attention to the rustic and informal character that defines the arbor," said Waitt. "Beyond being a display structure for climbing vines, the arbor also has the potential to incorporate subtle educational elements around wood, like its life cycle and material uses, shade, water, or even energy generation."

William Chambers Coker, the University's first professor of botany, built the Arboretum in 1903 after being tasked with reimagining a 5.5 acre plot of boggy meadow used for livestock grazing. The Arboretum served as a learning opportunity for students of the recently established botany department. With the help of another gardener and \$10, Coker used his landscaping skills to plant several varieties of trees and greenery, and today there are over 400 species of plants in the arboretum.

The 200-foot-long arbor along Cameron Avenue was added to the Arboretum in 1911. It was built of black locust wood, and several varieties of native flowering vines were planted to grow through the arbor. These upcoming renovations mark the first major restoration of the arbor since the UNC Class of 1997 made a gift to renovate it.

The North Carolina Botanical Garden Foundation board of directors are spearheading the fundraising efforts for the arbor renovation. Ladell Robbins, president of the Class of 1997 and NCBGF board member, is encouraging class members to donate at their 25th reunion.

"The history shows that the arbor has undergone periodic renewal and reconstruction," said Waitt. "It is, however, the memories that have been built here by countless generations of students, community members, and visitors that stand as the arbor's greatest legacy."

If you would like more information, please contact Stephen Keith at Stephen.Keith@unc.edu or 919-962-9458.

CHAPEL HILL GARDEN TOUR



SATURDAY, APRIL 23, 10 A.M.-4 P.M. SUNDAY, APRIL 24, 11 A.M.-4 P.M.

The 2022 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.

GO.UNC.EDU/CHAPELHILLGARDENTOUR



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

A Conservation Legacy

BY STEPHEN KEITH, DIRECTOR OF DEVELOPMENT

The urge to conserve land and resources is strong within North Carolina Botanical Garden supporters. This trait permeates the Garden's mission and attracts many in the community to engage in activities to celebrate and preserve the natural world. This past year we saw many examples of Foundation members and garden supporters showcasing their love and respect for conservation through sustaining the overall efforts of the North Carolina Botanical Garden.

The first ever membership drive in September welcomed over 200 new members to the North Carolina Botanical Garden Foundation, Inc. Foundation directors and volunteers supported the success of this effort through planning, staffing the greeter table in the Sara Waitt Breezeway, preparing membership brochures, and welcoming new faces to the Sculpture in the Garden reception and the Members' Preview Night of the Fall Plant Sale.

Memberships and annual gifts allow conservation plans, practice, and education to continue to succeed. Gifts to support the overall Garden budget are especially helpful as more visitors seek safe sites to spend time with family and friends while enjoying our natural areas and native plant collections. Annual expendable gifts from Frances Rollins, Fran and Gary Whaley, David and Laurie Joslin. Harriet and DG Martin. and Janis McFarland and Rich McLaughlin, along with many others who responded to the fall brochure, has allowed us to track well with our operating budget need. There are numerous ways to support the Garden annually, including responding to the spring renewal brochure, serving as an Event Host, sponsoring the Garden with your business through the Corporate Partner program, participating in GiveUNC, establishing a monthly gift with your credit card, or by simply using the gift envelope



Mayapple (*Podophyllum peltatum*) emerging in Battle Park on UNC's campus.

in this magazine. All these gifts help provide the required funding to meet the Garden's fiscal year needs.

We welcome new members to the Sustainer and Director's Circle levels in the North Carolina Botanical Garden Foundation. Recognized on page 22, these donors provide aspirational annual membership support to champion the Garden's plant conservation mission. We invite more participation in this illustrious group of Garden supporters to reinforce all the goals of the Garden.

As a department of UNC-Chapel Hill, the North Carolina Botanical Garden is involved in the Campaign for Carolina.All gifts and pledges to the Garden since 2015 count towards the Garden's overall \$30 million campaign

goal. The Campaign for Carolina continues through 2022.

Through annual gifts, capital project funding, planned gifts, and pledges, the Garden can raise the remaining 13% of the campaign goal. Thank you **Alice May** for your campaign gift in the fall of 2021 to support the Garden and allow conservation efforts to thrive (see donor spotlight story on page 22).

Estate gifts (also called bequests or planned gifts) have a great impact on the future of the Garden. The Garden has benefitted from numerous estate gifts over the years as supporters ensure their conservation legacy is extended into the conservation mission of the Garden. We are trained to answer your questions and guide your work with a qualified estate attorney. If you would like to start a legacy conversation, I welcome you to

contact the NCBG development office.

This is a pivotal time in the life of the Garden. As we enter the renewal season of spring, we continue to need your involvement. There are multiple opportunities and programs for you. Enjoy the plant collections, natural areas, public programs, and know your membership dues and gifts of support allow this conservation garden to flourish.

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

Tribute Gifts below were received between July 1 and December 31, 2021.

IN HONOR OF

John Charles (Jack) Boger Peter G. Boger

Catherine Bollinger and Thomas Scheitlin David and Susan Bollinger

Bob and Molly Broad Ladell and Amara Robbins, for Botanical Garden Entrance Walk Fund

The Burns' nearly 40 years of loving care of the Coker Estate Anonymous

Clif Crandell Sue and David Felton, *for Natural Areas Endowment*

Mignon DeBerry Lila P. Friday

Julia, Richie, and Ezra Efird John and JoNell Benson

Kathy Ely Joseph H. Ely

Margie Forrest Miriam Forrest Bryant and David R. Bryant

Laura and Ken Frazier Susan D. and Steven D.Skolsky, for Coker Arboretum Endowment

Reverend Richard Freeman On occasion of his 90th birthday Sandra F. Brooks-Mathers and Mike Mathers

Julie and Pete Gaskell Elizabeth K. (Lizzy) Helmes

Marie Hackbarth Joseph Hackbarth

John Joseph (Jack) Haggerty Susan Kuhbach

Jane Harvey Daryl F. Walker

Sally Haskett Shauna and Thomas Farmer, for Horticulture Therapy Program

Mary C. Howes Anne Howes Anderson and David Anderson

Maxwell Huppert On occasion of his 7th birthday Sarah and David Huppert

Richard E. Joiner Richard C. (Rich) and Erica Joiner, for Botanical Garden Conservation Fund

Sherry T. Jones Gudrun Thompson and Jeff Sumpter, for Children's Wonder Garden

Susan J. Joyner Bryan M. Peters, Jr. **Stephen L. Keith** Bobby J. Ward and Roy C. Dicks

Barbara Koch Susan W. Short, for North Carolina Botanical Garden Director's Fund

Nicholas Levy and Madeline James Levy On occasion of their wedding for Botanical Garden Conservation Fund Noah R. Levy Madge McKeithen

Claire Lorch Gary E. Duggan, for Carolina Community Garden

Claire Lorch and Fred Stang Jay and Jill Stang, for Carolina Community Garden

Derek Henry Loush Judy Swartley

Margo MacIntyre W. Woodrow Burns, Jr. and Catharine Gilliam Burns Emilie P. de Luca, for Coker Arboretum Endowment Mark C. and Jane M. Ritchie

Harriet Wall Martin Kitty Bell Tobin and Katherine Savage

Marlene Miller Anonymous

Liz Moore Lisa Hatch

Ken Moore Nancy Hillmer, for The North Carolina Botanical Garden Student Intern Fund

Nell Hatley Morton Libba and Jim Wells

Kurt Muller Margaret L. (Maggie) Sauer, for The North Carolina Botanical Garden Student Intern Fund

My Three Children Lyn McAllister Wilson, for The North Carolina Botanical Garden Student Intern Fund

NCBG Native Plant Symposium: "Green Roots, Red Resilience" Cohosted by UNC's American Indian Center

Paul Killough and Lynn S. Wilson

North Carolina Native Plant Society William L. and Mary E. Switzer III

Joe and Elaine P. Norwood* Patsy N. Newman

Emily P. Oglesby Robert H. and Victoria T. Borden Stephen and Nancy Schecter

James R. (Jim) Pick, Jr. James D. Joslin and Beth A. Hahn

Sims Preston John K. and Sherene S. Min Johnny Randall Barbara B. and Thomas Driscoll, for Stillhouse Bottom Natural Area

Adele Richardson Ray Pat and Mary Norris Oglesby

Stephen A. (Steve) Rich On occasion of his birthday Nancy and Joel Isenberg

Amy Sabanegh Debra W. Bagwell

Margaret and Tom Scott A. Jane Royster

Beth Stafford Peter J. and Tara C. Rubinas

Gudrun Thompson Patricia T. and Charles L. Thompson

Sally Couch Vilas Lawrence M. (Larry) Fleishman, for General Operating Fund Endowment

Damon Waitt W. Woodrow Burns, Jr. and Catharine Gilliam Burns

Barbara K. Wendell Carol J. Hazard and Winston Liao Stephen A. and Sandra D. Rich

IN MEMORY OF

Michael D. Aitken Elizabeth A. and Stephen C. Fleury, for Horticulture Therapy Program

Ralph Norman Alderson Martha Coates

Lois and Bill Andrus Martha A. and William E. Lamb

Ray E. Ashton, Jr. Elizabeth Ashton Lord

Ingrid Baird Ingeborg H. Jelley

Phyllis C. Barrett Gerald Alan (Gerry) Barrett, Jr., for Mason Farm Endowment

Raymond Lindsay Barron Albert T. and Jane Barron McAdoo

Kemp Plummer Battle Henry G. Grossberg, for Battle Park Endowment

Thomas B. Battle E. Todd and Charlotte Robbins, for Battle Park Expendable

Minnie Gertrude Gibbs Blanton Patricia J. Blanton and D. Robert McConnaughey

William E. (Bill) Bowman, Jr. James H. and Melinda W. Ogburn Irene C. Brantley Bernadette Pelissier and Vann Bennett Melinda Kellner Brock Katherine Magill Walters, for Melinda Kellner Brock Terrace

James Alexander Bryan II W. Woodrow Burns, Jr. and Catharine Gilliam Burns

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

Louise Moore Bryan Charles I. Bryan

Mary Jane Mayhew Burns W. Woodrow Burns, Jr. and Catharine Gilliam Burns

Frank Callahan Danielle C. Callahan, for Carolina Community Garden

Reece W. Chambers Charles and April Bocholis

Jack H. Childs and Jack S. Childs R. Michael Childs

Maria Contou Christopher Joy and Steven Przybyla, for Horticulture Fund

Thomas Dickerson (Tommy) Coates Martha Coates

Stephen O'dell (Steve) Coggins Kathryn E. and Ross E. Strickland

Henry Steele Commager Christopher E. Bogan and Mary Jo K. Barnett

John Philip Couch David B. Crutchfield, for Friends of UNC Herbarium

Margarette Ann Dansby Kyle L. and Paula D. Clements

Arthur S. DeBerry, Jr. Mary Bland Josey

James Matthew Elsey Deborah Joy and Michael Davey, for Natural Areas Endowment

Judy and Dave Farley Cathy S. Cole

Dianne Murphy Frazier Arthur S. and Gretchen U. Alysworth Julie Clemens and Brian Keenan Louise M. Clifford Sonna M. and Norman H. (Norm) Loewenthal Julie D. McClure Kristen Narlow Donna Lee Parke, *for Educational Outreach* Rosann F. and Thomas D. Petes Pamela J. Reitnauer Barbara A. Wedehase

Rob Gardner Laura and Vann Evans Larry and Audrey Mellichamp Anne Woods Guzzardi Peter Guzzardi and Isabel Geffner

John R. Hamill Bill and Marcia Daniell

Frank H. Hampshire Nancy Hampshire

Jim and Frances Hart Janese and Elman Frantz

Michael Kenneth Hooker

Carmen Hooker Odom and Fountain Odom

Mary S. Horvitz Carol Horvitz Nutt and Randall Nutt

Frederick Johnston Houk, Jr. For Fred and Virginia Houk Sustainability Internship Fund Nancy and Thomas Chewning Virginia S. Houk

Jonathan Howes Mary C. Howes

Ken Ingold Ellen M. Andrews

Christine Jones June Foushee

Bill and Mary Joslin Edward R. (Ned) Leager and Tia Regan

Wesley Linton Keith Allison L. Essen Sally Sue Glover Patti Smith

Meg Graham Kemper Terri L. Phoenix

Alexander Eugene Kenan Kathleen (Katie) Bobbe, for Carolina Community Garden Robin L. Wilson

Norberto Kerzman June Foushee

Emily Lambeth Stephen L. Keith and Lisa C. Glover

Diane E. Lea Heather G. and David A. Yeowell Heinrich V. Malling Martha S. Malling, for Educational

Outreach
Barbara Jeanne Mattern
Julie and Kevin Byrne, for Botanical

Garden Entrance Walk Fund Gwynne Davis MacIntyre, for Art and Educational Exhibits Warren C. Russell

Lisa Stockman Mauriello Kristina M. Spurgin

Thelma and Josiah McClain Matthew P. Herman and Kevin Wilson

Scott McLean, Jr.

Mari J. McLean, for Battle Park Expendable David L. Robert*, for Battle Park Endowment Jean C. Stewart, for Battle Park Endowment

Florence M. Melvin Joseph Taylor Melvin, Jr.

Carol Lasher Miller Cyrus L. Miller

Billie Hart Morgan James E. Morgan Hollis and Nicholas Oberlies, for Natural Areas Endowment and Educational Outreach

Grover Elmer Murray Sally M. Murray, for Coker Arboretum Endowment

Nell Wall Otto Stephen A. and Sandra D. Rich

Julie Mitchell Palmer

For Dr. Julie Mitchell Palmer Endowment for the Natural Areas Artecho - Pamela Palmer, President and Landscape Architect Marshall E. Baxter Margaret A. Cartwright Peter Cartwright Margo and Emery Dilling Keith Dowland David L. Herrin Kenny Hill Kamiar Kouzekanani Ray Mechler Mona Mehdy Ann Pollack and Danny Spoonts Eric M. and Alison W. Roberts Jennifer Wessman Susan P. and Ronald W. Worley David N. and Kathleen Young

William Barklow (Bill) and Athena Geanetos Parker Johnny Randall and Libby Thomas

Bill Pettis

Jane Pettis Wiseman, for Coker Arboretum Endowment

Judy Allen Pick James D. Joslin and Beth A. Hahn Missy and Sam Rankin

John J. Pringle

April Bolton-Smith W. Woodrow Burns, Jr. and Catharine Gilliam Burns Chuck and Jennifer Campbell Robert Ducklo Mrs. Calvert H. Helms Mr. and Mrs. Theodore J. Hopkins, for Conservation Endowment Harriet and D.G. Martin Alan W. and Eloise C. Neebe Pat and Mary Norris Oglesby Stephen A. and Sandra D. Rich Kirby D. Shealy III and Llewellyn R. Shealy

Nancy Margaret Pruden For Battle Park Endowment

David L. Robert*

Jean C. Stewart

Dr. and Mrs. Albert E. Radford David E. and Jean A. Radford

Francis Reid Senter James S. (Jim) Senter, for Natural Areas Endowment

Allen Gerson Slomka, UNC '46 Joseph (Joe) Slomka, for Stillhouse Bottom Natural Area

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

MONTHLY GIFT

Support the Garden each month by establishing a recurring gift via your credit card. See the options on the Gardens giving page, or contact Stephen Keith at 919-962-9458

Judy Stierand

Barbara Stiles and Bernice Wade

Lars G. Schoultz and Jane Volland, for Battle Park Expendable Barbara Wade Warren and Ralph M. Warren, for The North Carolina Botanical Garden Student Intern Fund

Madelyn Strickland

Betsy Strickland

Mary Jane Talbot Robert and Andrea Stark

Heidi Thornton

Martha Ann Propst

Susan Toplikar Mike Cindric

Mayme Tyner Sara P. Eoff

Page Vernon

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

Galen Wagner

Marilyn B. Wagner, for Stillhouse Bottom Natural Area

Sara Waitt

Mark and Lindsay Merritt, for North Carolina Botanical Garden Director's Fund

David Whittington, UNC '77

Kathryn and Peter Enchelmayer, for Battle Park Endowment

*Deceased

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



the CAMPAIGN for CAROLINA

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 85 percent of our \$30 million campaign goal. The priorities of our campaign include several capital projects, such as the entryway landscape, Forest Theatre enhancement, and Children's Wonder Garden construction. We are also working to increase annual giving, fund several named student internships, build 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.

Commitments as of 12/31/2021 \$26,017,358 Amount left to raise \$3,982,642

MEMBERSHIP RECOGNITION

Director's Circle and Sustainer members provide aspirational annual membership support to champion our plant conservation mission. The following joined the North Carolina Botanical Garden Foundation's top membership categories between March 1,2021 and December 31,2021. Thank you!

Director's Circle (\$1,500)

Anonymous Jim and Delight Allen Terry and Ernest Ball Ann Louise Barrick and Joyce E. McNeill Ruth N. Benton and Tod A. Sedbrook Christopher E. Bogan and Mary Jo K. Barnett Bruce and Dianne Birch Robert and Victoria Borden Cotton and May Bryan Lee and Libby Buck Lâle and C. John Burk Barbara J. Burns Asa and John Butts Nathan and Stephanie Byrd Pam and Bill Camp Claire and F. Hudnall Christopher Jinny Clancy Robin and Lewis Davis Amy and Ken Dunlap Louise C. Greene Marcella and Paul Grendler L. Clavton and Jane M. Harrell Anne F. Harris Gene and Pat Holder Travis Hornsby and Christine M. Chu Lu and Larry Howard Mary Cook Howes Eric and Emily Iverson Allen and Gina Jones David and Laurie Joslin James Joslin and Beth Hahn John and Betty King Paul and Phebe Kirkman Paula LaPoint Edgar and Nan Lawton Karen Levine and Andrew Sisson 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 Charlotte Louise Offerdahl and Grady W. Burgin James and Melinda Ogburn Peg Parker Stuart and Linda Paynter Jordan E. Pomeroy and Summer A. Crabtree Sims Preston and Olympia Stone Frances P. Rollins Maryann and Bill Roper Jenny and David Routh Joseph Harold Roycroft Jr. Mark Schubel and Mary Christoph-Schubel Kathleen and Todd Shapley-Quinn E. Preston Stockton Janice D. Stratton Charles V. Taft Sandy and Reaves Thompson Carol Tresolini and Tom Fiore Damon E. Waitt Frances and Gary Whaley Mark and Stacey Yusko

Sustainers (\$500)

Anonymous (5) Kate B. Adams and Robert J. Sudderth Michael and Mary Andrews Patricia Cain Beyle Barbara V. Braatz Lynne Ellen Bresler Valerie B. Bronner-Zamora Nathan A. Bryant and Katherine Meeks Wood and Catharine Burns Clifford and Linda Butler David and Anne Cottingham Janet and Jim Dean Mignon R. DeBerry Nancy Doubrava H. Shelton and Jo Anne Earp Muriel Y. Easterling Katherine and Joseph Ely Robert and Sara Euler Jim and Mary Jo Fickle Julie and Pete Gaskell Joanne K. Gardner and George Stuart Sallv Sue Glover Brooks and Chris Graebner Lester and Judith Grant Elise Pettrey Guthridge Ellen and Thomas Herron Susan Hollobaugh Herbert Hurwitz Richard K. Johnson Charlotte A. Jones-Roe and Chuck Roe Susan and Lewis Kellogg Betty P. Kenan Robert and Susan Knapp Thomas H. Krakauer Max Leach and Kate Sullivan Mark R Little George and Judy Lockhart Eve A. Ma

Betsy and H. R. Malpass Michael and Marcia Mayo Ross and Holly McKinney Cvrus I Miller Susan and James Moeser Pauline and David Moreau Jef Morgan Beverly and Robert Murdock Linda W. Norris Michael and Julie Papav Iola Peed-Neal* and Edward Neal Nick and Amy Penwarden Ona and Peter Pickens Allan and Carrie Porterfield Nancy and Ed Preston Jane B. Preyer and Lark Hayes L. Richardson and Marilyn J. Preyer Susan E. Read Deborah L. Reichert and Chanchal Samanta Judith A. Rizzo and Arthur H. Kempton Sallie S. Robinson Brenda H. Rogers Katherine T. Rohrer Margaret E. Scarborough Yolanda V. Scarlett Marika and Jonathan Schoolar David and Nancy Schoonmaker Tom and Margaret Scott Nancy S. Spencer Michael and Dominique Toedt Richard and Judith Vinroot Mal and Amanda Watlington Deborah and M. Holland West Floyd and Diane Whitney Sandy and Tin-Lup Wong Cynthia Kaye Woodsong

*Deceased

DONOR SPOTLIGHT: ALICE MAY'S CAMPAIGN GIFT SUPPORTS THE GARDEN

We are thrilled to announce a recent campaign gift from Alice May. Alice lived and worked for many years in New England and the Midwest before returning to her native state of North Carolina. She rekindled the relationship with her high school sweetheart, married in 2010, and then restored a historic home in Chapel Hill overlooking Battle Park. Alice fell in love with the Garden's mission of cultivating and conserving indigenous plant life. She shares the Garden's principles to engender respect for the native environment through programs like Camp Flytrap for kids and planned lectures by leading botanical and conservation experts.

In 2019, Alice accepted a position as a director of the North Carolina Botanical Garden Foundation, Inc., and worked with the development committee to identify new families and businesses to support the Garden. She frequently gives friends and family gift memberships to the NCBG Foundation to encourage participation in the Garden's programs.

Alice is a dedicated annual garden supporter, but also made a campaign gift to

the NCBG general operation fund in late fall of 2021. This campaign gift will allow the Garden to meet many needs throughout the organization this budget year. Alice's gift will also move the Garden closer to reaching its overall Campaign for Carolina goal. Thank you, Alice, for ensuring the North Carolina Botanical Garden continues to serve, in your words, as the "crown jewel of native plant propagation and plant preservation for the benefit of all in North Carolina and beyond."



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 Jordan Wilkins at 919-843-2411.

NATURAL AREA STEWARDS



HABITAT SUSTAINERS







GARDEN SUPPORTERS







HUMUS COMPOST



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



MARK YOUR CALENDAR

April 3 Evelyn McNeill Sims Native Plant Lecture hybrid with Julie Moore

May 7 Spring Native Plant Sale

May 6-15 Go Public Gardens Days

May 21 Carolina Moonlight Garden Party

September 17 Sculpture in the Garden Preview Party

> September 23 & 24 Fall Plant Sale

October 28 BOOtanical Family Festival

> November 6 Jenny Elder Fitch Memorial Lecture

November 18 NC Botanical Garden Foundation Membership Meeting

December 2 Winter in the Garden NCBGF Member Holiday Party

> December 3 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

ADDRESS SERVICE REQUESTED

NONPROFIT U.S. POSTAGE PAID UNC – CHAPEL HILL



N C B G . U N C . E D U