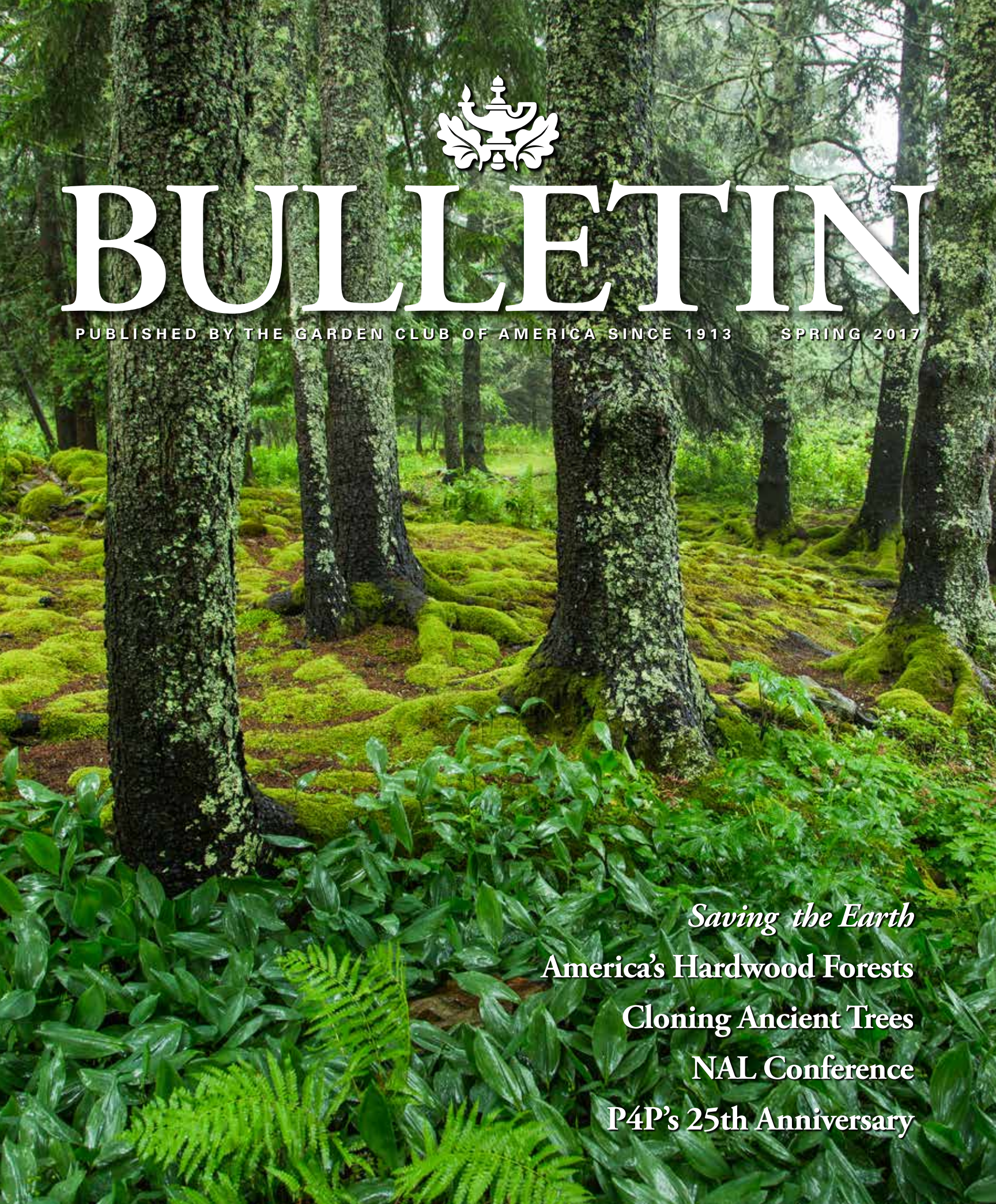

BULLETIN

PUBLISHED BY THE GARDEN CLUB OF AMERICA SINCE 1913 SPRING 2017

Saving the Earth

America's Hardwood Forests

Cloning Ancient Trees

NAL Conference

P4P's 25th Anniversary

The purpose of The Garden Club of America is to stimulate the knowledge and love of gardening, to share the advantages of association by means of educational meetings, conferences, correspondence, and publications, and to restore, improve, and protect the quality of the environment through educational programs and actions in the fields of conservation and civic improvement.

Advertising and Submissions

The Garden Club of America, a 501(c)(3) organization, publishes the *Bulletin* quarterly. The *Bulletin* accepts advertising from GCA clubs, club members, and relevant companies and individuals. Media kits are available upon request. Additionally, the *Bulletin* welcomes letters and story ideas from GCA club members and other interested parties.

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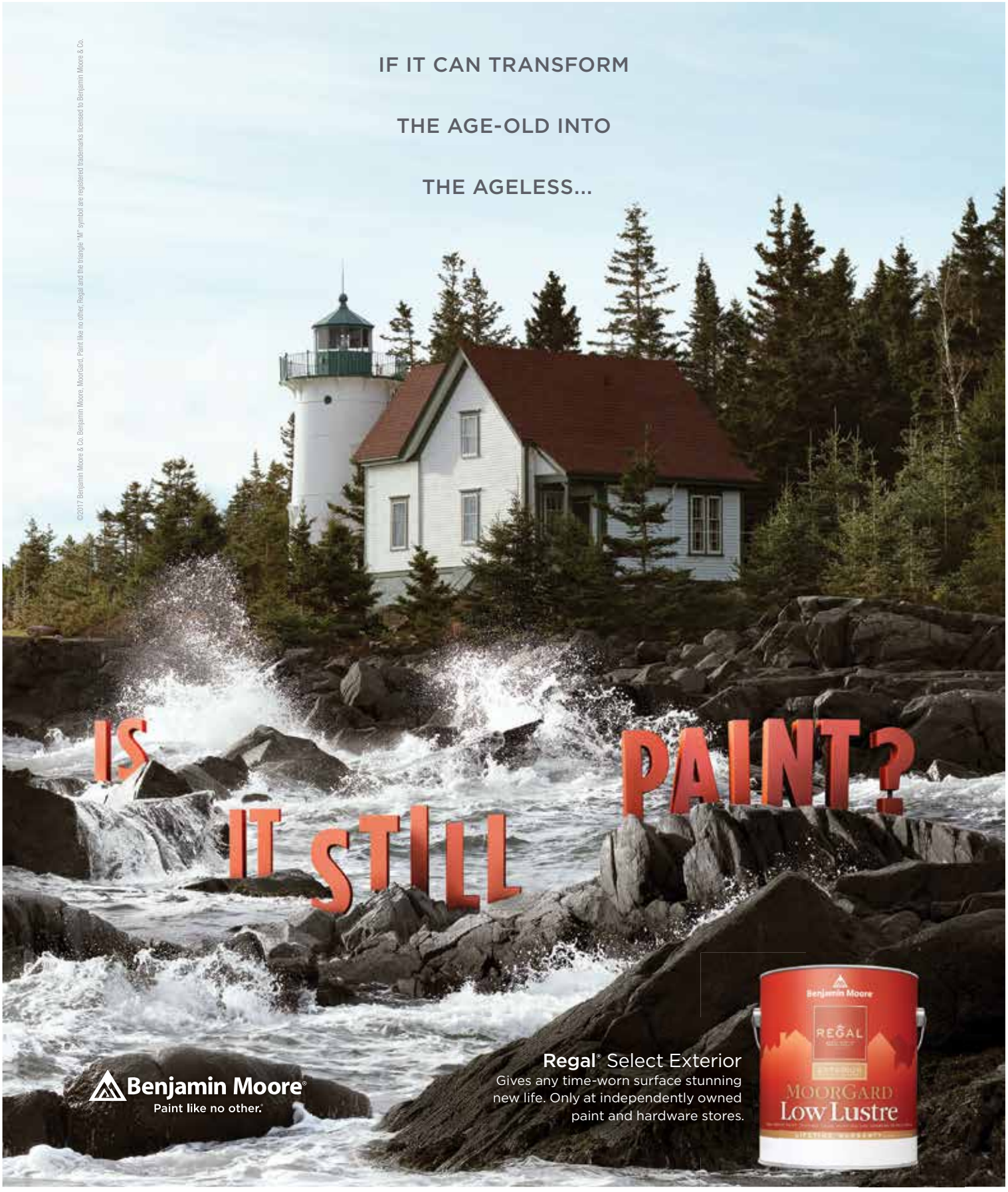
On the Cover:

Underplanted in the mossy woodland at Sheep Meadow, North Haven Island in Penobscot Bay, ME: lily of the valley (*Convallaria majalis*), thick stemmed wood fern (*Dryopteris crassirhizoma*) and Jack-in-the-pulpit (*Arisaema triphyllum*). Photo by Missy Janes (Fauquier and Loudoun Garden Club, Zone VII)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A Dream of Trees

Trees. I love trees. In any season, I stand in our yard and admire the massive oaks, the dozen magnolias, the tulip poplars, the hickories, the maples, the dogwoods, the redbud, the native cherries, the pines and, yes, the mighty hemlocks. Two massive ones went down in a freak wind storm while I was attending NAL in Washington last year. Last fall, Hurricane Matthew came inland and claimed our largest pine. Grief and awe of nature are what one feels at times like these.

The magnificence of the natural world and the ongoing challenges of loss reach across the pages of this *Bulletin* in articles about our great northern hardwood forests, the emerald ash borer beetles, and so much more. The leadership of the Bulletin Committee in building this issue is to be commended. Go to the table of contents!

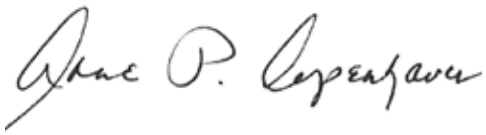
Words. I love words. If you have never read the words of Mary Oliver, past winner of the Pulitzer Prize for Poetry, now would be a good time. In her 1992 *New and Selected Poems, Volume One*, Mary Oliver walks us through the natural world, transporting the reader from this complex life we lead to a simpler reality. But that is just the beginning of the power of her words, the ones she chooses and the ones she does not. The poem I read out loud to my book club begins, "There is a thing in me that dreamed of trees…" On the advice of a fellow member, author Emily Wilson and friend of Mary Oliver, I simply looked at the table of contents and chose titles that intrigued me. In a touch of irony, *A Dream of Trees* was my first choice, and as I read it, I realized have read this many times over through past decades, not realizing the poet.

At that same book club meeting, another member was holding in her hands the 2016 *The Hour of Land: A Personal Topography of America's National Parks*, by Terry Tempest Williams. What caught my attention beyond the title was her description of the author as having an "ethical stance towards life."

Ethical stance towards life. Not just words. Isn't this the thread that weaves us together regardless of our chosen passion within The Garden Club of America? Ethical stance towards life…these words seem to capture the essence of who we are and what we do. As I struggle to edit brochures and annual reports and publications of this organization, to write articles, correspondence, speeches, and daily emails by the hundreds, I am ever aware of the power of words, the ones we choose to use, and the ones we do not.

As this *Bulletin* issue goes to press, over 300 smart and dedicated fellow GCA club members have participated in the NAL conference in Washington. Flower shows and zone meetings are being staged in the midst of spring's arrival in our gardens. Another Meeting Week at Headquarters is imminent and the Annual Meeting approaches. There is sure knowledge our GCA leaders will apply an ethical stance towards life in all our ongoing fields of endeavor—now more so than ever.

With pride in and admiration for all our membership in every discipline,



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Happy Spring!

Spring is finally here and we are energized! At our January meeting on St. Simons Island, Georgia, we visited stunning gardens and homes (the advantages of GCA association are rather awesome), accomplished all of our tasks, and then spent a full morning at Cannon's Point, a 608-acre wilderness preserve on the northern end of the island. (Don't miss our article about this unique maritime forest and the land trust that protects it.)

Spring also means that it is time for the GCA's Annual Meeting with its many workshops, garden visits, and presentations by leading environmentalists and cutting-edge researchers. While we will be there to cover the event, we all know that shopping at the boutique means bringing an extra bag for those purchases—shoes, cute clothes, gifts, more shoes (but, hey, the AM scarf takes up less room!). The Annual Meeting is always a special event, and no night is more meaningful than the Awards Dinner when we learn about, and hear from, those outstanding men and women receiving the prestigious GCA medals.

In this issue—filled with articles about our forests, trees, plants, and pests—is an interview with a 2004 GCA medalist, David Milarch, who tells us that receiving the GCA Distinguished Service Medal was one of three "breakthrough" events that had a significant impact on his work to clone our ancient trees. The importance of the GCA awards could not be underscored more pointedly. You will also find articles about people such as Doug Tallamy, Nick Henshue, Louie Schwartzberg, and 17-year old Brigitte Harbers—all trailblazers in saving the earth.

And what could be more timely than the National Affairs & Legislation Conference in February with climate change as its focus or Partners for Plants' 25th Anniversary? All this is in our spring issue along with our favorite club news and celebrations.

Working on the *Bulletin* has taught us that the accomplishments of this organization from its inception in 1913 through today—104 years later—are due to the sustained dedication, hard work, and support of its club members, now numbering nearly 18,000. As always we are grateful to each of you and to the GCA's national leadership and staff for collaborating with us as we create each new issue of the *Bulletin*.

—The Bulletin Committee

Creating the Pipeline of Environmental Leaders

by Dede Petri, GCA First Vice President, Georgetown Garden Club, Zone VI

Photo by Debbie Laverell

From climate change to invasive species, the challenges to the environment continue to grow—and the need for trained horticulturists, botanists, and policymakers who are prepared to address them. That's why, for over a century, the GCA has been outspoken in its call for a robust and diverse pipeline of environmental leaders who can restore, improve, and protect our environment. *The need today is urgent.* In national parks and other public lands, staff without botanical training are making decisions about plant conservation and restoration. Park leaders increasingly complain that they cannot find botanists and other plant scientists who are adequately prepared to address the challenges caused by a rapidly changing environment.

Working with the Chicago Botanic Garden, the GCA National Affairs & Legislation (NAL) and Conservation committees recently helped craft legislation to promote hiring botanical experts and the use of native plants on federal lands. The bill, H.R. 1054, introduced by Representatives Mike Quigley (D-IL, 5th District) and Ileana Ros-Lehtinen (R-FL, 27th District) on February 14, 2017, has been endorsed by 60 horticultural and conservation organizations. Known as the Botanical Sciences & Native Plant Materials Research, Restoration and Promotion Act, the bill offers real benefits to students entering the botanical sciences, including forgiveness of student loans for those who are trained and employed in this field.

H.R. 1054 also creates a preference by federal agencies for the use of locally-adapted native plant material in their land management practices. This would, in turn, encourage states to use native plants in their restoration programs in conjunction with the Surface Transportation Act. The legislation would maximize the use of native plants in 50 million acres of government land, including all federal office buildings and their landscapes, thereby increasing the demand for nurseries that can deliver the needed plant material. By

Photo by Missy Janes

H.R. 1054 Supporters to Date

Alabama Plant Conservation Alliance, Alabama Wildflower Society, American Public Gardens Association, Arizona Sonora Desert Museum, Association for Zoological Horticulture, BFI Native Seeds, BG-Base, Botanical Club of Wisconsin, Botanic Gardens Conservation International-US, Botanical Society of America, Brooklyn Botanic Garden, California Native Plant Society, Center for Plant Conservation, Chicago Botanic Garden, Colorado Native Plant Society, Delaware Nature Society, Denver Botanic Garden, Florida Association of Native Nurseries, Florida Native Plant Society, The Garden Club of America, Georgia Botanical Society, Georgia Native Plant Society, Georgia Plant Conservation Alliance, Houston Zoo, Illinois Native Plant Society, Institute for Applied Ecology, Iowa Native Plant Society, Jacksonville Zoo and Gardens, Key West Botanical Garden Society, Inc., Kinnikinnick Native Plant Society, Living Habitats, Longwood Gardens, Missouri Botanical Garden, Missouri Native Plant Society, Mt. Cuba Center, National Association of Exotic Pest Plant Councils, National Wildlife Federation, Native Plant Conservation Campaign, Native Plant Society of New Mexico, Natural Areas Association, New England Wild Flower Society, Oklahoma City Zoo and Botanical Garden, Oklahoma Native Plant Society, Oregon Native Plant Society, Pinelands Preservation Alliance, Prairie Legacy, Inc., Rain Shadow Consulting, Salomon's House, Santa Barbara Botanic Garden, Society for Ecological Restoration, The Atlanta Botanical Garden, The Cobb Land Trust, Inc., The Institute for Regional Conservation, The Morton Arboretum, The Polly Hill Arboretum, The Xerxes Society, Quarryhill Botanical Garden, Virginia Native Plant Society, Washington Native Plant Society, and the Wilbur D. May Arboretum and Botanical Garden.

The GCA Speaks for Plants

The GCA understood the importance of native plants, public lands, and the need for botanists long before many others. The very first policy statement in 1913 outlined the GCA's goal "to aid in the protection of native plants and birds." In 1924, when the Wildflower Preservation Committee was renamed the GCA Conservation Committee, there were three subcommittees—forestry, bird protection, and native plants.

Staying true to its commitment to the protection and advancement of native plants, in the late 1980s the GCA appealed to Congress for increased funding for plant management. Joan Shorey from the Georgetown Garden Club, then vice chairman for endangered species, testified before the Senate raising the concern that very few botanists were employed by the government to locate and study threatened plants. Two years later, GCA President Nancy Thomas (1991-1993) from The Garden Club of Houston and Marilyn Magid from Cedar Rapids Garden Club testified again.

In 1998 and again in 1999, then NAL Committee Chairman Jane Henley appeared before the House Appropriations subcommittee to bemoan the dearth of plant specialists. "Although birds, fish, and animals are often featured in media coverage of our endangered and threatened species," she related, "actually more than 60 percent of listed species are plants."

So, now, here we are today—going one step further. And H.R. 1054 is the natural next step in the GCA's ongoing and unique advocacy for native plants, protection of public lands, and the need for botanists. Not only do we have a bill, we have two co-sponsors from both sides of the party line who have introduced the bill—on an issue that meshes with the interests of our clubs, existing GCA programs, and a national unmet need.

SEED YOUR FUTURE™
Promoting Horticulture in the US

saving native plants, the bill goes a long way towards saving pollinators and other wildlife that depend upon them.

In tandem with this legislative effort, the GCA has signed on to a new campaign called *Seed Your Future.* Its primary sponsor is Longwood Gardens and includes endorsement from over 150 other organizations in the horticultural and environmental fields. A national initiative, *Seed Your Future* promotes horticulture as a vital, viable, and exciting career path for the nation's youth. In partnership with *Scholastic Magazine*, a horticultural/plant science based curriculum is in development, which will be free of charge to all seventh-grade through tenth-grade teachers in the United States.

The *Seed Your Future* campaign provides an array of resources and information for local clubs to share with students, schools, and teachers in their communities. It also offers a new website venue for the GCA to spread the word about its 27 merit-based scholarships which are awarded to more than 90 students annually. For decades, the GCA's robust scholarship program has laid the groundwork for the next generation of horticulturists, urban designers, climate scientists, entomologists, plant pathologists, and educators. In the same way, the GCA's Hull Awards recognize individuals who work with children under 16 to provide outstanding environmental education and inspire appreciation for the beauty and frailty of our planet.

Seed Your Future promotes increasing the number of horticulturists through education and outreach. Photo courtesy of *Seed Your Future*

Cristián Samper, former GCA scholarship recipient and now president and CEO of the Wildlife Conservation Society, understands the GCA's influence on the next generation. "My experience," he says, "demonstrates the immense impact you have had in the minds and hearts of those who are helping to shape the world today." Going forward, the GCA pledges to remain on the front lines when it comes to supporting the environmental leaders of tomorrow.

Dede Petri also represents the GCA on the Seed Your Future *Advisory Council co-chaired by Professor Charlie Hall (Department of Horticultural Sciences, Texas A&M University and holder of the Ellison Chair in International Floriculture) and Janet Mahoney (Director Global Resource Planning and Compensation, Driscoll Strawberry Associates Inc.)*

Our Great Northern Hardwood Forests

by Lorraine Alexander, Millbrook Garden Club, Zone III

The White Mountains, part of the northern Appalachians and home of Hubbard Brook Experimental Forest. Photo by Joe Bar

For at least 15,000 years residents of planet Earth have been living in a relatively stable and warm world. Before that, five ice ages came and went. "Glaciologically speaking," says the BBC's online Science page, we are experiencing an "interglacial" age, defined as such because the Arctic, Antarctica, and Greenland still exist—more or less, as time-release photography of the two polar caps is documenting.

We know that ice caps are melting too fast, that oceans are rising, and that corals—living creatures sensitive to the slightest change in deep-sea temperatures—are dying from the Pacific to the Caribbean. But let's move from the depths of our oceans to the heights of our forested expanses, specifically in our country's Northeast. Are our great northern forests also showing signs of disturbance related to climate? It's complicated.

As the glaciers of the last Ice Age were receding in what would become, 14,000 or so years later, New Hampshire, herbaceous pioneer plants—the first, hardy colonizers of the residual rocky terrain—took hold. During ensuing millennia the present-day White Mountains were covered in conifers, aspen, oak, and white pine, soon—in geological time—to be followed by sugar maple, hemlock, and beech. We know this from studies of the pollen imbedded in the sediment of New Hampshire's Mirror Lake, within the Hubbard Brook Experimental Forest. Founded in 1955 by the US Forest Service as a site for hydrology studies, it landed squarely on the scientific

The Hudson River School of Painting, America's first formal school of art, celebrated natural landscapes as divinely ordained…these artists were early environmentalists.

map in 1963, when Gene Likens, fresh from Dartmouth, and his team calculated acid levels up to 100 times those expected in freshwater samples. Nine years of research later, they published their discovery of "acid rain," confirming the link between the combustion of fossil fuels and the increased acidity of precipitation as an accelerator of environmental change. (Likens was awarded the 2001 National Medal of Science by President George W. Bush.)

It is no accident that two preeminent forest study centers—the nearly 8,000-acre Hubbard Brook and Harvard Forest, the university's 3,500-acre research site in central Massachusetts—are located in the Northeast. With 80 percent tree cover, this nine-state region is the most heavily wooded in the US. It wasn't always so. A paper by lead author Jonathan Thompson, a Harvard Forest ecologist and Smithsonian researcher in conservation biology, summarizes land-survey records over four centuries from Maine to Pennsylvania. Anything but dry reading, it's a story that documents land use through the period of European settlement, when logging and agricultural clearing removed more than half the region's forests. (Even a late-18th-century painting of my neighbor's property and Federal house shows barely a shrub.) The enormous geo-database compiled for the study over three decades is a record of resilience—"The Northeast *wants* to be a forest," says Thompson—as well as of significant change. Maples have exploded while oaks, beeches, and chestnuts have declined, depriving wildlife of the tree nuts they depend on in winter.

As the Erie Canal became a commercial gateway westward and large-scale farming moved to the open (easier to cultivate) plains, some northeastern woods bounced back. This rejuvenation was counterbalanced, however, in the mid-19th century by tree removal to make way for the railroads and increased development. The Hudson River School of Painting, America's first formal school of art, celebrated natural landscapes as divinely ordained. Decrying the denuding of nature in the service of progress, these artists were early environmentalists.

Though forests, however transformed by man and climate, can rebound, one category of forest does not: old growth, which in the Northeast represents only one

Artist Victor O. Leshyk's illustration of the Gilboa petrified forest, 2012

percent of standing trees. Chris Roddick, chief arborist at the Brooklyn Botanic Garden, tells us, "In the old-growth forests, you had hemlocks that were six or seven feet in diameter, chestnut trees 200 feet tall." Today very little east of the redwoods looks remotely like those ancient trees. But a recent discovery in the Catskill Mountains has made old growth seem new.

From the 1850s forward, pieces of petrified wood and fossilized tree stumps were unearthed near Gilboa, NY, but the place "went back to sleep like Rip Van Winkle," says Christopher Radko, a member of Philipstown Garden Club and a proponent of seed and plant literacy in Hudson Valley schools. Study picked up when, in 1920, pioneering paleontologist Winifred Goldring (1888-1971) identified fossilized seed ferns and created, for the New York State Museum in Albany, the first diorama of ancient plant life. It wasn't until a 2010 dam-maintenance project,

however, that the origin of these and other fossils was verified as going back 386 million years, when the Hudson Highlands were close to present-day Morocco! (Don't ask.) Gilboa's petrified forest is now considered the oldest on the planet. William Stein, professor of biological sciences at the State University of New York's Binghamton campus, described the impact as "like discovering the botanical equivalent of dinosaur footprints." Dinosaurs would not emerge for another 150 million years, but the fossils' fern- and palm-like trees are straight out of *Jurassic Park*.

And what of the present? What has driven change since relatively recent Colonial times? There are numerous answers beyond the disruptions of farming and timber harvesting. Gene Likens, Cary Institute's Gary Lovett, Harvard Forest's David Foster, and other scientists are studying, among much else, the effects of warming. They know that growing seasons for canopy trees—trees with crowns tall enough to cast significant cooling shade—are lengthening, which should increase plant productivity and nutrient cycles. And yet, tree species have also begun to shift, altering the dynamics of critical food webs.

The idea of ecosystem shift is a powerful one. The greatest, most consequential forest of all, the boreal forest, which circles the globe just under the Arctic, is our world's prime carbon sponge. And scientists have believed that, as the Arctic melts, the boreal forest would expand northward, actually increasing its carbon consumption. However, research published online last May in *Nature Geoscience* by the Lawrence Berkeley National Lab predicts *shifts* there, not *expansion*. If the Berkeley Lab is right, the forest's southern range would shift to grasslands, which can't begin to absorb the amount of atmospheric carbon trees do.

The idea of ecosystem shift is a powerful one. The greatest, most consequential forest of all, the boreal forest, which circles the globe just under the Arctic, is our world's prime carbon sponge.

The Harvard Forest Fisher Museum's historical diorama of a typical New England landscape: 1700, pre-European settlement; 1740, wilderness cleared and domesticated; and 1830, the peak of deforestation for farming, fuel, and timber. Courtesy of the Harvard Forest Archive

Tree-SMART Trade

Our enjoyment of coffee from Brazil, wine from Australia, or essential oils from the tropics comes with an unexpected price. Traveling alongside them in the untreated wood of container ships' packing crates and on imported plants, hitchhiking pests present an annual $2 billion bill to our economy. But the impact of these invasive agents, against which our native trees have no natural defenses, can be lessened if not entirely eliminated.

In 2003 the International Plant Protection Convention (IPPC) created a plan, revised in 2009, that requires all international ocean freight packed in any kind of raw wood to be fumigated or heat-treated to kill insects and fungi. Following up on this and other IPPC guidelines, a collaborative effort of the Science Policy Exchange and the Cary Institute of Ecosystem Studies has resulted in proposed Tree-SMART Trade policies: encouraging shippers to switch to cheaper, denser packaging such as press board (made from wood chips and sawdust), oriented strand board (a form of particle board using adhesives), and metal; expanding early detection and rapid response programs; restricting or eliminating imports of live woody plants; and tightening enforcement of penalties for noncompliant shipments. Currently five violations are allowed per year, which undermines the program. Trees, whether in the wild or in urban communities, are a critical form of infrastructure around the globe. Tree-SMART measures may be too late for effective control of some well-established pests, but every tree that is saved brings us one step closer to mitigating the effects of climate change.

—Kathryne Singleton, Rumson Garden Club, Zone IV

White pines and maples at Harvard Pond. Photo by David Foster

There's good reason to focus elsewhere, however. According to forest ecologist Charles Canham, of Cary and Hubbard Brook, the most vulnerable trees in the Northeast—balsam fir, white spruce, and northern white cedar, whose mortality rates rise with temperature—are standing their ground. "I have less hope than some about our ability to mitigate climate change, due to its irrefutable impact in the Arctic," says Canham, "but the temperate forests of North America are likely to be the most resilient of any biome on the planet." This is qualified good news.

The present danger to trees is invasive pests. Naturalist David Burg, a longtime board member of NYC Audubon, ranks the pest threat a close third to development sprawl and environmental toxins. And many tree terrorists enter our ecosystems today via a kind of superhighway—the massive container ships of global trade.

In the early 20th century, chestnut blight entered North America on Japanese nursery stock and by 1940 had obliterated the American chestnut from its eastern range. The gypsy moth was imported in 1868 to create a hybrid silk-spinning caterpillar; 120 years later 13 million acres of hardwood forest had been defoliated. Dutch elm disease was introduced by an Ohio furniture-maker in the 1930s, and beech bark disease, which entered Maine in 1890, has migrated to North Carolina and Tennessee. Recent infestations—of the emerald ash borer, the hemlock woolly adelgid, and the Asian long-horned beetle—have continued the rampage.

As forests are increasingly stressed by a multitude of assaults, the key differential lies in the rate of tree mortalities compared to the rate of scientific discovery, with funding an expression of societal will.

On the Job

Since 2012 an experiment called CCASE (Climate Change Across Seasons Experiment) has been conducted at Hubbard Brook Experimental Forest by Pamela Templer, a biology professor and research fellow at Boston University. Using 2.5 miles of buried heated cables connected to a control room, she and her students have been able to manipulate the soil temperatures on over 6,000+ square feet of deciduous forest.

This simulation is building on existing forestry data as winter temperatures rise and snow's protective cover recedes. (Today Hubbard Brook's average snowpack is 8.6 inches deep, compared to 54.5 inches in 1969.) The study tracks damage to tree roots in exposed soil; when the water in roots freezes and expands, they are torn open and tree nutrients like nitrogen are left behind to flow into streams, a toxic outcome for humans and wildlife. Such simulations bring hard evidence to climate modeling, and this one, with mountains of data to come, is "really pushing the frontiers," says US Forest Service ecologist Lindsey Rustad.

• • •

Fossils go back to prehistoric times, but fairly recent remnants of the past can send equally clear messages. In 2013 investigators from Franklin & Marshall College in Pennylvania, were observing restoration efforts at the Denlinger's Mill dam—one of thousands of small dams statewide that powered mills and forges during the period of European settlement. And they made a startling discovery: preserved leaves imbedded in layers of mud under the mill dam's several centuries of accumulated sediment.

Research assistant Sara Elliott led the F&M team in peeling apart and washing the precious leaves in chemical baths. As reported on the LiveScience page of *Scientific American*, their work confirmed dramatic tree-species change since 1700, from American beech and chestnut, red oak, and sweet birch to box elder and sugar maple. These as well as leaves from swamp plants that came to light tell us how much entire landscapes can be altered by human activity within relatively brief time spans.

—Louise Van Tartwijk, Washington Garden Club, Zone II

Right: Staff and research assistants at Hubbard Brook Experimental Forest in 2015. Photo courtesy of Hubbard Brook Research Institute

Native Ash Trees: A Tale of Many Cities

Who among us hasn't occasionally taken trees in our gardens and parks for granted? It's sometimes easy to believe that trees can take care of themselves, and to forget how well they take care of us. When they are healthy, they absorb harmful carbon from the air, provide habitat for wildlife, and, in cities, reduce the "heat-island effect" caused by concrete and impervious asphalt. Trees soothe us, improving mental health. When they suffer, we suffer, as cities nationwide are learning much too fast and furiously. The most virulent assault on urban trees by an invasive pest in US history, already present in 30 states, is that of the emerald ash borer (EAB), which was first identified in Detroit in 2002—yes, tracking disease can resemble FBI work—after arriving years before in untreated shipping crates from China.

Ash trees make up less than ten percent of US forests, though that figure rises in places like the damp lowlands of southern New England. In our cities, however, ash has become a tree of choice due to its fast growth and adaptability as well as its classic beauty. Of the 45 to 65 species of ash in the *Fraxinus* genus, 22 are native to the US, and of those the green ash, a survivor of drought, flood, and cold, is the most commonly planted street tree. All ashes are at risk—eight billion trees in North America alone—but the EAB's impact is most visible today in such Midwestern cities as Toledo and Cincinnati, as documented in Andrea Torrice's 2015 documentary *Trees in Trouble*. Early on we see a Cincinnati street shaded by the lush canopies of 40-foot ash trees, then that same street lined with stumps. At the time of filming, the Cincinnati area was expected to lose up to 20 percent of its total tree cover.

This past winter I spoke with Dave Gamstetter, natural resources manager for the City of Cincinnati. To ensure public safety it was vital to get ahead of the epidemic through prophylactic takedowns. That has meant 5,000 trees removed (first from high-use playgrounds, picnic areas, and dog parks) and replaced, with another 300 to be cut down before spring. About 200 of what appear to be healthy trees along major thoroughfares are being treated. With a staff of seven, plus local and US Forest Service help, it's been a grueling process—and a lesson in urban preparedness.

"We knew the EAB was coming before it arrived, so we began with a measured take-down of the biggest trees, the ones whose canopies would be the most expensive to replace. And we knew the wood had to be managed." And here's where Cincinnati's story takes an upward turn. "Logs were milled and, in partnership with public schools, turned into panels (schools paid $1 a board foot). Montessori schools bought movable cabinets made of the ash. Later our Urban Timber Plan moved into flooring, which has been sold to Northern Kentucky

Ash-lined street in Toledo, OH, before (2006) and after (2008) EAB infestation. Photos by Dr. Dan Herms

A Beetle Strikes Again

The polyphagous shot hole borer beetle

A beetle with an odd name, the polyphagous shot hole borer (PSHB), belongs to a family—Ambrosia—that sounds anything but threatening. Unfortunately the PSHB is a fearsome foe, devastating over 200 tree species in Southern California. Some of its victims include the protected California sycamore (*Platanus racemosa*) and California live oak (*Quercus agrifolia*) as well as box elder (*Acer negundo*), avocado (*Persea americana*), and English oak (*Quercus robur*). About the size of a sesame seed, the PSHB does not eat wood or foliage but instead drills into the bark, and at its most destructive injects a deadly fungus. Telltale signs of trouble are dark oily stains and small crusty eruptions on the trunks.

As with most infestations, stopping the spread is key. The PSHB can travel up to 12 miles a year in search of new hosts, and so it's essential that people not move infected wood or purchase mulch from affected counties. To date, chemical control is not an option. The best preventive measure is chipping or grinding infected wood. Burning, fumigating, and covering contaminated wood with tarps may also prove effective. Any PSHB outbreak should be reported to agricultural officials for tracking purposes.

—Pamela Hirsch, Garden Club of Morristown, Zone IV

University [seven miles south of downtown Cincinnati] and private residences."

America's urban ash trees have no defense, *yet*. Experiments with stingless wasps that prey on EAB larvae have so far yielded little. Jennifer Koch, a biologist at the US Forest Service Research & Development station in Ohio, has been working since 2007 to develop hybrid ash and beech trees resistant, respectively, to EAB and the beech scale insect. Her work and Cincinnati's Urban Timber Program were featured in an hour-long special on BBC Canada. It's a global problem accelerated by global trade and exciting global teamwork among researchers. Forest Service researchers are part of an international team that was recently awarded over $1.2 million by the United Kingdom's Tree Health and Biosecurity Initiative to pioneer a new method for finding genes connected to pest and pathogen resistance in trees.

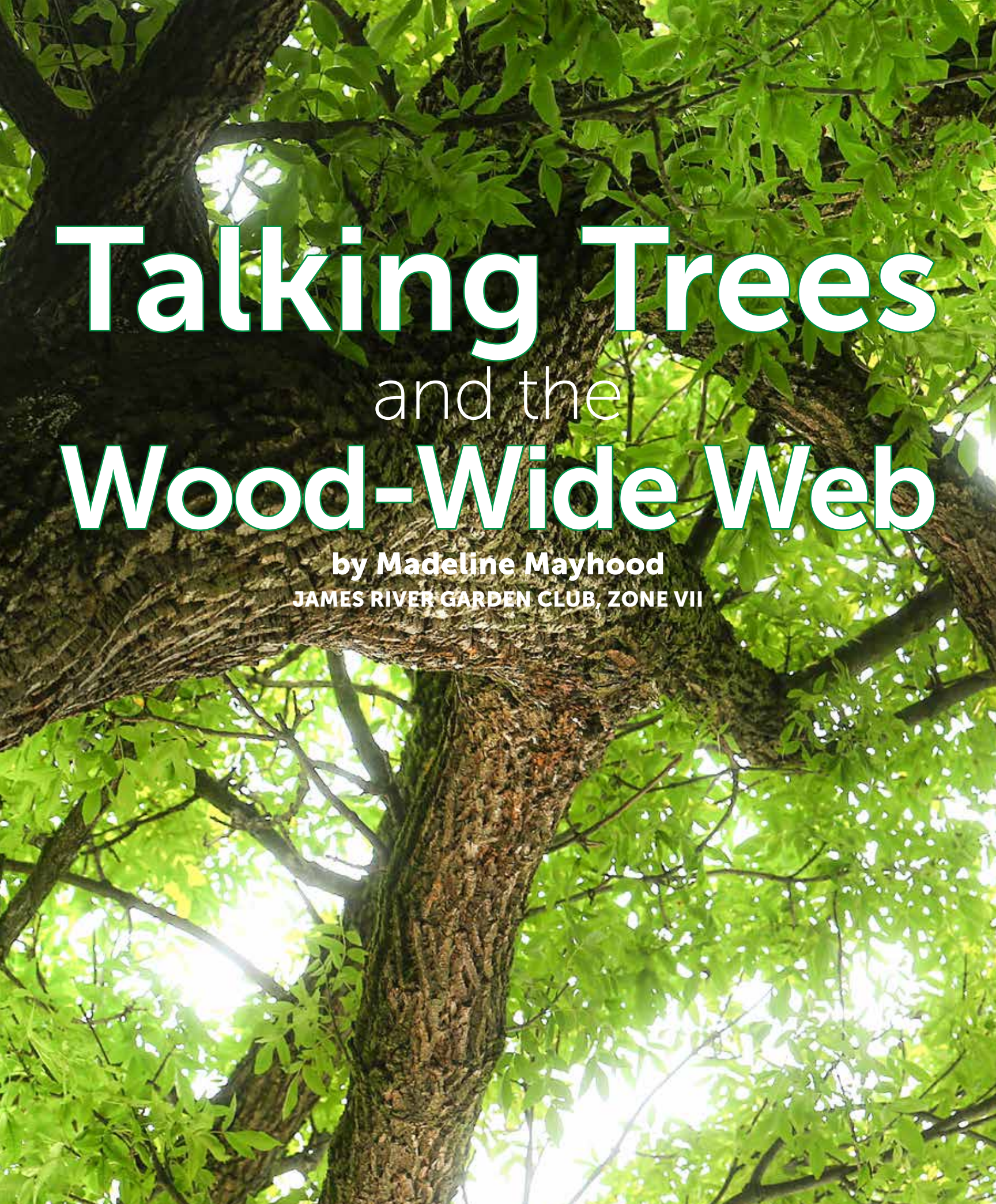
What can we do at home, especially in our cities? (Combatting pests in the wild, that is, at the level of entire forests, is all but impossible. "We're never going to treat, or inspect, our way out of this problem," says forest ecologist Gary Lovett.) While science continues the search for a safe solution, Cincinnati provides a model. And cities as far west as Bozeman, Montana, where EAB has yet to arrive, are engaged in exactly what Dave Gamstetter advises: preparation, preparation, preparation.

Bozeman's "Street Tree Guide" for selecting and planting the city's urban "infrastructure" goes out of its way to recount the many reasons trees make residents' lives better—ending in $2.3 million of benefits from its 20,000 publicly owned trees. It also gives a complete species guide, from alder (*Alnus*) to serviceberry (*Amelanchier spp.*), with planting and care instructions. Most impressively, the online booklet details two working partnerships between Bozeman's Forestry Division and homeowners: a cost-sharing program (for boulevard planting) and a voucher program (for replacement trees).

Right now ashes comprise 75 percent of Bozeman's mature street trees, and the guide makes clear that planting them is no longer permitted. Will science or the EAB win the race down Bozeman's tree-lined streets?

—Lorraine Alexander, Millbrook Garden Club, Zone III

A "gallery" carved into ash wood by larvae of the emerald ash borer. Photo by John Hritz



Talking Trees and the Wood-Wide Web

by Madeline Mayhood
JAMES RIVER GARDEN CLUB, ZONE VII

In a recent adventure along the Georgia coast with a certain GCA committee, I spied dozens of giant pine logs crammed into the back of a tractor trailer, their cut trunks weeping as they careened down the highway. Bound for some mill in the distance, sap was literally pouring out; giant tears flew in all directions. Production of sap, or resin, is a response to injury, and these pine trees were on overdrive, furiously and valiantly trying to protect their open wounds from potentially damaging invaders. Even to those with the most hardened hearts, how was that scene not the littlest bit poignant?

Assigning "poignant" to a tractor trailer's cargo might be a stretch to some. But as an unapologetic anthropomorphist, I think I'm in stupendous company. Beatrix Potter, Walt Disney, Jane Goodall, J.R.R. Tolkien, Lewis Carroll, Roald Dahl, Rudyard Kipling—they are world-class anthropomorphists. Thomas Jefferson's crush on the botanical world was no secret. He had "pet trees" among the many groves and allées and stands he planted, and his "puppy love for peas," in Peter Hatch's words, is well documented. Monticello's former director of gardens and grounds has written extensively about Jefferson's deep connection to the earth. If our third president had witnessed those pine logs weeping along the highway, he, too, would have been moved.

Those not inclined to anthropomorphize would wonder why we can't just leave nature alone; they would, no doubt, wince at my description of tree tears. The German forester Peter Wohlleben argues that distilling phenomena into human terms makes it far less likely eyes will glaze over when the discussion gets too scientific. In his recently published book, *The Hidden Life of Trees*, Wohlleben uses human language to describe the remarkable society of trees. By doing so, he makes the forest accessible.

Wohlleben, who manages a beech forest in Eifel, Germany, writes about trees growing old together—often in pairs in much the same way humans do. He speaks of trees feeling loneliness, of being social and having friends. Willows are loners and poplars aren't social either. Beech trees, he says, are the bullies of the forest. On a ruthless quest for more space, they will literally wipe out other trees. They harass the oak, for example, to such an extent that the oak weakens. The beech grows its branches through its neighbor's, monopolizing light and air; its roots grow under an oak's to gobble up space and nutrients. The oaks panic and start to grow "fear branches"; death comes within a decade.

Trees are the foundation of the forest, with rugged branches and beautiful crowns. What's aboveground, however, is only a fraction of the real story. "A forest is so much more than a collection of trees," says Suzanne Simard, professor of forest ecology at the University of British Columbia. "Underground there is a whole other world, one full of infinite biological pathways that connect trees and allow them to communicate." Think of the forest as one single organism—an arboreal intelligence. Simard explains that trees in a forest organize themselves into far-flung networks. They use the underground web of mycorrhizal fungi, which connects their roots, to exchange information and even goods. This "wood-wide web" allows trees in a forest to communicate—they signal insect attacks and deliver carbon, nitrogen, and water to their fellow trees in need. When confronted with a parasite, some trees produce a chemical to ward off attacks; their neighbors, though

Neighboring trees communicate and cooperate. Photo by Valerie Grace

Previous Page: The canopy overhead reveals an extraordinary network of limbs and foliage. Photo by David Spencer, courtesy of the State Journal-Register (Springfield, IL)

This lone pair grows old together in the rich agricultural area of the Palouse in the Northwest. Branches and trunks yield to one another and cooperate to maximize space and light. Photo by Melissa Clark

not under a direct attack, produce the same toxin. In this way, communities of trees work together against a common threat.

Interest in plant neurobiology—the exploration of how plants perceive their circumstances and respond to environmental input—has increased in the last several decades. Still controversial, it is either dismissed as nonscientific bunk or regarded as a "radical new paradigm in our understanding of life," according to journalist, writer, and activist Michael Pollan in *The New Yorker*. Thanks to Wohlleben, Simard, Pollan, and a host of others, however, plant neurobiology is getting more traction. But perhaps a slight *language* paradigm shift is in order. What if it's all about etymology and the nuances of words and language and not the legitimacy of one brand of science over another? What if "brains" don't have to include human anatomy, and the capacity for "communication" extends beyond the animal kingdom? To the intellectual establishment, no "brain" equals no "intelligence." But that may be too dismissive. Does "intelligence," ironically, extend beyond our current capacity to grasp a far more complex meaning?

Suzanne Simard has tested theories about how trees communicate with each other and determined, through extensive research, that Douglas fir and birch engage in lively, two-way conversations. They trade nutrients as deficits occur within any given season, a particularly beneficial symbiosis between evergreen and deciduous species. As deciduous trees grow dormant, evergreens take up the slack by producing more sugar to benefit their sleeping neighbors. It is through these back and forth conversations that they increase the resilience of the whole community—just as our families and communities do. In fact "loner" trees are typically not as healthy and long-lived as trees in a forest. "Mother trees" nurture their young, and they even have favorite offspring. They send excess carbon through the immense mycorrhizal network to the understory seedlings and the greater forest beyond. In her research Simard has found that the seedling recipients of a mother tree's largesse are four times more likely to survive.

Think about the resilience of a tree—or plant for that matter. They are sessile, meaning they can't pick up and move when a predator with a chain saw approaches or a storm wreaks havoc. The plant behaviorist Stefano Mancuso from the University of Florence in Italy says that our tendency to equate behavior with mobility keeps us from appreciating what plants can do. They can't run away and are often eaten, yet they can lose up to 90 percent of their bodies without dying. There is absolutely nothing like it in the animal world. It stands to reason that the forest community is rich and complex in ways most of us are not equipped to understand.

Whether you're inclined to anthropomorphize or not, the next time you take a walk in the woods, marvel at what you see—the tree canopy overhead and its magnificent branches, the glorious colors and texture of leaves and needles, the gnarled bark of trunks and limbs, the cool shade of the forest, and that unmistakable primeval scent where wood meets earth. But imagine, too, all that bustling activity happening underground. Think about the lessons we can learn from trees—about connection, cooperation, and community—if we slow down enough to take it all in.

Save the Redwoods... Save the Earth?

by Carolyn Bennett, GCA Vice Chairman

Conservation/NAL committees: Forests/Redwoods,

Hancock Park Garden Club, Zone XII

Coast redwood. Photo courtesy of Archangel Ancient Tree Archive

Three little words, "Save the Redwoods!" became a battle cry for conservation efforts a century ago. Due to over-lumbering, the two million acres once covered by coast redwoods (*Sequoia sempervirens*) on the northern California and southern Oregon coastlines had been reduced to five percent of their original habitat. This emergency spurred the creation of the Save the Redwoods League in 1918 and, ever since, fundraising to save the remaining groves.

Attaining heights equivalent to a 35-story building, and trunk diameters of 30 feet, coast redwoods can live more than 3,000 years. Old-growth redwood forests—those that have sustained little natural or man-made disturbance enabling them to retain ecological features specific to the species—store three times more carbon than non-redwood forests worldwide. Even after an old-growth redwood dies, it can take centuries to decompose and release its stored carbon. A recent study led by the League's Redwoods and Climate Change Initiative concluded that redwoods continue to produce wood as they age and that a greater proportion of that wood, compared to earlier growth, is converted into decay-resistant heartwood.

Given all this redwood-centered activity, it's understandable that scientists want to study these fire, drought, and disease-resistant trees to unlock their secrets. But it's a non-scientist—David Milarch, a nurseryman from Michigan—who has made it his mission to save them and, in the process, he hopes, us. In his words, "We need to reforest the planet; it's imperative. To do that, it just makes sense to use the largest, oldest, most iconic trees that ever lived."

For two decades Milarch has been cloning what he calls "champion" trees from around the country, and he's become particularly focused on redwoods and their cousins, the giant sequoias (*Sequoiadendron giganteum*), because their size adds enormously to their ability to sequester carbon. Milarch's volunteer arborists risk their lives climbing 20 to 30 stories up into redwood crowns to cut bud wood branches, which are then wrapped in newspaper, put in ice-filled duffels, and flown overnight to his lab in Michigan. There, shoots are cut off and planted in a peat and gel mixture. Milarch's cuttings have a 90 percent survival rate and are transplanted when they are two to three feet tall. The expected growth is to about 100 feet in approximately 20 years. Some find new homes overseas, but many are now returned to California and Oregon to expand their northern habitat—a process Milarch has termed "assisted migration." These clones could very well become one of our greatest natural defenses against increasing levels of atmospheric carbon and thus, climate change. By saving these trees now, they may help save us later!

David Milarch: New Life for Old Growth

David Milarch in his laboratory in Copenmish, Michigan, where he developed a micro-propagation system for replicating old growth genetics

David Milarch *received the GCA's Distinguished Service Award in 2004 for "his vision and untiring efforts in founding the Champion Tree Project to identify, preserve, and clone our ancestral trees." This award is not given every year; in fact, it is given only when someone truly deserves such recognition. Milarch received this award because of his extraordinary work to save our ancient trees and uncover the mysteries of their survival.*

When Milarch founded the Champion Tree Project in 1996, his goal was to identify the largest, oldest trees and to clone and propagate saplings from these "champion" survivors creating archival living libraries. Among the ancestral giants identified and cloned by Milarch are bristlecone pines, coast redwoods, giant sequoias, 176 species in Florida, and Maryland's Wye Oak (the largest white oak in the US until it was destroyed during a thunderstorm in 2002). He also has worked extensively at Mount Vernon cloning 13 trees planted by George Washington. Nine saplings of Milarch's national champions were planted at the Pentagon as a monument to the September 11th attacks. To date, Milarch has cloned hundreds of trees. But with 8,000 species worldwide on the endangered list he has no plans to pull back his efforts.

What exactly is cloning?

Cloning has been around since people first stuck a stem of coleus in a glass of water to root. It occurs when living tissue from an organism is taken—in trees, that can be a clipping from a branch—and, under very controlled conditions, grown into an exact replica of that organism.

And how is that different from a tree that grows when pollinated seeds are dropped into soil?

What you get in that case is not an exact replica, just as you are not an exact replica of your parents. Only half the DNA of a plant grown from seed matches the female ancestor's; the other half is usually unknown, the result, for example, of wind or insect pollination.

At Milarch's facility in Michigan thousands of clones are nurtured into saplings. All photos courtesy of Archangel Ancient Tree Archive

Due to unchecked lumbering the vast forests of champion trees were decimated by the early 20th century

What made the idea of cloning our most exceptional trees catch fire in you?

Well, the problem seemed clear to me: 98 percent of old-growth trees in the US have disappeared, most of them cut down with no real forethought beyond financial gain. My great-grandfather told stories about seeing forests of white pine clear-cut all over northern Michigan. In just a few years entire virgin tracts vanished. In the late 1960s I saw firsthand what had happened to the coast redwood in California. As the science on climate change accumulated, I realized that we had to access and clone the best specimens. And then *let them live*—instead of butchering them. A single mature giant sequoia weighs 2,000 tons, and 40 percent of that dry weight, or 800 tons, is stored carbon! That is our mission. This is why my wife, a college

Coast redwoods are the most iconic tree on earth, engendering a sense of awe and reverence

Coast redwood

teacher, has been willing to support our family for years while my sons and I climbed trees! So far we have cloned 70 of the largest coast redwoods and six giant sequoias. Among the sequoias is a seedling that John Muir himself dug up in the Sierra Nevadas and planted on his fruit farm in the Bay Area. Three years ago I got a call asking for help because the tree was dying. I'm happy to say that we have three surviving clones of that tree.

How have you been able to locate and then work on champions?

Well, having access to trees on public land is difficult. It literally took an act of Congress for us to be able to clone the 5,000-year-old Methuselah bristlecone pine, and I have US Senators Levin, now retired, and Stabenow to thank for that. So we went to private property owners in the coast redwood's natural range—a 500-mile stretch from southern Oregon to Big Sur. We broke that down into 100-mile corridors, and from each we took 20-30 samples. We're halfway through that project, and when it's finished we'll have compiled the most complete living library of arboreal genetic material in history. There's little or no funding now for genetic sequencing, but when there is, we'll have provided the archive.

Giant sequoia

As you and your sons have scouted trees for cloning purposes, has anything taken you entirely by surprise?

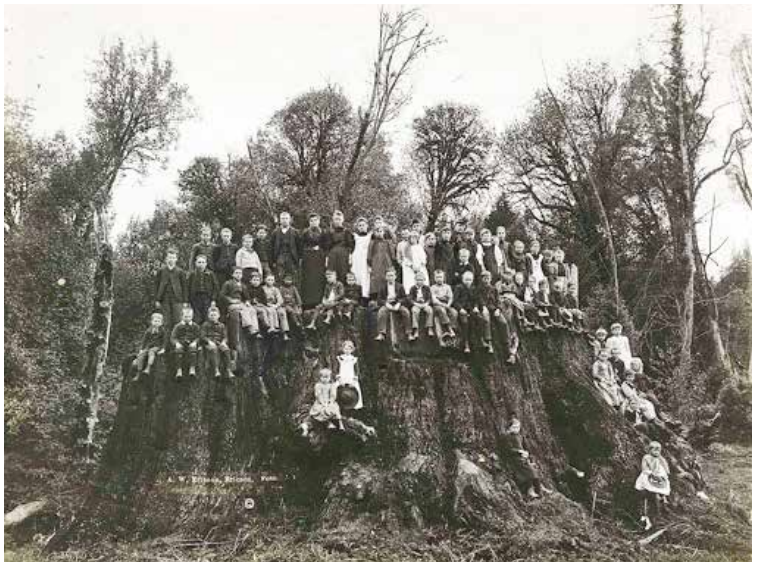
The most exciting discovery came in 2010, when my son Jake found a "lost grove" of coast redwood stumps in Northern California. Coast redwoods were considered the tallest trees on earth, while giant sequoias had the biggest trunk diameters. What we found were exceptionally tall (400-foot) coast redwoods with diameters eight feet greater than the largest giant sequoias!

You must have been stunned!

I almost fainted. Jake said, "Dad, let's bring these back to life." And I said, "I don't know if we're that good." But Jake took 20-foot suckers—they snap off at 50 feet anyway, because they have no anchoring roots—and we have cloned four or five, all with 30-foot trunk diameters.

On your way to restoring the world's most efficient natural filters of air and water, you've probably come across some harrowing stories, too.

The Fieldbrook stump, near Eureka, California, is a classic story of mindlessness. The original tree was cut down in 1870 to satisfy a bar bet between an American financier and an English nobleman. The Englishman won, and his prize was a horizontal slab of California's iconic redwood. It was a brutal, insane act. The slab is still on display, as a cautionary symbol now, in a London suburb. Jake was allowed to take cuttings from the still-living parts of the stump. Our clones are giving that tree another 3,500 years or more of life.



The Fieldbrook tree cut in a bar bet in 1870 and cloned by Milarch over 140 years later

Jake Milarch cuts specimens from high in the canopy that are brought back to the Archangel Ancient Tree Archive laboratory.

Tell us about the Archangel Ancient Tree Archive or AATA. How do you finance such endeavors?

Our organization, the Archangel Ancient Tree Archive, which we created in 1996, is a nonprofit. Financing is always a challenge. Each cloned tree requires a $10,000-$25,000 expenditure for travel, wages for expert climbers, insurance, and such. Land, too, is required to grow our new forests. There's more interest overseas, and we're partnering with the Eden Project in Cornwall, England, for example, to further this form of propagation on six continents. Right now we're finishing a Mt. Rushmore project.

As I look back, I would say that really important breakthroughs for us came when Jim Robbins first wrote in the *New York Times* "Science Times" a full page on the AATA in 2001; then I was invited to speak before 250 NASA scientists who wanted the lowdown, instead of the runaround, on climate change; and in 2004 the GCA honored my work with its Distinguished Service Award in Washington, DC. It was an incredible honor to receive. I'll never forget it. GCA ladies are their own forces of nature. Receiving that award was another first for me: the first time I'd worn a tuxedo.

—Lorraine Alexander, Millbrook Garden Club, Zone III

CAMELLIAS

BY BARBARA TUFFLi,
Horticulture Committee Chairman
Woodside-Atherton Garden Club,
Zone XII

When one thinks of camellias, *Camellia japonica* most often comes to mind—those iconic evergreen shrubs with glossy, dark foliage and blooms that brighten the gray days of late winter and early spring. The genus *Camellia*, while native to Southeast Asia, thrives in temperate parts of the United States along the West, Gulf, and East coasts. In recent decades, cold-hardy camellias have extended that range into the Northeast, with notable collections at the US National Arboretum (USNA), Longwood Gardens, and the Polly Hill Arboretum on Martha's Vineyard. Along with *Franklinia, Gordonia*, and *Stewartia,* the genus *Camellia* is a member of the small plant family, Theaceae. With over 270 species and 32,000 named varieties, the camellia story is truly extensive. While most are used as ornamental shrubs and trees, several camellias have commercial value as well.

The history of camellias goes back almost 5,000 years—to 2737 BC. According to Chinese legend as recorded in *Tea Classic*, an eighth-century monograph—the first ever on tea—Emperor Shen Nugn accidentally discovered that the leaves dropping from a tree into his kettle of boiling water produced a flavorful, aromatic beverage—*cha*. Early tea was used medicinally, but over time it became a highly sought-after beverage of choice. The black, oolong, and green teas we drink today are made from the leaf bud and the first two tender leaves of the tea plant, *Camellia sinensis*. There are a number of different varieties of *Camellia sinensis* and a number of different processes used to dry and ferment the tea.

Camellia oleifera, another species, is commercially important for the oil which is extracted from its seeds and used in beauty products, as well as in cooking where it is valued for its high flashpoint. This species is also known for its ability to withstand cold temperatures; as a result, it was used by geneticist Dr. William L. Ackerman at the USNA in his efforts to hybridize for cold hardiness in camellias.

Top: *Camellia sasanqua* 'Apple Blossom' (single flower form)
Bottom: *Camellia japonica* 'Nuccio's Carousel' (semi-double flower form)
Previous page: Camellia branches triptych. All photos by Barbara Tuffli

When Barry Yinger, one of America's most respected plant hunters, visited Korea, he heard that specimens of *Camellia japonica* were growing in incredibly cold weather, directly in the path of the Siberian Express. With much difficulty, Yinger visited the islands, which were located in the Yellow Sea off the North Korean coast; he found camellias growing there on open hillsides with no protection. He managed to collect seeds and cuttings, which he shared with Dr. Clifford Parks at the University of North Carolina and the USNA's Dr. Ackerman. He also trialed the germplasm on his Pennsylvania farm in Zone 6A, where in one winter temperatures went down to -28°F. In 2008, when he spoke at the Cold Hardy Camellia Symposium at Longwood Gardens, he reported that plants from this collection were well established in cultivation. His introductions with "Korea" in the name—*Camellia japonica* 'Korean Fire', for example—are among the most cold-hardy camellias available. *Camellia* x 'Survivor', a Camellia Forest Nursery introduction, is another extremely cold-hardy hybrid that survived -9°F. (*C. sasanqua* 'Narumi-gata' x *C. oleifera*).

Thanks to the work of plant explorers, researchers, and hybridizers, the geographic range of the camellia has been greatly extended, especially in protected microclimates. Exploration in Southeast Asia for new species continues to this day with yellows still being found in the more tropical climates of Vietnam. *Camellia azalea,* a remarkable, repeat, summer-blooming species was discovered in 1984 in the southwest province of Guangdong in China. These climate range extensions as well as new camellia discoveries have significantly broadened the availability of plant material that is commercially available. Whether as art, as tea, or as collections in our gardens, we all have the opportunity to enjoy these remarkable plants.

CAMELLIA SPECIES–A SAMPLING

Only a fraction of *Camellia* species are grown in the United States. The most commonly available are:

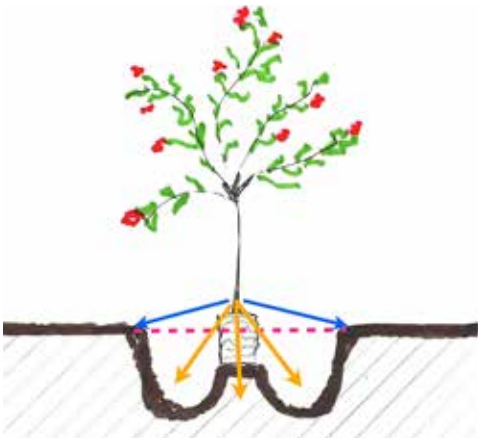
- *Camellia japonica:* a broad-leaved evergreen shrub with glossy foliage and beautiful blooms
- *Camellia reticulata:* not as hardy as *C. japonica* but with time, this species grows into a small tree; blooms can measure seven inches or more
- *Camellia sasanqua:* a fall blooming Japanese species with smaller and more sun-tolerant foliage; sometimes fragrant, this species can, in certain climates, be grown in full sun
- *Camellia oleifera:* commercially grown for high-quality oil extracted from its seeds
- *Camellia sinensis:* the tea plant, although grown commercially for tea, can also be used as an attractive fall-blooming ornamental shrub

Top: *Camellia sinensis* (single flower form) is used in tea-making

Bottom: One of Barry Yinger's discoveries, *Camellia japonica* 'Korean Fire' (single flower form), is an exceptionally cold hardy camellia

Top: *Camellia* 'California Sunrise' (semi-double flower form)

Bottom: *Camellia japonica* 'Desire' (formal double form)



Best planting practices for camellias include achieving just the right depth and plenty of width. Illustration by Barbara Tuffli

PLANTING PRIMER

Observing a plant in its native habitat tells us much of what we need to know about how to grow it successfully. In Southeast Asia, where camellias are native, they are found growing on the edges of forests in filtered light and on steep slopes. Steep slopes provide excellent drainage, which the plants need, while the forest humus that naturally occurs from fallen leaves provides the acidic soil (a pH of 5 to 6.5), rich in organic matter, which the plants need to thrive.

Planting depth is very important for camellias. Planting them a bit too high is rarely a concern as one can always add an acidic mulch to cover any exposed roots. However, planting them too deep, even by a few inches, can be fatal. The most common error is to plant them at grade where they then sink under their own weight into the prepared planting hole. In this instance, they will fail to thrive over time.

To ensure peak performance, consider these other planting tips:

- Plant in a sheltered location in filtered light under any trees and away from hot sun
- Acidic soil is best (pH 5-6.5)
- Amend soil with leaf mold and organic material; ensure soil drains well
- Mulch, but don't bury the crown
- Remember: healthy plants are relatively disease-free
- Organic fertilizers are preferred
- Prune in the spring right after flowering and before new growth emerges; remove dead wood; thin and shape.

Top: *Camellia* 'Captured Enriches' (hybrid, single flower form)

Middle: *Camellia crapnelliana* (single flower form)

Bottom: *Camellia reticulata* 'Cornelian' (hybrid, peony flower form)

Top: *Camellia yushsinensis* (single flower form)

Middle: *Camellia amplexicaulis* (single flower form)

Bottom: *Camellia japonica* 'Unforgettable' (anemone flower form)

Top: *Camellia nitidissima* (single flower form)

Middle: *Camellia japonica* 'Shirley Meneice' (semi-double flower form)

Bottom: *Camellia japonica* 'Kewpie Doll' (anemone formal flower form)

Our GCA History

- In 1921 the GCA joined forces with various horticultural societies to challenge Quarantine Order 37 that threatened biodiversity nationwide. After successful testimony, including from GCA club members, more reasonable plant quarantine laws were enacted.
- Also in the 1920s, the GCA became involved in opposition to billboards on federal highways. Nearly one hundred years later, this challenge continues. In 2015 the GCA submitted an *amicus curie* brief to the US Supreme Court on the newest billboard issue: digital billboards. Last year, in November 2016, GCA First Vice President Dede Petri testified in opposition to the construction of multiple digital billboards in our nation's capital.
- In support of our national parks, with whom the GCA has a long history, NAL launched a campaign aimed at educating our membership and elected officials about the challenges the parks face, including an $11.5 billion deferred infrastructure maintenance backlog. The GCA fiercely advocated in favor of H.R. 4680—the National Park Service Centennial Act—which was passed in 2016.
- NAL continues to work in collaboration with the Chicago Botanic Garden on proposed legislation that fosters botanical research and protects endangered botanical species, promotes indigenous species, and helps identify and eliminate invasive plants. Through meetings with elected representatives, the GCA has secured bipartisan commitment to sponsor the proposed legislation in Congress. On February 14, 2017, US Representatives Mike Quigley, (D-IL, 5th District) and Ileana Ros-Lehtinen (R-FL, 27th District) proposed the legislation in Congress, now known as H.R. 1054.

* * *

These achievements are significant, but they also illustrate that sometimes progress takes time. It is often only through steadfast commitment and perseverance that change can be realized. As an organization, the GCA has been consistent in its support of conservation and the environment through successive generations, and thus it has remained relevant. Its strong and measured voice continues to be clearly heard on both sides of the aisle.

Why NAL Matters: Knowledge is Power

What, exactly, is NAL—the GCA's National Affairs & Legislation Committee—and why does it matter? On the heels of NAL's annual conference, which took place earlier this year in Washington, DC, demystifying this committee seems like an especially timely and important topic.

In addition to stimulating "the knowledge and love of gardening," a primary component of the GCA's purpose is "to restore, improve, and protect the quality of the environment through educational programs and actions in the fields of conservation and civic improvement." The NAL and Conservation committees work in tandem to fulfill that purpose. It is NAL, however, that is charged with keeping the GCA and its 200 member clubs current on federal policies that relate to the GCA's mission and purpose. NAL better equips all of us—the nearly 18,000 GCA club members—to make a difference in our communities.

How is this done? The key is in the GCA's eight Position Papers: Clean Air; Clean Water; Climate Change; National Parks; National Public Lands; Native Plants; Sustainable Agriculture, Seed Diversity & Food Security; and Transportation. These papers are initially drafted by the NAL and Conservation committees for approval and ratification by the GCA's Executive Board. The papers contain analyses of the current issues that have been identified as the GCA's top priorities. They also are neatly summarized for faster reading.

The Jefferson Memorial. Photo by Stacey De Luca

Previous Page: Photo by Molly Jones

It is NAL's job to track federal actions and legislation that impact the critical issues as outlined in the eight Position Papers, and to advocate in support of those positions through education as well as direct action in supporting legislation. The GCA, through its executive officers and club members, has testified before Congress, met with countless senators and House members about specific issues, and sent numerous letters of support to presidents and administrative agency officials.

In addition to NAL's support and advocacy, NAL's annual conference, held every year in Washington, DC, is another important component of this hardworking committee. The conference emphasizes education, which, again, speaks to one of the fundamental messages of the GCA's purpose. The annual conference guarantees a non-stop, information-packed four days and includes lectures by experts in the fields related to the Position Papers, pending legislation, presentations from both sides of the aisle, and GCA delegate-constituent meetings with members of Congress.

How best to bring that incredible, energizing, adrenalin-inducing experience back to the club level is NAL's challenge. NAL's charge at the conference is to communicate effectively with the many delegates who are in attendance—some 300 delegates from 200 clubs descend on Washington for any given NAL conference—so that they may bring back

NAL Committee Chairman Linda Fraser. Photo by Molly Jones

understandable, cogent, and actionable messages to share with their clubs.

Why does NAL matter? Each conservation issue that the GCA tackles is an issue that affects us as citizens—as members of our local communities and as individuals. While every GCA club is autonomous and determines its own level of interest in, and commitment to, any given issue, each club has resources for information through their club NAL and Conservation committees as well as their GCA zone representatives who are the linchpins in the information chain: they educate club leaders and members, they help clubs build support and enthusiasm, and they follow federal action—including pending legislation with regard to the issues and initiatives important to the GCA. So, fundamentally, the answer is that NAL matters because the conservation issues that affect us most require information-gathering—and information flow. Through education, research, meetings, conferences, and empowering club members, NAL believes "knowledge is power."

—Linda Fraser, GCA National Affairs & Legislation Committee Chairman, Southampton Garden Club, Zone III

The NAL Conference

February 27–March 2, 2017

The interconnection of the National Affairs & Legislation (NAL) and Conservation committees was manifest at the annual 2017 NAL conference. Registration this year was full by early December with over 300 club delegates from across the country convening in Washington, DC.

At last year's conference our environment's future looked rosy: the Paris Climate Agreement was signed, the Clean Power Plan created, and the Land and Water Conservation Fund (LWCF) was renewed and funded. November's election brought a new agenda and new environmental challenges, which NAL speakers addressed with clarity and measured optimism.

From nonprofit directors, government officials, a PhD candidate, GCA experts, a high school conservationist, to members of Congress—from both sides of the aisle—speakers shared their vast knowledge and expertise with GCA delegates, including:

- Will Baker, President/CEO, Chesapeake Bay Foundation, reviewed the significant threats posed to this vitally important watershed
- Terri Hogan and Lori Makarick from the National Park Service discussed landscape restoration, volunteerism, and the challenges of exotic plant management
- Tim Profeta, Director, Nicholas Institute at Duke University, examined the nexus between national policy and science
- Theresa Pierno, President/CEO, National Parks Conservation Association, underscored climate change and underfunding risks to our parks
- Deb Atwood, President, Meridian Institute's AGree Project, explained how climate change threatens our sustainable food supply
- Mary Tracy, President, Scenic America, discussed the importance of protecting America's roadways, countryside, and communities
- Ben Grumbles, Maryland's Secretary of the Environment, shared Maryland's current priorities, including the Chesapeake Bay, climate change, resource recovery, and healthy soils
- Sandra Whitehouse, University of Rhode Island oceanographer and senior policy advisor to the Ocean Conservancy, called for federal ocean protection to address traffic, plastic, and climate change
- Emily Stevenson Oldfield, PhD candidate at Yale's School of Forestry, discussed agriculture and soil
- Conservationist Brigitte Harbers talked about her role with the critically endangered Maui dolphins
- Lesley Kane Szynal, Director, Outdoors America, Open Space Institute, updated us on the LWCF

Ten members of Congress outlined their environmental legislative agenda each emphasizing the need to work together on environmental legislation: Congressman Ryan Costello (R-PA) described clean water and waste removal as crucial to our economy and quality of life; Congressman Lee Zeldin (R-NY) called safeguarding the environment as one of his top priorities; Congresswoman Carolyn Maloney (D-NY) applauded the advocacy history of GCA women; Congressman French Hill (R-AR) discussed economic impacts and the power of the GCA; Senator Maggie Hassan (D-NH) promised to bring her proactive state environmental experience to DC; Congressman Earl Blumenauer (D-OR) challenged us to lead by example, distributing his energy-sensitive transportation pins and peddling away on his bicycle; Congressman Garrett Graves (R-LA) translated lessons learned from Hurricane Katrina to the nation; Senator Sheldon Whitehouse (D-RI) discussed clean energy solutions; and Congressman Mike Quigley (D-IL) took action—he introduced H.R. 1054 in Congress, the Botanical Research Act drafted by the GCA and the Chicago Botanic Garden.

Thursday's environmental advocacy meetings with legislators saw 300 very well-prepared and committed delegates charge the Hill with knowledge and grace. Thanks to the GCA's culture of bipartisanship and collaboration, meetings were productive, positive, and successful.

2017 NAL Presenters

Day 1: "New Delegates Briefing Session"

Linda Fraser, NAL Committee Chairman, Southampton GC, Zone III

Missy Jensen, Conservation Committee Chairman, Carmel-by-the-Sea GC, Zone XII

Hollidae Morrison, NAL/Conservation Committee Zone Rep, The Garden Club of Jackson, Zone IX

Rich Innes, Meridian Institute, NAL's Washington Consultant

Adena Liebam, Legislative Assistant to Senator Sheldon Whitehouse (D-RI)

Morgan Cashwell, Legislative Assistant to Senator Angus King (I-ME)

Tour of the Rare Orchids Collection and Smithsonian's Archives of American Gardens Presentation

Opening Day Cocktail Reception

DAY 2: "Meetings with Experts"

Katy Kinsolving, NAL/Conservation Committee Zone Rep, Stony Brook GC, Zone IV, and **Kathleen Biggins**, The Garden Club of Princeton, Zone IV, "The C-Change Conversation Project"

Legislative Update Panel Discussion with **Rich Innes**, **Suzanne Booker-Canfield**, NAL Committee Vice Chairman-Legislation & Policy, Garden Guild of Winnetka, Zone IX; **Mary Kelberg**, NAL Committee Vice Chairman Assistant-Legislation & Policy, Westhampton GC, Zone III

Janet Manning, Conservation Committee Vice Chairman-P4P, GC of Denver, Zone XII, "Partners for Plants"

William Baker, President/CEO, Chesapeake Bay Foundation, "Clean Water"

Terri Hogan and **Lori Makarick**, National Parks Service, "NPS and the GCA"

Tim Profeta, Director, Nicholas Institute, Duke University, "Climate Change—Nexus between Policy and Science"

Theresa Pierno, President/CEO, National Parks Conservation Association, "National Parks and Climate Change"

Deb Atwood, Executive Director, Meridian Institute AGree Project, "Food and Agriculture Policy and Impact of the Farm Bill"

Mary Tracy, President, Scenic America, "Digital Billboards—Must We Accept this Visual Blight?"

Ben Grumbles, Secretary, Maryland Department of Environmental Protection, "Waste Management: Resource Conservation and Recovery Act"

Sandra Whitehouse, University of Rhode Island, Senior Policy Advisor for Ocean Conservancy, "Clean Water and Oceans"

Emily Stevenson Oldfield, Scholar, Yale School of Forestry and Environmental Studies, "Soil, Agriculture, Food Supply, and the Impact of Climate Change"

Brigitte Harbers, Save the Maui Dophins Project, "The Future: Who Will Safeguard Our Planet's Environment?"

Zone Dinners for Delegates

DAY 3: "Meetings on the Hill"

Congressman Mike Quigley (D-IL, 5th District)

Elizabeth Waddill, NAL/Conservation Committee Vice Chairman-National Parks, Magnolia GC, Zone IX, "Don't Throw Away Your Shot for National Parks!"

Congressman Ryan Costello (R-PA, 6th District)

Lesley Kane Szynal, Director of Outdoors America, Open Space Institute, "LWCF's Status"

Ellen Conrad, NAL/Conservation Committee Vice Chairman-Climate Change, Bedford GC, Zone III, "Power to the People—Renewable Energy and Climate Change"

Karen Ertl, NAL/Conservation Committee, Zone Rep, Philipstown GC, Zone III, "Delegates Post-NAL Meeting Power Point Presentation"

Congressman Lee Zeldin (R-NY, 1st District)

Congresswoman Carolyn Maloney (D-NY, 12th District)

Congressman French Hill (R-AR, 2nd District)

Senator Maggie Hassan (D-NH)

Congressman Earl Blumenauer (D-OR, 3rd District)

Congressman Garrett Graves (R-LA, 6th District)

Senator Sheldon Whitehouse (D-RI)

Dinner at the Cosmos Club with Keynote Speaker Louie Schwartzberg, Film Director, Producer, and Cinematographer

Day 4: "GCA in Action"

Meetings on the Hill with Delegates' Senators and House Members

Photos by Linder Suthers and Molly Jones

Deb Atwood

Senator Sheldon Whitehouse

Congressman Earl Blumenauer

William Baker

Tim Profeta

Congressman Garrett Graves

Senator Maggie Hassan

Missy Jensen

C-CHANGE: Climate Change 101

The GCA's annual NAL conference in Washington, DC, is thought-provoking, eye-opening, and often game-changing. This last was the case in 2014, when two members of the Garden Club of Princeton and two from Stony Brook Garden Club, both in Zone IV, attended the conference. They went home with a commitment to educating their communities about climate change. What started as a straightforward interest quickly turned into a passion. Kathleen Biggins, Pam Mount, Carrie Dyckman, and Katy Kinsolving started C-Change Conversations, a volunteer-led group that has developed two programs: one to promote nonpartisan dialogue and the other to provide educational tools for learning about climate change and its effect on our environment.

A dictionary definition for climate change is a change in global or regional climate patterns—in particular a change apparent from the mid- to late-20th century onward and attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels. Scientists believe that we humans are speeding up the historically slow process of change with the burning of such fossil fuels as oil and natural gas, resulting in increased levels of carbon dioxide and methane being trapped in the atmosphere—hence the term greenhouse gas (GHG).

There is much that can be done to lessen GHGs and their effects. Education is a tremendous tool but, as Kathleen, Pam, Carrie, and Katy found out, climate change is a topic that can be quite controversial. So they, now joined by Sophie Glovier (The Garden Club of Princeton) and Harriette Brainard, developed a plan to learn what people wanted to know about climate change. They found that if presented in a "nonpartisan credible way and wrapped together with a social situation" the dialogue flowed freely. C-Change Conversations was the result, and their volunteer organization offers two programs: Climate Change 101 and Conversations.

C-Change 101, a primer, was developed by Kathleen Biggins in conjunction with Climate Central, an independent nonprofit composed of scientists and science journalists who investigate and report on climate change and energy issues. Small groups of GCA clubs and other local organizations have been invited to hear presentations on the "scientific understanding of climate change." At this year's NAL conference in DC, Kathleen presented C-Change 101 to the 300 delegates. "She distilled dense, scientific, often hard-to-understand information into a very compelling presentation," observed one delegate.

Eight C-Change Conversations have been held in the past two years, with more planned. These sessions feature experts who discuss climate change "as it relates to energy, national security, meteorology, sea-level rise, and business risk assessment and opportunities." Each meeting is followed by a Q&A period and a social hour. Extremely engaging and informative, this series has attracted more than a hundred people per session.

Networking, brainstorming, and contact-sharing have brought many interesting people into the mix as speakers and advocates at C-Change programs. The hope of the six forward-thinking organizers is that other garden clubs across the country will follow their lead.

—Julie Badger, Sand Hills Garden Club, Zone VIII

I see climate change as a scientific and human issue, not an environmental or political one. We need to be clear-eyed in understanding the risks and assessing the costs of action versus inaction. To do that, we need to understand the complexity of the issue. Only then can we build the consensus to address it.

—Kathleen Biggins

Kathleen Biggins presenting the C-Change primer. Photo by Linder Suthers

The C-Change Conversations team at NAL (L to R): Katy Kinsolving, Pam Mount, Kathleen Biggins, Carrie Dyckman, and Sophie Glovier. Photo by Linda Suthers

Brigitte Harbers: The Power of One

Brigitte Harbers's bio reads like any uber-successful professional's. Poet, feminist, journalist, certified ski instructor, and accomplished equestrian, she is fluent in Spanish and teaches programming to middle school students. The only difference is that Brigitte is just 17.

Poised, articulate, and deeply impassioned, Brigitte delivered what was one of NAL's most compelling presentations. On the heels of scientists, nonprofit leaders, government officials, legislative aides, and seasoned GCA experts, Brigitte held her own—and then some—inspiring the crowd of 300 delegates.

She spoke about her conservation work with the Maui dolphins, the world's smallest and most rare dolphin species, which are critically endangered. Found only off the west coast of the north island of New Zealand, humans are the Maui's biggest threat. This diminutive subspecies of Hector's dolphin prefers shallow waters, so gillnetting, trawling, and recreational boaters pose grave dangers for these sea creatures. The Maui population is in peril. "In 1971, there were 1200 Maui," a composed Brigitte told the rapt audience. "In 1990 that number was 136. And in 2010, just 55 Mauis were in existence."

The heart of Brigitte's story was a deeply personal one. Her father—a fierce environmentalist and champion of conservation, who instilled in his children a deep respect for the natural world—had a profound influence on his only daughter. She says that his driving philosophy—that one person can make a difference—was a message that resonated with her at a young age. They were a globe-trotting family; she happily recalled vacationing in the rainforest in Surinam, a South American country particularly special to her father. "But then the unthinkable happened," Brigitte told the NAL audience. "My father was killed in a plane crash. I was just seven years old."

Brigitte says she lost her way. Her young life had been turned upside down, and without her father's presence she struggled. "And then my mother met Chris." Her future stepfather picked up the reins and helped guide her. "We went to New Zealand and that's where I met the Maui."

The plight of the Maui struck a profound chord, and Brigitte found renewed meaning to her life. "I discovered a way to honor my father and to remember the lessons he taught me about the natural world, conservation, and the environment." She began working with conservationists and returned to New Zealand for internships with renowned scientists to count and track individual Maui, who are distinguished by unique markings on their dorsal fins. Cautiously optimistic, she reports that Maui numbers in 2016 were up to 63. This small victory is, in part, due to her work.

Brigitte's message, which resonated with the NAL audience, was a call to action: "We love our planet," she said, "but I honestly think we can do more. We have one life. It's really important that we take the time we have and put it to good use. If you want to have an impact, if you want to make a difference, do something. I'm 17. If I can do it, anybody can."

—Madeline Mayhood, James River Garden Club, Zone VII

Top: Brigitte Harbers at the 2017 NAL conference. Photo by Linder Suthers

Middle: Maui dophins are found only off the west coast of New Zealand's north island. Photo by Renee Harbers

Bottom: Brigitte Harbers on the lookout for Mauis in February 2017. She has interned with renowned marine scientists from the University of Auckland and Oregon State University. Photo by Renee Harbers

Louie Schwartzberg's film credits include *Crash*, *American Beauty*, *The Bourne Ultimatum*, and *Erin Brockovich*. He is a member of both the Director's Guild of America and the Academy of Motion Picture Arts and Sciences. Photos courtesy of Louie Schwartzberg

Louie Schwartzberg

A pioneering, award-winning cinematographer, director, and producer, Louie Schwartzberg, was the keynote speaker at NAL's March 2017 dinner at the venerable Cosmos Club in Washington, DC.

Using his special, groundbreaking brand of cinematography, Schwartzberg explores the connections between humans with nature and the environment. "I try to capture magical moments in nature and make the invisible visible by using time-lapse, slow motion cinematography," he explains. "This allows me to take people on journeys through time and scale, which is a transformational experience."

NAL Chairman Linda Fraser says, "His films—and the messages behind them—are timely, deeply moving, and profoundly beautiful. They speak to an audience about the natural world—its infinite beauty, its gifts, its threats. And what better audience than those attending the NAL conference in Washington."

The Bulletin *recently spoke with Louie Schwartzberg.*

You're a native New Yorker. Tell us about your background and your family.

I was born in Brooklyn, New York, and my parents were Holocaust survivors. For them, having a roof over their heads, food on the table, a steady job, and the miracle of having children was heaven on earth. Although they didn't take me on field trips or vacations to experience nature, I did learn a lot about gratitude. My mother had a ton of energy, and she worked as a chef at a senior living home. But she still had enough energy and joy to take care of my dad, my sister, and me. My father worked as a tool and die maker in the aerospace industry, so I learned technical skills, precision, and perfection from his DNA.

I went to UCLA, where I picked up photography to document the antiwar protests. I graduated with an MFA in theatre arts and discovered my voice. I fell in love with photography and filmmaking and met my greatest teacher, Mother Nature. She taught me everything about lighting, composition, texture, and movement and how to connect these elements with the deepest part of my soul.

Your body of work includes blockbuster films but also ones that explore the profound beauty in nature. Do you consider yourself an artist or a filmmaker? And which of your projects have had the most impact?

I consider myself to be both an artist and a filmmaker. You certainly need to learn the tools and technology to share your vision in the most universal medium we have today. What you have to communicate, your voice, your missions, your unique worldview are what makes you an artist.

I've spent my life capturing beautiful images. And whether in wilderness or in the downtown of a giant city, I find connections, universal rhythms, patterns and beauty that I recognize as part of me, a part of all of us that celebrate life. It's my pleasure to share the energy that inspires me—this great, visual beauty of our world.

My projects that probably have had the most impact are *Wings of Life*, *Mysteries of the Unseen Worlds*, and my Moving Art series.

What motivates you?

Capturing nature's wisdom and beauty motivates me. I love to chase light and figure out how to do that in the most engaging, immersive way possible to share that energy and wisdom and beauty with a larger audience. One of my most unique projects is that I've had cameras filming time-lapse flowers, nonstop, 24-hours a day, seven days a week for 40 years, squeezing all that time in to 16 hours of film.

Louie's latest film, *Fantastic Fungi*, looks into the role underground mycelium plays in solving some of the biggest challenges on our planet

I heard you quoted as saying, "If you love something enough, you'll protect it." Do you feel your film productions have accomplished this?

We are hardwired to protect what we love, and I do believe my films accomplish this by creating an emotional connection to the heart. Intellectual arguments about sustainability don't have a lasting impact, and with some people, can become confrontational to their core values. We can all agree on wanting to have a sustainable planet for our children and future generations.

I hope my films inspire and open people's hearts. Beauty is nature's tool for survival—you protect what you love. If I can move enough people on an emotional level, I hope we can achieve the shift in consciousness that we need to sustain and celebrate life.

—Pamela Hirsch, Garden Club of Morristown, Zone IV

Partners for

The Garden Club of America's Conservation and Horticulture committees celebrate a quarter century of combined efforts reaching into communities nationwide.

With hands in the soil and faces toward the sun, gardeners study the beauty of nature and the importance of biodiversity. A garden is manipulated space in the midst of a natural world that supports all life on earth. The heavy footprints of humanity have trampled many native habitats, but GCA clubs took careful note and have a long history of dedication to preserving our natural heritage.

In the late 1980s GCA club members Sadie Gwin Blackburn, Joan Shorey, and later Nancy Thomas and Marilyn Magid, testified before Congressional subcommittees, bringing attention to the lack of botanists employed to study threatened plants on federal lands. At the 1991 NAL meeting Phoebe Driscoll, Ellen McMahon, Joan Shorey, and the GCA's Capitol Hill consultant discussed the critical issue of endangered plants. Their idea was to encourage clubs at the grassroots level to work with managers of national parks and other federal lands to monitor endangered and rare plants.

Joan Shorey invited Liz Warrick to be the first Partners for Plants chair. Fran Wolfe and Shirley Meneice suggested having a P4P representative on both the Conservation and Horticulture committees, and they became the next P4P vice chairmen. Fran remembers that the earliest handwritten notes about possible projects were carried in a duffel bag—appropriate for work that often involved trekking into wilderness!

When asked how those early endeavors came to be, Liz answered that she just called up her friends—and the seeds of P4P were planted. There were six project locales from three zones

Plants 25th Anniversary

chosen in 1992: Acadia National Park in Maine, Zone I; Tombigbee National Forest in Mississippi, Zone IX; Gifford Pinchot National Forest in Washington State, Zone XII; and Eldorado National Forest, Lake Tahoe Basin, and Six Rivers National Forest in California, also Zone XII.

The name Partners for Plants has always put the emphasis squarely on the importance of partnerships, as knowledgeable and hardworking GCA club members collaborated with botanists and advisors at land and government agencies, such as the US departments of Agriculture and the Interior as well as community volunteers. For example, in 2000, P4P was asked by the Medicinal Plant Working Group of the Plant Conservation Alliance to join in the study of native medicinal species at risk in the wild. As of 2011, P4P was still working on this project with a consortium of ten federal agencies and nearly 290 non-federal organizations.

The GCA has made funding P4P a priority, and gifts from its clubs and individual club members have been used to compensate botanists for their expertise as they guide our work. This fulfills one of the goals of the original P4P planners: support for scientists studying native plants.

P4P's reach has expanded from the first six projects undertaken in 1992. Today there are 50 projects, spread across all 12 zones, with five projects added in 2017—totalling an impressive 470 projects in our 25 years.

Why is involvement increasing? For Liz Warrick, who was the first P4P chair and recently proposed a P4P project in Zone XII with her Santa Fe Garden Club to remove invasive cheatgrass (*Bromus tectorum*) at the Valles Caldera National Preserve in Jemez Springs, New Mexico, the answer is straightforward. "The deteriorating state of the world's environment along with the alarming extinction of plant and animal species threatens to erase the biological diversity on which the planet's future depends," says Liz. "Everyone who participates agrees enthusiastically that the work of P4P provides a wonderful stewardship opportunity."

Liz is among many GCA club members who "walk the P4P talk." Those early P4P seeds have sprouted, bloomed, and reseeded across the country.

—Sharon Blackburn, GCA Horitculture Committee Vice Chairman–Partners for Plants, Loveland Garden Club, Zone IX

P4P Highlights, 1992-2017

Every project is managed from start to finish by a GCA club, and each one has an impact. Every sweat-soaked volunteer makes a difference.

- In 1992 the first and still longest-running project began with the Piscataqua Garden Club, Zone I, in Maine, and is guided today by the Garden Club of Mount Desert Island, with help from a National Park Service botanist. Native flora is now returning as a result of the removal of aggressive, non-native plant species.
- Broadmoor Garden Club, Zone XII, is currently working with the Garden Club of Denver in Rocky Mountain National Park on a continuation of the moonwart project (*Botrychium*) on Pikes Peak, which began in the 1990s. A Forest Service botanist commented that this constitutes the longest sustained monitoring of a plant in the Pike National Forest.
- In Zone X, Akron Garden Club's 2003-2009 project to remove invasive plants in the Cuyahoga Valley National Park moved into its next (2009-2013) phase with the planting across 40 parkland acres of 13,000 specimens from the park's Native Plant Nursery.
- In 2015 the Garden Club of Nashville, Zone VII, started its Weed Wrangle project to remove invasive plants from local parks. Members developed a template for community involvement and trademarked it. (Other GCA clubs are welcome to use it.) Spreading as fast as the invasives they are fighting, Weed Wrangle has been adopted by Knoxville Garden Club, Garden Club of Lookout Mountain, Memphis Garden Club, The Little Garden Club of Memphis, Founders Garden Club of Dallas, New Orleans Town Gardeners, and The Garden Club of Jackson, all in Zone IX. Some clubs are planting native plants to replace the invasives. The State of Tennessee plans to use the Weed Wrangle template in its state parks.
- The Village Garden Club of Sewickley, Zone V, began a P4P project in 2016 at the Audubon Greenway Conservation Area. Its goal is to increase biodiversity there by collecting seeds, making seed balls, and then replanting. As Debbie Goldman, project coordinator, explains, "Scattering seed balls gives a much better success rate of germination than scattering individual seeds does. Each ball has everything needed to protect it during the winter to allow it to grow into a healthy plant."

The P4P Anniversary Challenge: a special anniversary deserves a special gift. If all 18,000 GCA club members contributed one workday to a conservation project, those 18,000 days of work would be equivalent to almost 50 years of workdays contributed to public land across the country! So grab a shovel and a friend and contribute one day this year to a P4P project, start a new project, or volunteer at a local park.

The Scoop about Earthworms

Earthworms—are they good or bad? Are the earthworms in your garden soil as beneficial as we believe them to be? Did you know that in many areas of the United States like the Mid-Atlantic, New England, and Great Lakes regions, most of the earthworms that you see are invasive species from Europe and Asia? GCA Summer Environmental Studies (SES) Scholar Nick Henshue is exploring some of the complex distinctions among earthworms, including their roles in both healthy and polluted ecosystems.

Currently a PhD candidate in the Ecology and Evolution program at Rutgers University, in New Jersey, Nick holds a bachelor of science degree in elementary education/environmental education from Slippery Rock University and a master's in biology with a concentration in ecology from East Stroudsburg University, both in Pennsylvania. In 2015 Nick received a Kissel Scholarship underwritten by the Green Spring Garden Club (Zone VI), followed by his 2016 GCA SES award.

Nick reminds us that, while Charles Darwin's research made clear earthworms' beneficial effects on soil, the earthworms Darwin studied were native to England. In North America, however, about 10,000 years ago, native earthworms were pushed far south to avoid the ice, tundra, and permafrost that covered most of the northern states to areas as far south as Tennessee. The native earthworms were slow to move back north, which allowed invasive species to take their place along overseas trade routes—the same way invasive pests enter today. Soil ballast in ships, packing materials, ornamental plants, and, more recently, the fishing bait industry, have spread invasive earthworms rapidly across the United States and Canada.

Worldwide there are more than 3,000 species of earthworms. Presently 183 species of earthworms are found in North America. Fifty-nine of them are considered invasive, and they are being studied primarily for the damage they cause to the uppermost layers of soil. Specifically, the invaders are responsible for accelerated decomposition of the forest floor. When leaf litter is broken down too soon during a tree's annual cycle, other disturbances follow: its seeds are exposed to wildlife before they can germinate; the quality of topsoil is diminished; and erosion increases. An additional problem is that these earthworms eat a type of fungi that normally protects root systems. As those fungi, called mycorrhizal fungi, are eliminated, different groups of bacteria are able to interfere with nutrient and chemical pathways between plants and their soil.

Nick's scholarships have enabled him to conduct experiments assessing polluted soils and the possibility that certain earthworms might turn out to play a beneficial role in soil remediation. His research started with surveys of earthworm populations in polluted and unpolluted sites across New Jersey and eastern Pennsylvania. In the US there are more than 13,000 Superfund sites, defined as areas contaminated by hazardous waste at levels that pose a risk to human health, so locating polluted soil was, alas, not a problem. He next had to identify which worm species are most tolerant of high pollution loads, or, put another way, thrive in soil that is contaminated by metals.

At each chosen site, Nick used a "hot-mustard-solution method" to collect his study's earthworms. First, vegetation and debris on the ground were cleared away, then a rigid plastic ring was held firmly in place while a gallon of this solution was poured inside the ring and absorbed into the topsoil. Within seconds, earthworms irritated by the hot mustard appeared on the surface. After ten minutes, collection was complete.

Lumbricus terrestris. Photo by Nick Henshue

Amynthas agrestis. Photo by Nick Henshue

The two most common worm species collected and used in experiments were *Amynthas agrestis* and *Lumbricus terrestris*. *A. agrestis*, commonly known as "jumping worm" or "crazy Asian snake worm," is native to Japan and Korea, and a recent (under 20 years), aggressive invader of the Northeast. Some study sites contained 140 per square meter! *L. terrestris* (Canadian nightcrawler) can live for eight or nine years in permanent, deep, vertical burrows with multiple chambers that causes topsoil to mix with clay, shale, or sand—blocking plants' absorption of important nutrients. The first nightcrawlers probably came to the New World as early as the late 1600s in soil from England—they aren't Canadian at all!

For his experiment Nick took soil containing toxic heavy metals such as copper, zinc, and lead from degraded industrial sites. Twenty five-gallon

Forest understory with evidence of concentrated invasive worm population. Photo by Nick Henshue

Healthy forest understory. Photo by Nick Henshue

containers were filled with the polluted soil only, 20 others were filled with half-polluted and half-clean soil (from a home center), and another 20 with clean soil only. Seeds of rye (*Secale cereale*) and buckwheat (*Fagopyrum esculentum*), grains commonly used in ecological restoration work to absorb pollution, were planted in every container in all three categories. This process—using living plants to clean up contaminated soil, air, and water—is called phytoremediation, and it's a cost-effective approach that takes advantage of plants' natural ability to take substances out of the environment and metabolize them.

In addition, earthworms were added to ten of the containers in each category to evaluate their remediating role. Could their disruptive presence have an environmental "silver lining"?

The processing and analysis of soils were the most expensive parts of Nick's research, and they were completely funded by the GCA SES Scholarship. The analysis was performed at the Cary Institute of Ecosystem Studies in Millbrook, New York. Initial results show that certain invasive earthworms can help plants (especially rye) take harmful metals out of soil. Nick plans to complete his analysis this year, along with a bio-survey of earthworm and plant interactions in polluted soils.

Nick Henshue, 2015 Kissel Scholar and 2016 GCA Summer Environmental Studies Scholar. Photo by Jennifer Henshue

In the meantime, at a Rutgers Day event last spring, Nick taught children and their families about earthworms in their lawns. He has also shared the hot-mustard-solution method with educators from all over the country enabling them to identify collected earthworms and implement some of his research in their classrooms.

Nick is grateful to the GCA and Green Spring Garden Club in Maryland for advancing his research. And we are grateful to him for sharing his research with us.

—Kathy Keller, Scholarship Committee Vice Chairman, Akron Garden Club, Zone X

Conservation Ecology is the 2017 Winning Theme

The Freeman Medal Honors our North American Native Plants

Freeman Medal Winner

Ashe magnolia
(*Magnolia ashei*)

Nominated by Leslie Pierpont, Late Bloomers Garden Club, Zone VIII

Thanks to its showy flowers and foliage; its disease, heat, and pest resistance; and its value in the landscape, it's no wonder the Ashe magnolia was awarded the Montine McDaniel Freeman Medal, the GCA's Plant of the Year for 2017. *Magnolia ashei* is a spreading, deciduous understory tree or shrub. While the Florida Department of Agriculture lists it as endangered because of its small population and restricted area of growth (it is endemic to eight Florida counties), it can be grown in far more extensive geographic areas and is suitable for USDA Zones 6-9.

An ideal specimen for the small garden, the Ashe magnolia boasts large, citrus-scented, saucer-shaped, creamy white blooms in the spring that can reach up to 12 inches across; cone-shaped aggregates follow in the fall in an attractive purple-pink color. Its dark green, glossy leaves are up to two feet long.

The perfect scale for garden use, it is hoped that with its recognition as the Freeman winner, the long-lived Ashe magnolia will be planted more widely obviating its endangered status.

Ashe magnolia (*Magnolia ashei*). Photos courtesy of Steven P. Christman

Additional Winners

The Selection Committee sorted through eighteen nominations proposed by GCA club members in search of the 2017 winners. In addition to the Freeman Medal winner, the committee awarded two honorable mentions and one special recognition as featured on the following page.

American hornbeam (*Carpinus caroliniana*). Photo by Julie Makin, courtesy of Lady Bird Johnson Wildflower Center

Honorable Mention

American hornbeam
(*Carpinus caroliniana*)

Nominated by Beth Hickman, Rochester Garden Club, Zone III

This small, deciduous understory tree or multi-stemmed shrub is native to eastern North America. Resistant to disease, insects, and deer, it also tolerates a wide range of temperatures and of soil and moisture conditions. The hornbeam is much admired for its bark and branches, which exhibit a unique muscle-like fluting. In the spring, flowers bloom with both male and female catkins, which are a food source for animals. Female catkins produce clusters of winged nutlets as they mature.

Carolina silverbell (*Halesia carolina*). Photo by R. W. Smith, courtesy of Lady Bird Johnson Wildflower Center

Honorable Mention

Carolina silverbell
(*Halesia carolina*)

Nominated by Eleanor Pope and Katherine Hopkins, The Palmetto Garden Club of South Carolina, Zone VIII

Carolina silverbell is an enchanting, deciduous, small tree native to the southeastern United States. Resistant to disease, insects, ice damage, and deer browsing, and tolerant of heat and wind, Carolina silverbell is useful in establishing and maintaining riparian forests. Its lovely white, pendulous, bell-shaped flower clusters appear in the spring; four-sided winged, brownish, nut-like fruit follows in the fall. Grown in USDA Zones 4-8, the wood of the *Halesia* is soft and closely grained, making it a favorite wood for craftsmen.

California pipevine (*Aristolochia californica*). Photo courtesy of University of California Botanical Garden at Berkeley

Special Recognition

California pipevine
(*Aristolochia californica*)

Nominated by Vanessa Crews, Orinda Garden Club, Zone XII

This woody vine is endemic to northern California and is the exclusive food source for the larvae of the California pipevine swallowtail butterfly. It is therefore an essential link in the ecosystem. Red-spotted caterpillars eat the leaves of the pipevine and then use the pipe-shaped blooms as a secure enclosure to undergo their transformation from larvae to butterflies. The leaves contain a toxin, which, when eaten by the caterpillars, makes them unpalatable to predators.

—Lucy Rhane, GCA Horticulture Vice Chairman–Freeman Medal, Fauquier and Loudoun Garden Club, Zone VII

Established in 1995, the Freeman Medal was given to the GCA by Louis McDaniel Freeman and his wife, Judy, in honor of his mother, Montine McDaniel Freeman. This is the only GCA medal given to a plant. A philanthropist and former GCA director and vice president, Montine Freeman was a past president of New Orleans Town Gardeners and an outstanding horticulturist, conservationist, and native plant collector.

The goals of the Freeman Medal are to draw attention to select native plants and their cultivars, encourage their use in landscapes, make them more familiar to gardeners, and increase their availability in commercial nurseries. Each year the winners are chosen by a committee comprised of three to five nationally known horticulturists and experts in the nursery trade. The committee selects one winner and two honorable mentions, if merited, and may give one special recognition award. The Freeman Medal is awarded to an herbaceous perennial in even years and to a tree, shrub, or woody vine in odd years. Nominations are accepted from March 1 through December 1 each year.

Doug Tallamy Brings It Home

by Julie Taylor, Cedar Rapids Garden Club, Zone XI

Doug Tallamy is on a native plant mission, and fortunately for us, that mission is on overdrive. Raised in Berkeley Heights, New Jersey, Tallamy spent summers at nearby Deer Lake camping and exploring the natural world around him. Thankfully for Planet Earth, that curiosity has become part of his DNA. Tallamy racked up several degrees—Allegheny College (BS in biology), Rutgers University (MS in entomology), the University of Maryland (PhD in entomology)—and completed his postdoctoral work at the University of Iowa. In the 1980s he migrated east and accepted a position at the University of Delaware; he is currently professor of entomology and wildlife ecology there. The bottom line is that Tallamy loves bugs.

In 2000, he and his wife, Cindy, purchased a home on several acres near Newark, Delaware. The couple went to work on the property, which had been mowed for hay for decades and was chock-full of invasive plants. Their goal was two-fold: to remove the invasive plants and restore the eastern deciduous ecosystem that had disappeared long ago. But they found something curious: the native plants they were introducing were supporting insects, evidenced by holes in the foliage; the non-natives showed no signs of holes. No holes? What was up? That's when things began to change.

Biology 101

In a nutshell, Tallamy explains, Mother Nature has made insects the food source for animals who can't eat plants. It's a revolving cycle: insects feed on plants and animals feed on insects. Reptiles and amphibians love insects, rodents and birds love insects, spiders love insects. According to Tallamy, that cycle is increasingly—and alarmingly—being disrupted. And this spells disaster for our species and our planet.

For years, he says, homeowners have selected plant material primarily with aesthetics in mind. "We were taught from childhood," he explains, "that gardens are for beauty; they are a chance to express our artistic talents, to have fun with, to relax in." We have not considered who eats what in the food chain or the effects on biodiversity our choices have. What we've done by favoring ornamental landscape plants from China and Europe over those that have evolved here is that we have compromised ecosystem function. And this equals catastrophe for biodiversity. Simply put, when native plants disappear or are replaced by exotics, the insects also disappear, thereby cutting out a major food source for birds and other animals. By planting that golden raintree (*Koelreuteria paniculata*), for example, which is from China, and not the beautiful native oak (*Quercus spp.*), Tallamy says we lost an opportunity to support the development of 557 species of caterpillars, all of them nutritious bird food. His research shows that alien ornamentals support nearly thirty times *less* biodiversity than do native ornamentals.

Why should we care?

Biodiversity, he says, is a mysterious concept to many, regarded as somewhere "out there" in nature, not closer to home. "People believe that humans are here and nature is someplace else," he says. But species are disappearing at meteorically fast rates in our own backyards, in our neighborhoods, and in our towns. Consider this: Tallamy tells us that we have turned 54 percent of the lower 48 states into cities and suburbs, airports and strip malls; over four million miles of paved roads; and 41 percent more into various forms of agriculture. This means that we humans have taken 95 percent of nature and made unnatural. So, he concludes, "it stands to reason that we can expect to lose 95 percent of the species that once lived here if we can't learn how to share our living, working, and agricultural spaces with biodiversity."

Take an insect from Virginia. Introduce it to a plant from another continent and chances are that insect won't be able to eat the plant with the alien genes. Old school thinking says this was good: Kill all insects before they eat our plants! But an insect that is not able to eat part of a leaf ultimately fails in its role in the food web. The Kousa dogwood, for example, is a species from East Asia that does not support insect herbivores, yet we plant it instead of our native flowering dogwood (*Cornus florida*). Native dogwoods, on the other hand, support 117 species of moths and butterflies alone!

Bring it home

With exponentially encroaching development and profound habitat destruction comes increased pressure on wildlife—to merely survive. Gardeners have the power to reverse this trend and to make a significant contribution toward sustaining biodiversity. Landscapes don't need to be overhauled, Tallamy tells us. Increasing biodiversity in the garden can mean a gradual incorporation of native plants, and those native plant choices can reflect personal preferences and local likings. "Your garden has a function," he maintains. "Native plants are the solution. They are what it will take to give animals what they need to survive."

Gardeners and homeowners truly have the key, says Tallamy, and the power to preserve the natural balance of our ecosystems. "You've probably never thought of your garden as a wildlife preserve," he says. "But, it's truly the last chance we have for sustaining plants and animals that were once common all over the country."

Doug Tallamy is familiar to many in the GCA community: he is a 2013 recipient of the GCA's Margaret Douglas Medal, which was presented to him at the annual meeting in Philadelphia. In addition, he is a 2011 winner of Zone V's Conservation Commendation, a GCA Honorary Member from Zone VI, and a frequent speaker at GCA meetings throughout the US. He understands how powerful our voices can be and reminds us that we are key players in the challenge to save our planet and promote biodiversity. Our properties, our towns, and our cities are critical components in this challenge—as watersheds and food webs, all vital components to promote the ecological balance in our own backyards.

Protecting Our Land: *Scott Coleman*

by Betsy Bosway, *Indianapolis Garden Club, Zone X*

Scott Coleman at Cannon's Point Preserve—one of the most biodiverse ecosystems in the world providing important habitat for coastal wildlife and plant species. Photo by Debbie Laverell

Conservation and a love of nature are a family heritage for Scott Coleman. From his great-grandfather, a horticulturist and botanist known for his work with native azaleas, to his father, who continued the family tradition at their nursery south of Columbus, Georgia, Scott was drawn to the land from a young age. After graduating from the University of Georgia's Warnell School of Forestry, he began working at Little St. Simons Island as a naturalist. His position evolved into his current role as ecological manager, where he maintains, enhances, and restores the island's ecology and wildlife. He serves on boards for many of Georgia's coastal conservation communities, including St. Simons Land Trust, One Hundred Miles, and Coastal Wildscapes. The Bulletin Committee met Scott recently during a tour of Cannon's Point Preserve, a St. Simons Land Trust property, which it saved from development. The property's 600-acre wilderness serves as an outstanding example of preservation, conservation, and nature-centered recreation.

What are the roles of barrier islands and how do we protect them?

Luckily, Georgia has one of the best shorelines in the country consisting of a ribbon of fourteen islands [including both St. Simons and Little St. Simons islands] known as the Golden Isles. Ten islands have little or no development and four islands have development with protected areas. The barrier islands—which are in a constant state of change—shelter the mainland from wind, storms, hurricanes, and tidal surges. The dunes and maritime forest safeguard the salt marsh. We can protect these islands by conserving, restoring, and preserving the dunes and the wetlands. Creating a living shoreline helps reduce erosion and provide stabilization. A recent Nature Conservancy study verified that dune and wetland protection directly benefitted coastal areas from the brunt of Hurricane Sandy's storm surge.

What do you mean by "creating a living shoreline?"

Previously, bulkheads and concrete sea walls prevented erosion, but they have a short lifespan and are not environmentally friendly. A living shoreline uses plants and other natural materials to stabilize estuarine creeks, bays, and tributaries. We have anchored bagged oyster shells to the intertidal shoreline in layers, thereby providing stabilization. This technique is less than ten years old and is proving to be extremely beneficial for both wildlife and water quality. It's providing a major component back into the environment allowing oyster larvae to use old shells to start new oysters—which are a keystone species—one on which other species like fish and birds are dependent. An oyster-armored shoreline is also more resilient than preserved wood during a major storm.

What is a maritime forest?

The maritime forest is a coastal wooded habitat created by a canopy of pines, palms, and live oaks. Salt spray, sandy soil, and wind make these islands a less-hospitable growing environment. The

The marsh is a critical nesting ground for osprey, wood storks, and diamond-back terrapins; it buffers the upland habitats from coastal storm surges and functions as a natural filtration system to improve water quality. Photo by Sandy Dansby

forest provides an anchor to stabilize shifting sands and creates shelter for many species to thrive. They are a haven for migratory birds. The maritime forest at Little St. Simons is significantly older than the forest on Cannon's Point, which was cleared in the early 1800s for farmland.

We could see Little St. Simons Island from Cannon's Point Preserve on St. Simons Island. Is there a synergy between the two?

Yes, absolutely! The Hampton River, which meanders through the salt marsh, separates the two islands. We view the water as a barrier, but it isn't a barrier to nature. These islands impact each other constantly. Invasive plant species on one island can easily migrate to the other island by wind or water. Invasives are a big threat to the environment second only to development. Invasive animal species such as feral hogs uproot vegetation and damage nesting areas for shorebirds and turtles. Working together we prevent, detect, and control these non-native species from further damaging our coastal ecosystem.

Tell me about St. Simons Land Trust. What is its purpose?

[Our] mission is to preserve the island's natural character and enhance the quality of life for its residents. The St. Simons Land Trust has protected small and large tracts of land from development. For example, can you imagine the impact of Cannon's Point as a high-density area of 250 homes versus the natural canopy of trees, tidal marshes, and wilderness areas? The Land Trust mitigates rapid development or overdevelopment on our barrier island by promoting conservation and preserving some of the most ecologically significant habitats in Georgia for the public to enjoy—now and forever.

The maritime forest at Cannon's Point contains large live oaks, sand laurel oaks, loblolly pines, dense Spanish moss, and old, large vine species in the forest canopy. Maritime forests are a disappearing ecosystem on the Atlantic coast; in Georgia these forests exist only on barrier islands and the adjacent mainland. Photo by Debbie Laverell

Using bagged oyster shells provides shoreline stabilization. Photo by Sandy Dansby

Spanish Moss

Photo by Debbie Laverell

An iconic symbol of the South, Spanish moss (*Tillandsia usneoides*) is not a moss at all. It is an epiphyte and member of the bromeliad family. The "moss" receives nutrition from the air and lives on other plants—most notably the southern live oak (*Quercus virginiana*). These gnarled, giant oaks are a preferred host thanks to their high rates of foliar mineral leaching, which provides abundant nutrition to the plant. On St. Simons Island, Spanish moss proffers shelter for the yellow–throated warbler, the northern parula (a small warbler), and the rare northern yellow bat. Safely hidden, these species, along with many others, flourish and raise their young.

If you know spring in South Florida, then you know this is when she is most seductive. February—with sudden and unpredictable freezes—is over, and the air warms and becomes scented with flowers.

It was spring when we first visited Avenida Gardens in Hobe Sound. Its 13 meticulously curated garden rooms are part of a historic estate dating back to the late-19th century. We had the ultimate luxury of wandering the extensive garden on our own, free to explore its hidden rooms, botanical treasures, and outstanding plant collection.

Our stroll through Avenida Gardens led us to flowers blooming in the cultivated garden beds by the main house, coquina-paved patios and walkways, intimate spaces for lunching under large palms, porches filled with exotic orchids, and a vegetable garden with neatly planted raised beds. We ambled down a gentle and expanding lawn, which gradually revealed a vista to the Intracoastal Waterway; new and dramatic views opened to the south, visible through the majestic avenue—the *avenida*—of towering royal palms. Thousands of rainbow-hued bromeliads wove a tapestry of color under beds of specimen palms. Antique bronze fountains punctuated bright fuchsia and white flower beds along the great palm allée's axis.

Wandering back up the hill and toward the west, we passed through the secretive water garden and plantings of tropicals that border the shaded stumpery—modeled after the one at Highgrove created by Prince Charles—containing the remains of casuarina trees (*Casuarina equisetifolia*), also known as the Australian pine, felled in a hurricane. This marks the edge of the property's cultivated area.

A view southward to the royal palm allée. Photo by Marianne Salas

Beyond is the wild and natural hummock, which would have covered most of the island in the late 19th century. Today it buffers the property from the public road, which runs the length of Jupiter Island.

While the bones of Avenida Gardens remain as they have throughout its history, each year brings revisions as storms impact the landscape, the stumpery gradually decays, and nature leaves its mark on this particular slice of paradise.

Avenida Gardens is documented in the Smithsonian Archives of American Gardens. All photos from Smithsonian Institution, Archives of American Gardens, The Garden Club of America Collection

Portions of the original *avenida* of royal palms remain on this and other neighboring properties. Photo from the collection of Jennifer U. Johnson

Rendering by artist Ted Colebrook showing an aerial view of the property from Hobe Sound to the Atlantic Ocean. Courtesy of Jennifer U. Johnson

Following page: The grove of Cuban royal palms (*Roystonea regia*). Photo by Marianne Salas

AVENIDA GARDENS

by Marianne Salas, GCA Garden History & Design Chairman, Late Bloomers Garden Club, Zone VIII

MARYLAND IN MAY
MAY 4-7, 2017

Star Spangled Boutique with 23 Vendors • Open to the Public
Baltimore Waterfront Marriott Hotel • Baltimore, Maryland

Water taxis are crossing Baltimore's Inner Harbor, the Olmsted-designed parks are in full bloom, and the gardens in the Greenspring Valley are in peak form. It must be time for *Maryland in May!* The 13 GCA clubs of Maryland and the District of Columbia have exciting plans in store for the GCA's 2017 Annual Meeting.

Delegates will see exquisite gardens, attend workshops and seminars, savor the local cuisine of our region, and be inspired by our speakers and medalists. The medalists' achievements are extraordinary, and hearing from them at the Awards Dinner is an unforgettable experience.

Our speakers include William Baker, president and CEO of the Chesapeake Bay Foundation; Dr. Ari Novy, executive director of the US Botanic Garden; Adam Gross, architect and master urban planner at Ayers Saint Gross; and keynote speaker Dr. Paul Alan Cox, an ethnobotanist whose groundbreaking research about neurodegenerative diseases—Parkinson's, Alzheimer's, and ALS—is compelling.

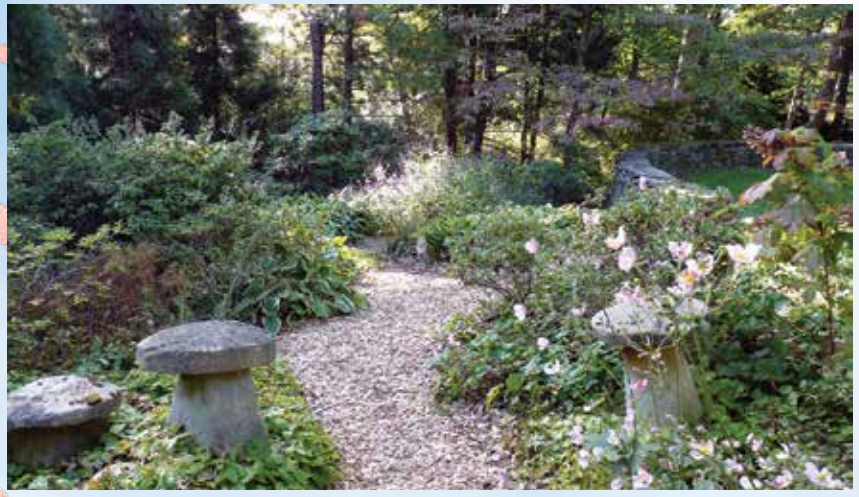


Photo by Gay Legg

The *Maryland in May* Flower Show celebrates the creative floral design, horticultural diversity, botanical arts, and photography of GCA club members.

There will also be plenty of retail therapy available at the incredible "Star Spangled Boutique," showcasing vendors with unique jewelry, clothing, scarves, shoes, and special gifts perfect for graduates and brides. Some of our favorite vendors are shown here and more can be found on the Annual Meeting boutique web page. (There you can also purchase the beautiful AM 2017 silk scarf in shades of cream and sky blue.)

To all this add friendship, camaraderie, learning, and laughter. What a time we will share! We look forward to welcoming you to *Maryland in May!*

Photo courtesy of Ladew Topiary Gardens

"Fantastic, Exhilarating, and Inspiring"

Conservation Study Trip 2016 Brings Boston's Environmental Issues to Life | September 11-15, 2016

Overview of Boston. Photo by Molly Jones

Surely there is no environmental trip anywhere that matches the GCA's Conservation Study Trips, which have taken place annually since 1990 in various locations around the country. Boston was the host city of the 2016 Conservation Study Trip this September, chaired by Conservation Committee Vice Chairmen Sharon Malt (Beacon Hill GC) and Michele Hanss (Chestnut Hill GC). Throughout the three-day meeting, an enthusiastic group of Conservation and NAL committee members were immersed in the important conservation challenges and triumphs of this historic city. The meeting's theme, "Conserving Boston by Land and by Sea," was the mantra that kept the group busy from morning until night with up-close exposure to some of Boston's leading government, environmental, and open-space leaders. The discussions and presentations centered on Boston's effective public-private partnerships, its investment in infrastructure and revitalization, and importantly, its growing concern with climate change—the primary focus of the Conservation Committee this year.

On a daylong Boston Harbor excursion, the group was able to observe how vulnerable the city is to sea rise. Since most of downtown Boston is built on landfill close to sea level, the consequences of a four-foot ocean rise or a large storm surge would devastate coastal towns and neighborhoods. Committee members were presented with the results of a citywide vulnerability assessment identifying what sectors of the region's economy and infrastructure are most at risk, as well as how Boston businesses and agencies will implement the city and state Climate Action Plans.

Attendees had the honor of being the first to hear of Massachusetts Governor Charlie Baker's executive order addressing statewide climate readiness from keynote speaker Matthew Beaton, the state's Secretary of Energy and Environmental Affairs, at a reception hosted by the Barr Foundation—one of the largest private foundations in New England contributing millions to charitable causes and working to advance solutions to climate change. The overwhelming message was that Boston is not taking climate change lying down!

A full morning was devoted to the nation's largest and most expensive infrastructure project, the Central Artery/Tunnel Project, known unofficially as the Big Dig, with an insider's exploration of the underground expressway built to address the city's horrific traffic issues. Other featured experts spoke about the effects of methane gas leaks on Boston's carbon emissions, research updates on bee colony collapse, and collaborative public-private efforts in and around Boston to address climate change preparedness. The study trip also included such highlights as visiting the Boston Harbor Islands with a director of the National Park Service, touring the Deer Island Wastewater Treatment Plant, and viewing Boston's newest park, the Rose Fitzgerald Kennedy Greenway.

This year's study trip fulfilled three important goals: to educate Conservation and NAL committee members on topics covered in the GCA position papers; to organize and unite committee members, preparing them for activities in the year ahead; and to help members become more effective conservation leaders in their zones and clubs. Responding to the post-meeting survey, one member characterized the gathering in this way: "The shared energy and passion among our group were infectious and inspiring. This meeting makes us understand that conservation is real and proactive change possible." The spark of collaboration was ignited.

—Sharon Malt, Vice Chairman
Conservation Committee—
Conservation Study Trip,
Beacon Hill Garden Club, Zone I

Conservation Study Trip participants at Spectacle Island, Boston Harbor. Photo by Molly Jones

ClubMilestones
Celebrations

Celebrating GCJ's milestones: Kelsey Bryant (Laurel GC), Martha Bradley (Greenville GC), Mary Sydney Green and Joanne Cheek (past GCJ presidents), and GCJ President Cheryl Welch. Photo by Ouida Drinkwater

Zone IX

The Garden Club of Jackson
Jackson, MS
Founded in 1991
Joined the GCA in 2006

The Garden Club of Jackson is celebrating the quarter-century mark and its tenth anniversary as a GCA member. Joanne Cheek, GCJ president from 2005-2007, recounted the club's exciting journey to GCA membership.

"On a crisp, sunny day in December of 2006, after working in the garden for most of the morning, I walked into the house and noticed a blinking light on the phone indicating we had a message. I checked the caller ID and realized it was from Bonnie Martin, chairman of the GCA Admissions Committee! My heart leapt, and I immediately wondered if this could the 'The Call' our garden club had been waiting for since it was founded by Mary Sydney Green in 1991.

"As I anxiously awaited the return call, I reflected on the past months during which our club was under review for GCA membership. Laurel Garden Club was our sponsor, and Greenville Garden Club seconded the nomination. The previous February, on a preliminary visit, we entertained representatives from the GCA—Zone IX Chairman Nancy Godshall from The Garden Club of Houston, Zone Director Carol McDonald from The Monroe Garden Study League, and Martha Love Bradley, Zone IX Admissions Committee rep from Greenville Garden Club. Other guests from our two sponsoring garden clubs were also in attendance at this important meeting.

"In October of 2006, we had our second visit from the GCA. One can imagine our excitement knowing we were being observed by 12 GCA representatives from all over the country—and knowing we were moving closer to membership in this prestigious organization. Our club members enthusiastically answered the call to action—they secured hotel reservations, met planes, and carpooled our guests to planned events at several Jackson landmarks, including tours of the Oaks, Eudora Welty House and Garden, and Mynelle Gardens Arboretum & Botanical Center.

"In the midst of my daydream, I was startled by the phone ringing. It was Bonnie Martin in New York at GCA Headquarters. Her call was to extend to our club membership in the GCA. What a delight it was to enthusiastically say, 'YES!'"

—Ouida Drinkwater

Zone XI

Town and Country Garden Club
Sheboygan, WI
Founded in 1956
Joined the GCA in 1969

Sixty years ago in tiny Sheboygan, Wisconsin, two women worked diligently to organize a house and garden tour to benefit their local church. This was the beginning of the Town and Country Garden Club. In 1969 TCGC was admitted into the GCA. In December 2016, the club celebrated six decades of friendship, a love of gardening, and the completion of many civic enhancements.

Riverbend, the grand home of Julilly Kohler, one of the club's charter members, offered the perfect holiday venue. The hardworking "Now We Are 60" Committee, capably chaired by Nancy Moudry, was comprised of members representing each decade of our 60 years.

Affiliate and active members were honored with TCGC and GCA awards. Chair Barbie Walker presented the GCA's Years of Service awards for their "generosity of time, dedication, knowledge, creativity, and faithful commitment to our mission" to Tippy Jung for her 45 years, to Shirley Kohl for her 60 years, and to Mary Anne Windsor, who also received the club's Tippy Jung Award, for her 55 years. Fifteen framed awards were presented to members who earned these and many more outstanding honors.

—Pat Schutt

Shirley Kohl with award. Photo by Gayle Meves

Tippy Jung with award. Photo by Gayle Meves

NewsWorthy

NGC's Bloom Board. Photo by Chris Battat

Zone I

Noanett Garden Club

Dedham, MA

In 2001 Noanett Garden Club conceived of a historic daffodil garden to be created at Elm Bank Reservation in Wellesley, MA. Named for elm trees planted there in 1740, Elm Bank has 182 acres of woodlands, open fields, and an old estate surrounded on three sides by the Charles River. In 1907 owners Dr. and Mrs. William Batzell designed a neo-Georgian manor house and commissioned the Olmsted Brothers firm to design new gardens and improve existing ones. Today the former estate consists of 12 gardens and welcomes 75,000 people annually.

NGC's garden idea began as a community service project to celebrate the Massachusetts Horticultural Society's 1996 relocation onto 36 acres of Elm Bank Reservation. Our garden now covers 3,000 square feet and includes native plants such as the rare and protected blazing star (*Liatris scariosa*) and Culver's root (*Veronicastrum virginicum*), a threatened species that provides pollen and nectar to long- and short-tongued bees.

To further education and expand stewardship, in 2016 NGC added two important, non-plant elements to the garden: the Bloom Board and "Seeds for U." Spearheaded by club members Harriet Halligan, Carrie Waterman, Lin Murray, and Caroline Whitney, the permanently installed Bloom Board is a weatherproof case featuring a series of interchangeable, colorful, and easy-to-read identification cards. The cards highlight which plants are in bloom as well as the animals that might visit or nest there. "Seeds for U" established the use of a small mailbox in the garden, where club members could put diligently harvested, cleaned, and counted seeds in handy envelopes for storage. Last year 300 seed packets were distributed to interested passersby through the mailbox. Seed packets disappeared quickly, reassuring us that visitors are responding positively to our efforts.

—Kimberly Hatfield

Zone II

Middletown Garden Club

Middletown, CT

Over the last century, the Middletown Garden Club has accumulated a lot of "stuff." Until last year the club's records, flower show staging, and fundraising paraphernalia were stored in various members' homes—even in one member's law office. When stories of other clubs losing items as a result of fire, barn collapse, and misplacement surfaced, former Co-presidents Lynn Johnson and Pat Murawski set out to find suitable storage for MGC objects, artifacts, and archives.

Dating back to its founding in 1915, the club's historic archives were of particular interest to members. Fortunately, these records have been kept in good condition thanks to the work of a previous storage committee headed by Deb Patrician. (This earlier work proved invaluable in documenting the club's history for its recent 2015 centennial celebration.) Using the GCA's guidelines on archive maintenance, the new committee sorted through boxes and culled records and documents. Those already on file at the GCA—minutes and newsletters, for example—were discarded. Old newspaper articles and typewritten accounts were photocopied on archival paper and the originals thrown away. The records deemed appropriate to keep were filed and stored in archival cases. The committee then found a centrally located, climate-controlled storage facility. Now members planning an event know exactly where to look for their "stuff."

—Ona McLaughlin

MGC members Pat Murawski and Lynn Johnson organize materials. Photo by Joyce Powzyk

GCNH members working together to make over 150 holiday arrangements. Photo by Mary-Michelle Hirschoff

Garden Club of New Haven

New Haven, CT

At the December 2016 meeting of the Garden Club of New Haven, members gathered to observe a long-standing tradition—the club's Holiday Workshop. For nearly 25 years GCNH has created winter arrangements for distribution throughout the community. The absence of two revered club members central to the history of the event made this year's workshop especially poignant: Maria Miller died in September; Lucy Elliot, who was declining at the time of the workshop, died on January 18, 2017.

With the bounty of their winter woodland gardens in hand, club members converged at the Carriage House at Edgerton Park in New Haven. Although unable to attend the workshop, Lucy Elliot contributed significantly to its success, preparing oasis and containers for the arrangements as well as organizing decorations and providing tips on their use. Using a well-established process, Civic Committee Chair Melanie Ginter, Co-chair Carol Warner, and Floral Design Chair Billie Ladd efficiently organized the event's many details.

As the festive aroma of evergreens filled the room, club members, who were tightly packed along narrow worktables, applied their design skills. Over the course of two hours, in a room brimming with fellowship, the club made over 150 arrangements. These included 57 small boxwood Christmas trees, 80 small evergreen arrangements, and 15 larger, more elaborate mixed arrangements. Following the meeting, a group of volunteers delivered the final products to their intended destinations—a nursing home, several senior living facilities, the pediatric wing of a hospital, a soup kitchen, and Connecticut's only inpatient residence for patients with HIV/AIDS—bringing holiday cheer to all.

—Caren Carpenter

Zone III

Ulster Garden Club

Kingston, NY

If a tree fell in an old cemetery, would anyone hear it? When one fell on Eliza Ann Sudam's gravestone at Kingston, New York's 1832 Sharp Burial Ground, two concerned groups heard the call of historic preservation and decided to act. Consulting with a local arborist, the Memorial Tree Fund (MTF), founded and run solely by members of Ulster Garden Club, and Friends of Historic Kingston concluded that many of the cemetery's trees required extensive pruning, and three seriously ailing ones would need to be removed.

Kingston, 90 miles north of New York City on the west bank of the Hudson River, became the state's first capital in 1777. Despite fires set by the British later that same year, nearly two dozen 18th-century limestone houses still stand in the city's Stockade National Historic District. In 1962 as a response to urban-renewal programs (the removal of trees to widen streets, build malls, etc.) plus the arrival of diseases that decimated local trees including the American chestnut (*Castenea dentata*), the MTF set about educating the public about trees and their protection and maintenance. The organization has planted over 1,000 street trees and funded two citywide tree surveys as well as municipal pruning projects.

And what of the headstones at Sharp Burial Ground? Beginning in November 2015, the work to protect the cemetery proceeded without a glitch until swarms of bees forced the arborist and his crew to depart. Fortunately a neighbor-beekeeper responded to that call. What a delightful surprise to discover that the bees were honeybees! The neighbor happily collected and relocated the bees, and the tree project was completed last May. Eliza Ann Sudam's headstone has been repaired, and the residents of Sharp Burial Ground may once again rest in peace.

—Anne R. Shultz

The removal of a hollow 100'-tall white pine that was in imminent danger of falling. Photo by Anne R. Shultz

Zone IV

Garden Club of Somerset Hills
Far Hills, NJ

Garden Club of Morristown
Morristown, NJ

Undergoing treatment for cancer can be an isolating and draining experience. Thanks to an initiative organized by Garden Club of Somerset Hills member Suzan Sletteland, members from GCSH and Garden Club of Morristown arrange fresh flowers for outpatients undergoing treatment at the Morristown Medical Center's Carol G. Simon Cancer Center. The flowers given to the patients raise their spirits, enabling them to leave the hospital holding a tangible symbol of life. Photo by Julie Aronson

Zone V

Garden Club of Philadelphia
Philadelphia, PA

The Garden Club of Philadelphia has a tradition of civic and community engagement, and the holiday season offers many opportunities. Every November members look forward to selecting an organization that serves people in need to be the beneficiary of the club's Christmas generosity.

The recipient this year was Womanspace Philadelphia, the only residential treatment program for chronically homeless women in the Philadelphia area. This nonprofit, which participates in the mayor's homelessness initiative, helps women achieve behavioral health, addiction recovery, and parenting skills.

Womanspace program director Jennifer Collier asked ten women in the program to provide a list of three of their most hoped-for gifts. Not surprisingly many of the requests were for items to protect them from cold weather.

At the club's annual Christmas Greens event, Collier spoke about the mission and spirit of Womanspace. She gratefully collected members' unwrapped gifts, including winter boots, warm jackets, and "Bed-In-A-Bag" pillow, duvet, and sheet ensembles. Collier's thank-you letter included a photograph of ten smiling women, who said they felt cared for and worthy for the first time in years. Collier added, "It was truly a Christmas of joy, gratitude, community, and love."

—Wendy T. Foulk

Garden Club of Allegheny County
Pittsburgh, PA

Last fall the Garden Club of Allegheny County celebrated the 21st anniversary of PIZZAZZ, its annual three-day shopping event. Featuring 28 vendors from the East Coast to Chicago, shoppers come from Pittsburgh and western Pennsylvania, Ohio, and as far away as West Virginia and Maryland. PIZZAZZ has raised more than $1 million since its inception, with proceeds supporting local conservation, environmental, preservation, and horticultural projects.

PIZZAZZ kicked off with a preview party offering early shopping to benefactors, patrons, and sponsors followed by two days of shopping open to all. This year the PIZZAZZ Bazaar was introduced showcasing seven local artisans and their exquisite crafts. From hand-painted silk, handcrafted jewelry, embroidered velvet shoes and boots to fancy foods, fine stationery, and hostess and holiday gifts, PIZZAZZ had something for everyone.

Beneficiaries include the Audubon Society of Western Pennsylvania, Grow Pittsburgh, Nine Mile Run Watershed Association, Phipps Conservatory and Botanical Gardens, Pittsburgh Botanical Garden, Pittsburgh Parks Conservatory, Student Conservation Association, Tree Pittsburgh, Western Pennsylvania Conservancy, and Point State Park.

PIZZAZZ has been a success because it offers something fresh to a broad range of tastes year after year.

—Carolyn Sanford

PIZZAZZ Co-chairs Anna Konrad (left) and Mary Margaret Stamy (right) with GCAC member Alice Snyder (center). Photo by Carolyn Sanford

The Garden Workers

Bryn Mawr, PA

For 45 years The Garden Workers has partnered with Fairmount Park in an event that has become a holiday tradition. Fairmount Park, the largest municipal park system in Philadelphia, is home to six historic country houses owned by prominent 18th- and 19th-century citizens and maintained as museums. One of them, Woodford Mansion, was built in 1756 by William Coleman, a wealthy merchant and justice of the Pennsylvania Supreme Court.

Every late November since the 1970s a group from TGW has decorated the parlor and front entry to Woodford for the popular Fairmount Park House Tour. Last year's theme was "A Very Philly Christmas." The centerpiece of the parlor was a majestic Christmas tree. Decorations included handmade miniature silhouettes of famous Philadelphians, imitating a popular form of portraiture from that time. In addition, as a nod to Coleman's friends Benjamin Franklin and Betsy Ross, skeleton keys and small American flags were hung from red ribbons. Cranberry topiaries, tucked into sprigs of evergreen, lined the mantel. The front door was decked in greens festooned to resemble the American flag.

TGW, along with other garden clubs and florists, shared in visitors' accolades, as did children from Clymer Elementary School who also helped decorate the house. (The school is named for Coleman's orphaned nephew, George Clymer, who was a signer of the Declaration of Independence and the Constitution.)

TGW is proud of its connection to Woodford and its ongoing role in Philadelphia's vibrant communities.

—Melissa Clark

The Garden Workers' Elfie Haab and Carol Walsh admire the results of their efforts at Woodford. Photo by Elfie Haab

The Weeders at the waste-recycling center. Photo by Taddy Dawson

The Weeders

Bryn Mawr, PA

Trash to Treasures! Last fall The Weeders visited RAIR (Recycled Artists in Residency) to learn about the tremendous value to be found in recycling and see how recycled products not only help save the earth but can also inspire creativity. Avi Golen, co-owner of Revolutionary Recovery since 2004, joined with co-founders Fern Gookin and Billy Dufala in 2010 to initiate RAIR. Fern Gookin is a board member of Delaware Valley Green Building Council and Billy Dufala, who conducted our tour, is a sculptor who teaches at the Pennsylvania Academy of the Fine Arts.

RAIR is building new connections between art, sustainability, and industry by giving artists a vehicle to create awareness of the waste stream. Where others see trash, RAIR sees art. Artists in residence, provided with tools and studio space, have daily, after-hours access to 350 tons of waste that is delivered in large dumpsters, weighed, and sorted by hand. Sorting requires speed and accuracy, yielding recyclable product and such finds as a fountain, tables, and even a piano. (The residual is crushed and sent to a landfill.)

RAIR fundraisers sell artwork as well as some of the salvaged items. Last November, at an event called "Trash Bash," a page from a 1969 *Philadelphia Inquirer* announcing "Man Walks on the Moon" was sold. The city's Moore College of Art held "Filthy Rich," an exhibition of artworks by RAIR this winter. One student said, "Coming to RAIR is like taking a trip to the moon. No matter how much time you spend planning, you don't understand the potential until you see it in person." Our members were so impressed that they are looking forward to a return visit.

—Martha Edwards, Nancy Evans

Zone VI

Georgetown Garden Club
Washington, DC

Last October members of the Georgetown Garden Club were given a royal welcome on their tour of the gardens at the British Embassy and treated to coffee on the portico flanked by myrtle topiaries that were a gift from the White House. The group was led through the grounds by John Sonnier and Phil Heavin, head gardeners at the Embassy, which moved to its present nine-acre location on Massachusetts Avenue in 1928—the first diplomatic installation on what has become known as "Embassy Row."

Noted British architect Edwin Lutyens (1866-1932) was retained to showcase British arts and architecture in the Embassy's design, but he used only American materials in construction, including Pennsylvania-made bricks cast one-third smaller than usual to fool the eye and make the residence appear larger. Lutyens sited the buildings to provide a view of the Washington Monument and the Capitol, which is now only visible from the seventh floor. His plans were influenced by Gertrude Jekyll, renowned British garden designer and his long-time collaborator, who consulted on the landscape design from a distance.

The tour took us into the rose garden where we noted specimens of *Rosa rugosa* and 'Zéphirine Drouhin,' a thornless, old Bourbon, climbing variety. We continued to greenhouses where rainwater is collected in barrels and through kitchen gardens where we admired espaliered apple and pear trees. Garden features include the stone "Jekyll steps" and sculptures throughout the grounds by noted British artists including Antony Gormley and Barbara Hepworth. We came away with wonderful gardening tips—orchids prefer rainwater (warm please) to tap water, use leaf compost to mulch roses, and deadhead hydrangeas only in spring. GGC members are expecting a profusion of blooms this summer thanks to advice from the Brits!

—Liz Evans

British Embassy Garden. Photo by Liz Evans

Guilford Garden Club
Baltimore, MD

Perennial Garden Club
Washington, DC

2017 Annual Meeting Decorations Committee Chairs Sarah Salomon (PGC), Tracy Swindell (GGC), and Corky Goetzke (GGC). Photo by Jean Mellott

As the excitement builds for the GCA's 2017 Annual Meeting, *Maryland in May*, the 13 clubs of Zone VI are ready to welcome delegates to Baltimore. Garden visits, workshops and seminars, noteworthy speakers, a spectacular flower show, and a dazzling boutique await members from our 200 clubs.

The Decorations Committee began creating the 65 centerpieces for the not-to-be-missed Awards Dinner, "A Star-Spangled Evening," early on. Starting in fall 2015, all zone club members were encouraged to plant alliums, which were harvested in early June 2016 and dried over the summer. Spray-painting parties were organized in the fall throughout Zone VI, so that these magnificent dried alliums—over 3,000 blooms!—would resemble the rockets exploding over Ft. McHenry during the War of 1812. It was our nation's flag—still aloft above the fort at the end of the Battle of Baltimore—that inspired Maryland's native son, Francis Scott Key, to write the words of our national anthem.

Our 13 clubs are ready and waiting for the festivities to begin. We'll see you soon—don't forget to wear your scarf!

—Brooke Morton, Perennial GC

KGC's Monarch Butterfly Garden dedication. Photo by Anna Forbes

MMGC members hiking the Appalachian Trail outside Roanoke, VA. Photo by Janet Frantz

Zone VII

Kanawha Garden Club
Charleston, WV

Kanawha Garden Club members planted 160 milkweed plants over the last year in a new Monarch Butterfly Garden along Justice Row in Charleston, West Virginia. The state lies directly along the monarchs' migration route, and club members planted milkweed to provide that much-needed host—not only for larvae to eat, but also to provide habitats in which to lay their eggs. Club Conservation Chair Sara Hoblitzell organized members for the planting project and continued garden maintenance. Photography Chair Anna Forbes took important photos for a weather-proof sign that documents each stage of the monarch's life cycle. The garden has been recognized as an official "Monarch Waystation," a national program that encourages conservation of this glorious butterfly. Both naturalists and butterflies can enjoy this space, which sits adjacent to the Carriage Trail, a half-mile historic and protected environment and former carriage trail—just a five-minute walk from downtown Charleston. It is the club's hope that school children will learn about the monarch habitat in the coming seasons. The Monarch Butterfly Garden is an educational project that also complements an earlier tree-planting initiative in Justice Row Park, which the club completed in 2011. A walk from the Carriage Trail to Justice Row Park to the monarch habitat is a 1-2-3 punch of which KGC is proud to be a partner.

—Kathy Muehlman

Mill Mountain Garden Club
Roanoke, VA

Inspired by the 100th Anniversary of the National Park Service, Mill Mountain Garden Club initiated a "Get Outside" project challenging members to get out and appreciate the beauty and the many natural resources in our community. Through myriad activities including hiking, bird walks, paddle-boarding on the Roanoke River, *tai chi* for gardeners, mountain biking, and even fly fishing, club members discovered that these workshops not only provide opportunities for members to try a new activity and/or learn a new skill, but they also build and strengthen friendships and camaraderie in our club.

Last fall, over 25 MMGC members participated in at least one of seven club-organized hikes on trails around the Roanoke Valley. The very first hike was on our namesake Mill Mountain. Impressively, ten members completed our own "Seven Peaks in Seven Weeks" challenge. Originally launched by the Roanoke City Parks and Recreation Department, our garden club adopted the concept and tailored it for our membership to include friends and families. The challenge—to hike one of the seven peaks around Roanoke each week for seven weeks—takes its inspiration from 7 Summits, the international mountaineering challenge to hike the highest peak on each continent. Our version involved hiking the premier trails around Roanoke and included Mill Mountain, Read Mountain, Sharp Top, Tinker Cliffs, and McAfee Knob. Many of these hikes are part of the Appalachian Trail, which runs through our beautiful valley, and are perfect for both beginners and experienced

hikers. A winter club hike in early February to Devil's Marbleyard [a unique geological feature of Antietam quartzite boulders located in the James River Face Wilderness along the Belfast Trail near Lexington] offered our members wonderful views of this spectacular part of Virginia. MMGC's new Get Outside Committee continues to find new ways to engage long-time and new members alike, encourage healthy activities, build and strengthen bonds, and showcase our beautiful community.

—Janet Frantz

Zone IX

The Garden Club of Jackson

Jackson, MS

With drought lowering river levels down South, Garden Club of Jackson members weren't able to dip a paddle in the water for their yearly canoe trip down the Strong River. Instead of embarking on their annual tradition to collect trash along the riverbank, GCJ members donned waders and gloves to help Mississippi's Department of Wildlife, Fisheries, and Parks.

The expedition was aimed at collecting data to better understand certain endangered fish species of the Strong River. Matthew Wagner, state ichthyologist, used a backpack electrofishing unit to stun the fish, while GCJ members managed a ten-foot seine (a vertical fishnet), to quickly collect them before the electric shock wore off. Other club members joined in with nets in hand to literally stomp in the river, a technique used to dislodge the hidden fingerling fish, while other members remained onshore to collect samples for the portable aquarium.

GCJ members don waders to collect endangered fish. Photo by Ouida Drinkwater

Wagner and MDWFP conservation biologist Chazz Coleman were specifically looking for threatened species, such as the pearl darter and the frecklebelly madtom catfish. During the morning's search, 11 species were identified. The captured fish will be preserved and catalogued into the collection at the Mississippi Museum of Natural Science.

—Ouida Drinkwater

Zone X

Cincinnati Town & Country Garden Club

Cincinnati, OH

Last November Cincinnati's two GCA-affiliated clubs, Cincinnati Town & Country Garden Club and Garden Club of Cincinnati, convened for their annual joint meeting. Renowned floral designer Jane Godshalk demonstrated various techniques, showcasing themes of color, space, style, and proportion. Inspired by Jane's designs, club members then created their own beautiful arrangements. Photo by Lanie Grever

Garden Club of Cincinnati

Cincinnati, OH

Tyler Wolf, owner of Urban Blooms, a Cincinnati-based social enterprise and nonprofit, was the Garden Club of Cincinnati's October speaker. Urban Blooms, with a mission focused on ecology, technology, and community, designs and installs living wall gardens. These self-sufficient vertical plant installations were the subject of Wolf's presentation to GCC.

A degree in environmental engineering from Ohio State University and a minor in entrepreneurship gives Wolf a unique perspective on design and implementation. Several years

GCC President Rosemary Ballard, Ann Kranbuhl, and Tyler Wolf with a living wall backdrop. Photo by Helene Bentley

ago he found a way to combine these two passions and launched Urban Blooms. His background has allowed him to conceptually picture, model, and quantify all components of the vertical garden—from the soil nutrients, to the water system, to the physical structure.

"Our installations constantly breathe fresh oxygen into the space, while removing cancer-causing compounds," Wolf noted. "Living walls also naturally filter dangerous particulate matter." He believes in the power of living walls—especially in public spaces—to beautify. In addition, they educate the public about sustainability, living architecture, and social enterprise. In his presentation, he shared many examples of living walls in public and private spaces and spoke about their social, environmental, and economic benefits. "When used as an indoor setting," Wolf explained, "living walls act as art installations that energize any space and are proven to drastically improve indoor air quality." Thanks to this interesting and inspirational program, GCC members were delighted to learn about a new aspect of gardening and Urban Blooms' initiative to reclaim and beautify urban spaces.

—Ann Kranbuhl

Indianapolis Garden Club

Indianapolis, IN

"Bully!" shouted Joe Wiegand from the pulpit at Indianapolis Garden Club's "Evening with Teddy Roosevelt." Wiegand's portrayal of the country's 26th president has earned him an international following; he is considered the world's premier "reprisor" of Theodore Roosevelt, often referred to as TR. The elegant December event for IGC members and their spouses was held at the historic Woodstock Club and featured cocktails, dinner, and tales of the Rough Riders during dessert. Wiegand transformed himself into TR for the entire evening and regaled guests with stories of his presidency, hunting big game, fighting with legislators, and working towards conservation efforts that created the National Park Service.

Joe Wiegand as Teddy Roosevelt with IGC member Georgianne Neal. Photo by Beth Seger

IGC President Beth Seger was mesmerized by Wiegand's authentic interpretation of TR during his keynote speech at the GCA's 2016 Annual Meeting in Minneapolis. She envisioned an IGC-hosted evening so that an Indianapolis audience could also enjoy his flawless portrayal. Dinner tables were named after national parks and decorated by members of the Petal Pushers, the club's floral design committee led by Nancy Mahany, Rae Wilson, and Katie Kruse. Decor was rustic but sophisticated with flowers, mosses, stones, and votives adding authenticity to the theme.

Wiegand, as TR, praised the GCA's achievements in conservation and education. He recited several of his famous quotes, including "Do what you can, with what you have, where you are." His advice is especially fitting for an organization like the GCA, whose club members work tirelessly to benefit their local communities. Members hated to see his visit come to an end, and all were thankful to Beth for sharing one of the highlights of the GCA's 2016 Annual Meeting with our local club.

—Betsy Bosway

Shaker Lakes Garden Club

Cleveland, OH

The Shaker Lakes Garden Club's November conservation meeting was in step with the *Bulletin*'s winter issue highlighting water. Author and environmental expert Peter Annin spoke about protecting the largest reservoir of freshwater on earth—the Great Lakes—in a highly informative presentation, "Water Tension and the Great Lakes Compact."

Annin holds a degree in journalism from the University of Wisconsin and an MA in international affairs from Columbia. As a veteran conflict and environmental journalist, he spent more than a decade reporting for *Newsweek*. His book, *The Great Lakes Water Wars*, is considered the definitive work on the Great Lakes water diversion controversy. Currently Annin is co-director of the Burke Center for Freshwater Innovation

Peter Annin, author of *The Great Lakes Water Wars*. Photo by Ann Whitney

at Northland College in Ashland, Wisconsin.

Annin told us that United Nations' officials predict that two-thirds of all people will face water shortages by 2025. The Great Lakes contain 18 percent of all fresh surface water on the planet and provide drinking water for more than 44 million people in the region. The result is increasing demand. Annin reviewed other water-related issues, including the demise of the Aral Sea in Central Asia, diversions around the city of Chicago, and the project that reversed the flow of the Chicago River in the late 1890s. He also discussed the Great Lakes Water Compact (approved by the eight Great Lakes states and signed into law by President George W. Bush in 2008), which bans the diversion of Great Lakes water outside the region with limited exceptions and the associated conflicts affecting the region.

Annin's knowledge of water-related challenges of the Great Lakes is masterful and his presentation was lively and informative. SLGC members, GCA club members, including Zone X Conservation/NAL Representative Melanie Biche, and guests from Stone Laboratory (the oldest freshwater biological field station in the US and the center of Ohio State University's teaching and research on Lake Erie), were all pleased to hear that Annin is working on an update to *The Great Lakes Water Wars*.

—Ann Whitney

Zone XI

Ladue Garden Club

St. Louis, MO

For 44 years, members of the Ladue Garden Club have decorated Ladue City Hall in St. Louis County, Missouri, for the holidays. The tradition began in 1973, when Ginny Gardner, an LGC member, approached the mayor with the idea of trimming a large outdoor evergreen tree using decorations made with food for the birds—a *smorgasbird* tree! LGC members got to work making seed bells, suet cakes, popcorn balls, peanut butter and cornmeal ornaments, spaghetti icicles, and bows to decorate the tree. LGC members replenished the mostly-edible ornaments throughout the winter.

The next year, Ginny once again approached the mayor—this time with an elaborate plan to decorate Ladue's City Hall. Ladue police and firefighters worked with our garden club to accomplish this extensive project. Wreaths and garlands were accented with brightly colored fruit, red velvet bows, pinecones, and pineapples—reminiscent of the Williamsburg style. The decorations were hung around the doors, windows, and city hall's three-story clock tower and cupola. (We definitely needed the firemen for this!)

LGC members decorating Ladue City Hall in 2016. Photo by Carol Armstrong

The tradition has continued through the years, fostering a strong relationship with our police and firefighters. In the 1990s, the City Hall Decorating Committee started another tradition of hosting a lunch, which was made by LGC members, to honor the police and fire departments. In 2016 the Sugarfire Smoke House, a local restaurant, generously donated a *smorgasbord* of barbecued meats with all the "fixins" for the police, firefighters, and city personnel.

Every year, as we help foster the spirit of the holiday season in our community, our traditions become bigger and stronger. We look forward to what the future brings.

—LaVanna Wrobley

Zone XII

Pasadena Garden Club

Pasadena, CA

Over 100 members attended the November 2016 joint meeting of the Pasadena Garden Club, Diggers Garden Club, and Hancock Park Garden Club for a presentation by J. Drake Hamilton, science and policy director at Fresh Energy in Minneapolis, Minnesota on "Designing our Future Climate." PGC's Conservation Committee organized the meeting at the Huntington Library's Rothenberg Auditorium and Rose Hills Pavilion.

An expert in climate policy, Hamilton was a key speaker at the NAL conference in Washington, DC, in 2016. Her presentation there so inspired PGC's Conservation Chairs Allene Nungesser and Marcia Bent that they invited her to share her knowledge

Zone XII Chairman Lindsay Dodge, PGC President Darrell Banta, Zone XII Director Annette Serrurier, and Zone XII Vice Chairman Kathryn Urban. Photo by Amy Lamb

on renewable energy, climate challenges, policy development, and clean energy solutions with a Southern California audience.

Hamilton's specific expertise is in physical geology with an emphasis on climatology and water resources. She was invited to attend the Paris Climate Summit in 2015 and shared her experience there at the three-club meeting in San Marino. She was extremely encouraged by the active support from the 174 countries that signed the agreement to curb emissions and promote climate-resilient growth. Additionally, she addressed why our country has an urgent need to retire coal plants, invest in renewable energy sources, support fee structures that encourage energy efficiency, and continue to promote the education and job training necessary to support climate change leadership and technology.

Our three garden clubs are populated with engaged and informed members, many of whom participated in a thought-provoking, post-presentation Q&A. The meeting allowed us to gather, discuss the issues, and share our thoughts. Collectively with the GCA, we are capable of making changes to protect our environment locally and globally.

—Allene Nungesser

Woodside-Atherton Garden Club

Woodside, CA

There's nothing random about Woodside-Atherton Garden Club's relationship with Random Acts of Flowers Silicon Valley (RAFSV). After eight group workdays and many volunteer hours, the relationship is strong. Shortly after the nonprofit branched out west to set up a fourth location in WAGC's backyard in neighboring Menlo Park, WAGC and Hillsborough Garden Club members jumped at the chance to repurpose flowers to cheer up patients at local healthcare facilities. Knoxville and Indianapolis garden clubs participate at branches in their cities too.

RAFSV collects used arrangements from funeral homes, weddings, events, florists, stores, and flower markets. Volunteers then refashion them into bouquets and deliver them to hospitals and senior care centers.

To date, more than half of WAGC's members have put their floral design skills to use, assembling hundreds of arrangements and often making deliveries. Last December, WAGC member Mary Paine volunteered to do both. "It's a lovely idea to share flowers that would have been tossed in the garbage or compost," she says, "but the truly special part is seeing how touched people are when someone cares enough to drop by with a floral surprise."

WAGC members put their floral design skills to work for a cause—Random Acts of Flowers. Photo by Karen Gilhuly

Founder Larsen Jay started Random Acts of Flowers in Tennessee after he fell off a ladder and ended up in the hospital for a week. He received so many get well bouquets that he decided to deliver them—in his wheelchair—to other patients. Their warm smiles inspired him to find a way to repeat that experience on a broader scale. WAGC member Anne Schoebel met Jay when she was the 2015-2016 chair of the club's floral design committee. Thanks to her inspirational meeting with him and the continued rewards of collecting vases, organizing group workdays, creating arrangements, and making deliveries, Anne now serves on RAFSV's board of directors. She recalls one delivery when she stopped to talk to a man walking down the hall at Stanford Hospital. "He was wearing a robe, trailing two IVs, and said, 'In about three hours I'm getting a new heart.'" Anne then presented a bouquet to his daughter, who was so overwhelmed she burst into tears. And that's when the hugging started.

—Kate Daly

Late Bloomers and Sage Advice

—Betsy Bosway, Indianapolis Garden Club, Zone X





Peonies in July? In the spring from our profusion of peonies I cut a dozen unfurled buds that show color. Rolled in newspaper, they can be kept in the vegetable drawer of the refrigerator until our Bastille Day (July 14) dinner. Arranged with baby's breath, they stay fresh for days.

—Mary Koss
Des Moines Founders GC, Zone XI
April 1979

Paint your trowel handle a pretty shade of pink! When you are called away from weeding, stick the handle upright in the garden. Now you can find it upon your return, or, if you don't return, it becomes quite decorative!

—Catherine Barrett
Lenox GC, Zone I
January 1972

A carpenter who grows the most beautiful roses in Anne Arundel County, MD, offers his grandfather's secret: **insert baby aspirin into soil** around roses each spring.

—Barbara B. Shea
Green Spring Valley GC, Zone VI
August 2001

This winter we've noticed **one evergreen shunned by deer** is the hemlock. Its needles are untouched. Perhaps the deer heard about Socrates?

—Esther Armstrong
Cedar Rapids GC, Zone XI
December 1989

When **transplanting container plants** into the ground knock the potting soil off the roots. Most potting soils are peat-based, and they repel water once dry. To keep the new plant properly moist, mix potting soil into the native soil so the new plant will adapt to its new home more quickly. This tip is especially true for lime-loving plants such as lavender, as peat moss has an acid pH.

—Jenny Rose Carey
GC of Philadelphia, Zone V
April/May 2011

To help **force spring branches to bloom** crush stems with a hammer and immerse them in a container of 7-Up (regular not Diet).

—Liz Benson
Plainfield GC, Zone IV
March 1991

Mark where **spring-blooming bulbs** are planted by recycling the little white pizza "tables" (plastic pieces used to keep box lids off cheese). Spray paint them a dull color such as maroon to make them less obtrusive.

—Chris Murray
The Little GC of Rye, Zone III
Feb/March 2011

There is one bright side
to raking up those wicked
spiky 'gumballs' dropped
by the American sweetgum
(*Liquidambar styraciflua*).
Spread them beneath hostas.
They serve as mulch and
discourage slugs.

—Megan Schwarzkopf
Bennington Garden Club, Zone I
October 2010

AFRICAN VIOLETS

I've read the books
And pamphlets witty,
Friends erudite
Have taken pity,
I've tried a north
And southern view,
Drinks from the bottom
And top side too.

If leaves get wet
I mop and shade them.
I always feed
But never spray them.
When rains descend
On these poor fellas,
Do natives run
With their umbrellas?

This question poses
Quite a problem
Sometimes they bloom
Sometimes stay sodden.
This bitter treatise,
Please read with sorrow,
I'm off to buy
Some more tomorrow!

—Helen Stevenson
West Chester Garden Club, Zone V
January 1957

www.gcamerica.org

Head to the web to be informed and inspired by GCA publications

Legislative Updates

At the core of the GCA's purpose is a commitment to safeguard the environment. The National Affairs & Legislation Committee (NAL) produces the *Legislative Updates* or LU. This online publication alerts GCA clubs and their members about committee hearings, bills actively before Congress, and administrative rulemaking by agencies requesting comments. Issues covered include those in areas that relate to the GCA's commitment to restoring, improving, and protecting the quality of the environment and are based on the GCA's eight Position Papers, which were updated last fall: Clean Air; Clean Water; Climate Change; National Parks; National Public Lands; Native Plants; Sustainable Agriculture, Seed Diversity & Food Security; and Transportation. By being informed, we protect our world.

Photo by Stacey De Luca

Photo by Debbie Laverell

focus

"Stunning!" "Dramatic!" "Striking!" "OMG!" "Remarkable!" "Amazing!" These are just some of the reasons to head to the web to check out the Photography Committee's online publication, *focus*. This quarterly magazine not only publishes the incredible photography of this talented committee and our GCA photographers, but it also includes helpful articles on the process, products, and the nuts and bolts of photography. The object of *focus* is to enhance the knowledge, and enjoyment at all levels of involvement in the art of photography and to appreciate its unique blend of technical skill, knowledge of composition and creativity. Every issue includes "What's the Story Behind the Cover," which is a brief description of what's behind the cover shot—the time of day, the equipment used, staging details, and any other tips. Reports on photography study trips, winning entries in flower shows as well as details on upcoming study trips are also covered. Whether you're an expert, a novice, or just someone who admires the artistic skills of others, *focus* will keep you fascinated page after page.

The Real Dirt

What are the "must have" plants for your garden? What are this year's Freeman winners, and how will they grow in your zone? *The Real Dirt*, published by the GCA's Horticulture Committee, has the answer to these questions and many more. From hands-on propagation information, articles on native plants, ideas for club projects, details on the upcoming Shirley Meneice Horticulture Conference, Partners for Plants project updates, recent horticulture award recipients, and book reviews, *The Real Dirt* digs into the heart and soul of the GCA. Published online four times a year, *The Real Dirt* shares wisdom from one gardener to another and truly has something for everyone. The updated index is coming soon, which will help you locate just the information you're searching for—in all 42 issues. You won't want to miss a single one!

Photo by Missy Janes

DigDeeper: *Resources*

Native Ash Trees
page 19

The documentary *Trees in Trouble* can be ordered from *bullfrogfilms.com*. Using the discount code GCA75, clubs receive a $75 special price to show the film publicly as long as no admission is charged.

Talking Trees
page 21

In addition to books such as *The Secret Life of Trees: How They Live and Why They Matter* by Colin Trudge (2006), or *What a Plant Knows: A Field Guide to the Senses*, by Daniel Chamovitz (2013), there are interesting TED Talks by Suzanne Simard (July 2016) and Stefano Mancuso (July 2010).

David Milarch
page 25

The Man Who Planted Trees: A Story of Lost Groves, the Science of Trees, and a Plan to Save the Planet by Jim Robbins (2015) tells the story of David Milarch's champion tree project. Watch Milarch's TED Talk and visit these websites for more information: *ancientreearchive.org* and *movingthegiants.com*.

Camellias
page 28

Barbara Tuffli, author of *Camellia Portraits* (2015), recommends Nuccio's Nurseries in Altadena, CA, and Camellia Forest Nursery in Chapel Hill, NC for mail-order. Also visit her website *camelliasbydesign.com* and check Dr. William Ackerman's book, *Beyond the Camellia Belt: Breeding, Propagating, and Growing Cold-Hardy Camellias* (2007).

NAL Conference
page 38

Louie Schwartzberg's Moving Art connects people with nature. Visit his website *movingart.com*. It provides additional information on his many films, links, and blogs. His TED Talks are "Hidden Beauty of Pollination," "Hidden Miracles of the Natural World," and "Nature. Beauty. Gratitude."

GCA Scholar Nick Henshue
page 42

For gardeners curious about earthworms this is the hot-mustard-solution recipe that Nick Henshue uses: Mix 1/3 cup of mustard powder (such as Coleman's) in a gallon of warm water and allow the solution to steep for an hour, then gently pour it on a cleared patch of ground. This quantity covers about 2.5 square feet. For best results, try under your leaf piles or other moist, shady areas. The irritant chemicals in the mustard neutralize in the soil in a little over an hour, with no adverse effects on plants. You may also view Nick's earthworm extraction on YouTube: *http://bit.ly/2kPaJPG*.

Doug Tallamy
page 46

For more information about native plants, visit Tallamy's website *bringingnaturehome.net* and read his book *Bringing Nature Home: How Native Plants Sustain Wildlife & Our Gardens* (2007). To learn about plants native in your area, Tallamy suggests the National Wildlife Federation's website, *nwf.org*, which includes a native plant finder by zip code.

Tallamy notes an uptick over the last ten years in native plant material available at local nurseries; he is encouraged that his message may be one that gardeners are ready to hear and he urges us to request native plants at local garden centers if they are not currently available.

By identifying and planting the top dozen native plants for your particular area and intermixing them with less desirable imported plants, landscapes can provide up to 75 percent of the food needed in an ecosystem.

Below is Tallamy's Top Ten list of woody and herbaceous plants to attract the most species of moths and butterflies:

Plants and Supported Species

WOODY PLANTS	
Oak (*Quercus*)	557
Black Cherry (*Prunus*)	456
Willow (*Salix*)	455
Birch (*Betula*)	413
Poplar (*Populus*)	368
Crabapple (*Malus*)	311
Blueberry (*Vaccinium*)	288
Maple (*Acer*)	285
Elm (*Ulmus*)	213
Pine (Pinus)	203
HERBACEOUS PLANTS	
Goldenrod (*Solidago*)	115
Aster (*Aster*)	112
Sunflower (*Helianthus*)	73
Joe Pye (*Eupatorium*)	42
Morning glory (*Ipomoea*)	39
Sedges (*Carex*)	36
Honeysuckle (*Lonicera*)	36
Lupine (*Lupinus*)	33
Violets (*Viola*)	29
Geraniums (*Geranium*)	23

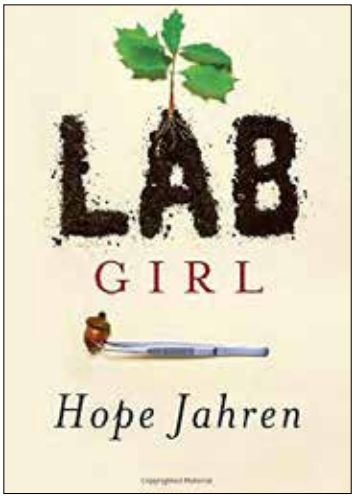
InMemoriam

Ann Boocock Coburn (Mrs. Arthur L. Coburn III)

Village Garden Club of Sewickley, Zone V

On December 6, 2016 the GCA and the Village Garden Club of Sewickley lost one of their most respected members and staunch supporters, Ann Boocock Coburn. Ann grew up in Buffalo, New York, where her father was headmaster of the Nichols School. Ann always considered herself an educator both in her personal and public lives. Her great passion was promoting conservation in all its facets. For over two decades Ann served on the Conservation and NAL committees in many capacities, including as chairman of both committees. She was a member of the Executive Board for four years, serving on the Finance Committee and as the GCA's treasurer. Ann once observed that the single most important role of the GCA at the national level was to mentor committee members, enabling them to return to their clubs and communities as effective local advocates. Ann was an active supporter of the Center for Plant Conservation, Pennsylvania Environmental Council, Allegheny Land Trust, Little Sewickley Creek Watershed Association, and other environmental and land conservation organizations. Her charm, energy, intellect, and varied interests in nature, watercolor, boating, and birds led to a wide circle of admiring friends. She will be sorely missed.

BookReview



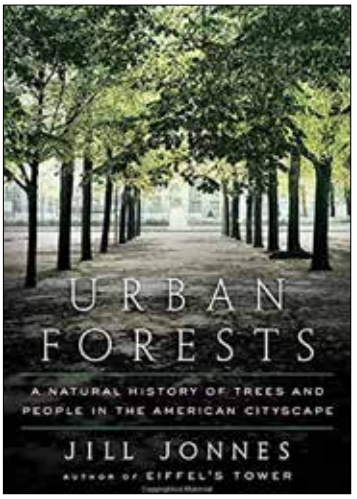
Lab Girl
by Hope Jahren
Alfred A. Knopf 2016

How wonderful to have a best-selling memoir about the life, not of a substance abuser or the neglected child of a writer or movie star, but of a contemporary working biologist! *Lab Girl* is a gripping, sometimes funny, explanation of the scientific life and of the joy that comes from Hope's great love of her work. The long hours of repetitive drudgery, the constant search for funds, and the difficulties of being a woman in science make a harrowing story nonetheless enlivened by humor. I was fascinated by the inventiveness and determination necessary to make, from scratch, the instruments necessary to do the cutting-edge science Hope wanted to do. In addition, Hope's personal history is complicated by isolation and mental illness. But thanks to her dedication, imagination, and grit, and to a deep friendship with a man as dedicated as she, Hope eventually finds her place in the science world and even finds love and family.

It is an inspiring memoir and wonderfully written, but what made me, and many others, love this book is the introduction of natural history essays into the narrative. We are already inside of Hope's mind, so the essays fit seamlessly into the narrative. Witty and informative, they cover topics such as seeds, roots, and leaves. It all made me wish I had majored in biology, although I'd be surprised if anyone else has ever explained it so artfully. The epilogue is an eloquent plea for all her readers to plant trees. GCA club members can't quarrel with that!

—Ellen Petersen
Millbrook Garden Club, Zone III

Urban Forests: A Natural History of Trees and People in the American Cityscape
by Jill Jonnes
Alfred A. Knopf 2016



The most critical trees in the world, arguably, are those in urban forests. They provide food and nesting sites for wildlife, save energy, enhance urban biodiversity, filter air pollution, and absorb carbon dioxide. *Urban Forests*, Jill Jonnes's newest book, is a celebration of urban trees and the many arboreal champions—citizen activists, plant explorers, politicians, and just plain tree nerds—whose enthusiasm has shaped American cities. Written for nature-lovers, city-dwellers, and science geeks alike, *Urban Forests* is scientific without being tiresome, and political only in that it suggests a collective responsibility to, and respect for, nature.

Jonnes—writer, historian, and author of the highly praised *Conquering Gotham, Eiffel's Tower*, and *Empire of Lights*—is a skilled storyteller. In addition to biographical sketches of urban forestry, she weaves in stories of America's native and introduced tree species. She perfectly balances the tension between our need and love for trees with our endless desire to conquer the environment—often to the detriment of other living beings. Unlike the isolated tree of the forest primeval, the urban forest tree must coexist with humans in an uncomfortable dance: for every tree-loving being, there is a bulldozer, snowplow, vandal, or dog marking the tree's trunk. And, for every prized tree on a city's street, there is one whose bark has been stripped, branches torn, canopy infested with Asian long-horned beetles, or trunk stapled with yard sale signs.

In this time of climate change, the effort to cool cities and clean the air we breathe with massive numbers of new trees is an immensely popular theme. Wouldn't "A Million Trees by 20xx" be a compelling slogan? Implementing the actual planting and then maintaining the commitment would make for complex and inspiring tales.

—Jane Harris
GCA Library Committee Chairman
Middletown Garden Club, Zone II

BulletinBoard: *Cuttings from the Calendar*

April

7-9 GCA Flower Show (VIII), *L'ORANGERIE*, at The Society of Four Arts, Palm Beach, FL. *Info:* Nancy Murray (nancymurray@comcast.net)

18 Spring Symposium & Boutique (VI), *Putting on the Glitz*, Talbot County GC, Easton, MD. *Info:* Kim Eckert (kaeckertdesign@gmail.com)

18-20 GCA Flower Show (IX), *Through the Keyhole—Magnifico!!!* at the Meadows Museum, SMU, Founders GC of Dallas, Dallas, TX. *Info:* Joan Smith (jsmith12@charter.net)

18-20 GCA Flower Show (VIII), *Amazing!* at Piedmont Driving Club, Cherokee GC, Atlanta, GA. *Info:* Fluffy McDuffie

19 Judging Workshop (III), *Floral Design and Horticulture* at Bedford Golf & Tennis Club, Bedford, NY. *Info:* Chris Murray (crissykm@optonline.net)

19-21 GCA Flower Show (XII), *Star Power*, GC of Santa Barbara, Santa Barbara, CA. *Info:* Barbara Kinnear (bek300@aol.com)

23-26 GCA Major Flower Show (IX), *Florescence Waves* at the Museum of Fine Arts, River Oaks GC/GC of Houston, Houston, TX. *Info:* Carole Bailey (cbaileybmt@aol.com)

28-30 GCA Flower Show (X), *Les Belles Fleurs—Through the Looking Glass* at Indianapolis Museum of Art, Indianapolis GC, Indianapolis, IN. *Info:* Amy Cooke (amywcooke@comcast.net)

23-28 Visiting Gardens Trip: Nashville, TN. *Info:* Betty Snellings (bettysnellings@gmail.com)

May

4-6 GCA Annual Meeting/Flower Show (VI), *Maryland in May* at Baltimore Marriott Waterfront Hotel, Baltimore, MD. *Info:* Kathy Phillips (kathy@kphillipsdesign.com)

9-11 GCA Flower Show (III), *On the Sunny Side of the Hudson* at Lyndhurst Carriage House, GC of Irvington-on-Hudson, Tarrytown, NY. *Info:* Barbara Defino (famcelen@gmail.com)

11-14 GCA Major Flower Show (XII), *Inspirations 2017: Opus for Spring* at the World Forestry Center, Portland GC, Portland, OR. *Info:* Liza Lilley

13 Garden Tour (VI), *Georgetown Garden Tour*, Georgetown GC, Washington, DC. *Info:* georgetowngardentour.com

23-25 Zone Meeting (III), *It's a Shore Thing*, Hauppauge, NY, North Suffolk GC, South Side GC of Long Island. *Info:* Cindy Mullin (puggieming@aol.com); Chris Amato (clamato11780@gmail.com)

June

9-10 GCA Flower Show (II), *Our National Parks—America's Best Idea* at Litchfield Community Center, Litchfield GC, Litchfield, CT. *Info:* Joanna Koster, (JoAnna@kosterkeunen.com); Drew Harlow (hgharlow@snet.net)

13-14 Zone Meeting (X), Cincinnati Town & Country GC, Cincinnati, OH. *Info:* Vallie Geier (vcgeier@gmail.com)

15-17 GCA Flower Show (X), *It's All Greek to Me* at Robbins Hunter Museum, Granville, OH, Little GC of Columbus, Columbus, OH. *Info:* Deborah Kelley (kelley5@columbus.rr.com)

15-16 GCA Flower Show (I), *By the Sea* at Old York Historical Society, York, ME, Piscataqua GC, York Harbor, ME. *Info:* Kimberly Devlin-Brytz (hollyhocks@comcast.net)

16-17 GCA Flower Show (III), *I Dwell in Possibility*, Millbrook GC, Millbrook, NY. *Info:* Richard McKeon (corgirm@aol.com)

15-19 Photography Study Group, Martha's Vineyard, MA *Info*: Leslie Purple (plantconn@aol.com)

18-25 Non-GCA Major Flower Show, WAFA World Flower Show in Barbados. *Info:* Peggy Moore (puritan43@aol.com)

21-22 Zone Meeting (II), Washington GC, Washington, CT

23-25 GCA Major Flower Show (XI), *Children at Play—Show of Summer 2017* at Chicago Botanic Garden, Chicago, IL, GC of Barrington, GC of Evanston, Garden Guild of Winnetka, Kenilworth GC, Lake Forest GC, Winnetka GC. *Info:* Molly Stephan (mollybstephan@gmail.com)

23-25 Non-GCA Major Flower Show (II), *Fête des Fleurs*, Newport Flower Show at Rosecliff Mansion, Newport, RI. *Info:* newportflowershow.org; Patricia Fernandez (mplwfernandez@aol.com)

July

9-21 Visiting Gardens Trip: Sweden, *Info:* Betty Snellings (bettysnellings@gmail.com)

15 House & Garden Tour (I), Great Barrington, MA, Lenox GC, Lenox, MA. *Info:* (lenoxgardenclub.net)

18-25 Home and Garden Tour (XII), *Behind Adobe Walls®*, Santa Fe GC, Santa Fe, NM. *Info:* Enid Tidwell (etidwell01@comcast.net); tickets: 1-800-283-0122 (Terry@westwindtravel.net)

19-20 GCA Flower Show (I), *Meet Me on Nantucket*, Nantucket GC, Nantucket, MA. *Info:* Kathy Cruice (kathycruice@gmail.com)

August

9 Annual House Tour (I), *A Cliff Walk*, Nantucket GC, Nantucket MA. *Info:* Barb Jones (jones.barbara.e@gmail.com)

September

10-14 Conservation Study Trip, Cleveland, OH. *Info:* Jane Ellison (janee1123@yahoo.com)

19-20 GCA Flower Show/Zone Meeting (I), *Where Stone Walls Meet* the Sea at Little Compton Community Center, Little Compton GC, Little Compton, RI. *Info:* Heather Steers (heathersteers@gmail.com)

19-21 Zone XII Judging Workshop, Honolulu, HI. *Info:* Emmy Seymour (emmy.seymour@gmail.com)

20-22 GCA Flower Show (XI), *Floral, Flora and Flash*, Ladue GC, St. Louis, MO. *Info:* Margot Bean (5beans@sbcglobal.net)

25-27 GCA Shirley Meneice Horticulture Conference, Lauritzen Gardens, Omaha, NE. *Info:* Linda Grieve (linda@lindagrieve.com)

PartingShot: *Stairway to Heaven*

Photo by Beverly Martin, Seattle Garden Club, Zone XII, taken at Roden Crater, Arizona

Competition: *Northwest Passages,* Seattle GC Flower Show, Bellevue, WA, May 2015

Awards: First and Noreen Frink Best in Show; Class: "Secret Passage"—A View through a Gate or Portal

Judges' Comments: "Leading lines create a passageway through the mysterious portal"

THE GARDEN CLUB *of* AMERICA

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