Botanists Find New Ways to Inspire Students

Society Launches Online Courses

Collecting Seed to Restore a Storm-ravaged Coast
Native Plant News

Volume 3, No. 1, Spring•Summer 2016

Native Plant News is published by New England Wild Flower Society, an independent, nonprofit, member-supported organization whose mission is to conserve and promote the region’s native plants to ensure healthy, biologically diverse landscapes. Subscriptions to Native Plant News are included in membership dues, which start at $40/year for individuals.

For membership information, contact: membership@newenglandwild.org.

Design Rachel Wolff Lander
Editorial Jane Roy Brown

Board of Trustees
Chair Deirdre C. Menoyo
Vice Chair Pam Resor
Treasurer Janet Ganson
Clerk Anita E. Springer
Executive Director Debbi Edelstein

Trustees
Ralph Brown
Lalor Burdick
Pamela B. Durrant
Mary Griffin
Barbara Keller
Virginia McIntyre
Lita Nelsen
Jessie B. Panek
Polly Pierce
Kathy Shamberger
Alan Smith
Jackie Stone
Mary Ann Streeter

Copyright© 2016 New England Wild Flower Society®. All rights reserved. No material in this publication may be reproduced or used in any way without written consent. For permission, contact Editor, Native Plant News, 180 Hemenway Road, Framingham, MA 01701.

Native Plant News

THE
Garden Shop
FOR EVERYONE ON YOUR LIST


GIFT CARDS FREE GIFT WRAP SHIPPING SERVICE

OPEN DAILY 10 AM – 5PM

visit us online www.newenglandwild.org/store

COME WITH US ON A TRIP TO

China
A Backroads Journey to Fascinating Cultures and Spectacular Landscapes!

July 8-21, 2016
Join Ted Elliman to explore forests, meadows, alpine communities, and the culture of the traditionally nomadic Tibetan people who inhabit the eastern edge of the Roof of the World. Details at www.newenglandwild.org/learn/china
From the Executive Director

ADVOCATING FOR ENDANGERED SPECIES

As I write this letter, we are approaching the 11th national Endangered Species Day, held each year on the third Friday in May to build awareness of the importance of saving imperiled species. In 2006, the U.S. Senate unanimously passed the resolution creating the day, although even then the Endangered Species Act (ESA) was itself threatened. In recent years, legislative attacks on the ESA have escalated; and it takes vigilance by our elected representatives and their staffs to discover and then defeat riders in bills on appropriations, water issues in the West, national defense, and more that would gut protections for listed species.

Recently, I traveled to Washington, D.C., to help honor Congressional champions of the ESA, who year after year stand up for a law that 90 percent of Americans support. A coalition of national conservation groups presented awards to eight representatives and senators, among them Sen. Sheldon Whitehouse of Rhode Island and Rep. Niki Tsongas of Massachusetts, for “their tireless support for wildlife” in the face of relentless “efforts to weaken or eliminate the Endangered Species Act and other bedrock conservation laws grounded in science.”

We applaud these champions and the groups that honored them. But note the wording—it’s all about wildlife. Indeed, the ESA affords far less protection to the nation’s nearly 19,000 species of native plants, of which an estimated 29 percent are threatened. At present, only 901 plant species are federally listed, but the ESA does not protect them on private land. Animals are protected everywhere, and plants only on federal land. Few states have exercised their right to enact more stringent laws; in New England, only Massachusetts grants plants and animals equal protection. And state ESAs are also frequently under siege.

The Society and its colleagues across the country are working to raise awareness of the inferior protection given to plants, to seek changes in both state and federal endangered species laws, and to help our champions thwart efforts to roll back current safeguards. You can help—by following the issue and by contacting your elected representatives to voice your support for plants and for state and federal endangered species laws when threats emerge.

Sincerely,

Debbi Edelstein
Though only 1,528 feet high, the summit of Cadillac Mountain in Acadia National Park in Maine is one of the most visited on the eastern seaboard.

About 500,000 of the park’s 2.5 million annual visitors hike or drive to this subalpine summit. These trampling feet, along with pummeling rains, have worn down the summit’s alpine plants and fragile soils.

In 2015, the Society, contracted by the National Park Service, embarked on a multi-year experimental project to restore the summit’s plant communities, starting with an inventory of the summit’s vascular (leafy) plants. The inventory, funded by Friends of Acadia, establishes a baseline for restoring the summit’s diminished plant communities. Society research botanist Arthur Haines and contract botanist Jill Weber combed the entire 18-acre summit and created a list of 145 species. They also staked out 147 plots along four transects (measured lines) and determined the percentage of each species within each plot. Because of varying methods and locations, past surveys did not provide direct comparisons, so the Society’s survey will establish a baseline to monitor these plant communities going forward.

During the survey, the botanists identified five rare plant species. They also found that some species, such as pitch pine (*Pinus rigida*), which some scientists had predicted would migrate from lower elevations to the summit, have already established small summit colonies. In the fall, Bill Brumback and Amanda Weise, ecological programs coordinator, marked locations for more than 60 restoration test plots, including several areas already fenced off to prevent trampling. This summer will find them collecting seeds from both common and rare species on the summit to propagate plants for restoration experiments. Because the summit’s harsh conditions slow down growth, these experiments may take several years.

The experiment started this winter, with Nasami Farm’s propagators sifting thousands of fern spores in micro-meshed sieves—the first step in growing 6,000 ferns for the Curtis Woodland Garden at Garden in the Woods this summer. Next year, when the Woodland Garden is fully replanted, 42,000 new plants will be Nasami-grown, 15 percent of them ferns started from spore.

Like growing other plants from seed, this method promotes genetic diversity. But there are reasons why few growers walk this path: Because fern spores need the same moist conditions favored by infectious fungi, they require a sterile environment—from soil-less growing mix and water to trays and tools—for the first few months.

With the aid of some basic equipment and expert advice, Nasami’s crew is achieving verdant success. The fern plugs include four species: long beech fern (*Phegopteris connectilis*), evergreen wood fern (*Dryopteris intermedia*), maidenhair (*Adiantum pedatum*), and Braun’s holly fern (*Polystichum braunii*). Check out their progress at the Curtis Woodland Garden. The Curtis Woodland Garden revival is made possible by support from the Hope Goddard Iselin Foundation.
Ted Talks: Q & A with *Wildflowers of New England* author Ted Elliman

*By Jane Roy Brown, Writer–Editor*

NPN: How does this field guide differ from previous ones?
TE: This is the first comprehensive, photographic guide that focuses solely on the wildflowers of our six-state region instead of the whole Northeast. The book covers nearly 1,100 species in New England’s extraordinarily diverse landscapes, from mountains to seacoast. It’s also portable, handy to use in the field, and designed for both beginners and experienced naturalists.

NPN: What new information does it contain?
TE: Over the past several decades, scientists have learned a lot about plant relationships, so the scientific names of many species have changed. This book uses up-to-date names, based on the Society’s *Flora Noveo-angiae* by Arthur Haines and our Go Botany website.

NPN: Why is it important to know the names of wildflowers?
TE: Once you learn the name of a plant, it opens up curiosity about the natural world. With that comes appreciation for its whole environment. That may motivate you to conserve places that still have intact ecosystems. Given how fragmented our region is, conservation is really important.

NPN: Why were you the person to write this?
TE: As a botanist for the Society and other organizations before that, I’ve been doing fieldwork throughout New England for many years. My Society colleagues, many dedicated volunteers, and the Society’s library and herbarium were also very helpful to me as I wrote the book. And the project would not have been possible without generous financial support from several individuals and organizations.

**“Neonic” Pesticides Threaten Native Bees**

*By Mark Richardson, Director of Horticulture*

Public debate over neonicotinoid-based pesticides ("neonics") has centered on a supposed link between these chemicals and the colony collapse disorder decimating European honeybees. Neonics are the active ingredients in many systemic pesticides, which plants absorb into their vascular systems, making them unselectively toxic to most insects. Some big-box stores have agreed to stop carrying neonic-treated plants, but many still sell the pesticides, and many commercial nurseries still use them.

Meanwhile, the U.S. Geological Survey last year reported a more alarming threat: More than 70 percent of native North American bee species foraging near farmland contained neonics. Most native bees pollinate a wide range of plants, from native wildflowers to tomatoes, so this bodes badly for both natural and agricultural systems.

Though the long-term impacts of systemic pesticides are still unknown, it is clear that neonics threaten native pollinators now. As Jean-Marc Bonmatin of the worldwide Task Force on Systemic Pesticides warned in 2014: “Far from protecting food production, the use of neonics is threatening the very infrastructure which enables it, imperiling the pollinators, habitat engineers and natural pest controllers at the heart of a functioning ecosystem.” For more information, see the Xerces Society website: [http://www.xerces.org/](http://www.xerces.org/).

---

**STAFF PICKS FOR SUMMER READING**

*By Jane Roy Brown, Writer–Editor*

Society staff members suggest three favorite recent titles in the realm of flora:

1. **The Cabaret of Plants: Forty Thousand Years of Plant Life and the Human Imagination**, gracefully penned by British naturalist Richard Mabey, chronicles the entwined history of people and plants through time and place. He wants us to know—and care—that plants are essential to life on earth. W. W. Norton, 1st American edition, hardcover, 2016. $29.95.*


3. **The Oldest Living Things in the World**. Artist–author Rachel Sussman, guided by biologists, traveled the world for a decade to photograph earth’s oldest continuously living organisms. (Spoiler: Most of them are plants.) This visually stunning book is packed with fascinating science. University of Chicago Press, hardcover, 2014. $45.

*All prices are publishers’ suggested retail prices.
From Botany Bingo to Fruit Salad: Botanists Find New Ways to Inspire Students

When someone at a cocktail party asks Christopher Martine what he does for a living, Martine replies that he’s a botanist. Then he braces for a common response: “Do you study marijuana or something?”

Martine, a botany professor at Bucknell University—also the David Burpee Chair in Plant Genetics & Research and the director of the Manning Herbarium—says no. But before his questioner drifts away, Martine unpacks a few stories from real-life botany, like trekking through the Chihuahuan Desert with a colleague in search of plants that can survive on the baked gypsum flats deposited by ancient seas. Or he may charm them with an a capella ditty he made up about skunk-cabbage after spending a day with an ecologist in a frozen bog while she took the temperatures of the malodorous plants. At that point he might toss out an intriguing fact: Skunk-cabbage (Symlocarpus foetidus) produces heat from its starchy roots, melting the snow around it in time to attract and feed spring’s earliest pollinators. The hood-like enclosure around its flowers traps the heat, drawing insects to the pollen-dusted flowers inside like skaters to a warming hut.

Party patter isn’t the only way Martine pumps up the volume on what he calls a “quiet science”: He blogs about botany for Huffington Post and produces a YouTube video series called Plants Are Cool, Too! that chronicles his adventures with colleagues in the field, from New Jersey parking lots to remote swamps and deserts.

“Several years ago, I ran field biology camps for children,” he says. “Many of the kids could share all sorts of cool facts about animals, but they almost
“The biggest ‘ah-ha’ moments come when [students] start to recognize their own personal relationships with plants.”

Martine knows that stories can kindle fascination with plants, and he hopes that this inspiration will secure the future of his profession—not to mention the green realm on which life on this planet depends. He and many colleagues are keenly aware that botany is dropping off college curricula at a rate that threatens the subject’s extinction within a few generations. As Senior Research Ecologist Elizabeth Farnsworth reported in these pages in 2013, Botanic Gardens Conservation International published research that year documenting a more than 50 percent decline in the number of academic botany programs in the past two decades. As if anticipating a collective public shrug, the report spelled out what is at stake: Losing botanists means losing the country’s already marginal capacity to conserve plants and the fauna they support, slow climate change, and develop plant-based alternatives to products that harm human health.

Botany professors have responded like scientists, by investigating causes of the trend and testing solutions. In a 2014 essay, Cassandra Quave, an ethno-botanist at Emory University in Atlanta, concluded that rote memorization and other traditional teaching methods were a big reason why students shun this science. Botanists needed to make plants interesting—not just to college students, but also to children.

Quave’s call to action comes at a fertile time for innovation, as universities experiment with teaching methods that incorporate both distance learning and more hands-on activity. She and Martine are among the academic botanists worldwide who are seizing the opportunity to find new ways to inspire students and share their own passion for plants. Trending technologies—online course platforms, YouTube, and social media—are not the only arrows in their quiver. Above all, they say, it is crucial to both inspire new audiences and give existing students experiences that establish relevant, tangible connections with plants.

Quave, for example, comes at botany from the perspective of health, offering two interdisciplinary courses—one on food and one on botanical medicine—through Emory’s Center for the Study of
Taking Botany Online: An Interview with Daniel A. Chamovitz, Dean, George S. Wise Faculty of Life Sciences and Director, Manna Center for Plant Biosciences, Tel Aviv University

As the author of *What a Plant Knows: A Field Guide to the Senses* (2012), a popular science book, Professor Chamovitz was well positioned to pilot an online botany course for a broad audience. His course of the same title premiered on the online learning platform Coursera in 2014 and was the sole online offering in botany for the general public until the Society launched online courses this spring. *Native Plant News* asked him about his experience.

**NPN: Why did you develop an online course?**

**DC:** I wanted to see how I could use the medium to complement my classroom teaching, and the university wanted to test Coursera. I couldn’t imagine that tens of thousands of students would want to take my course! [As of this spring, enrollment has surpassed 50,000.]

**NPN: What kinds of people enrolled?**

**DC:** An entire spectrum, from middle schoolers—including my daughter—to senior citizens, from people with no diploma to university grads, professionals, and plant biology professors.

**NPN: What were the main challenges?**

**DC:** In the classroom, I can be flexible in style, flow, and content in response to students. In front of a camera, you have to plan everything.

**NPN: What feedback have you received from students?**

**DC:** Most amazing was that online students felt that they got as good a learning experience as my classroom students did, if not better. They felt as if I was teaching directly to them. I was also impressed by the seriousness of the online forums.

**NPN: Do you think online courses can kindle curiosity about botany among the general public?**

**DC:** Yes. Judging from my experience, there is a huge untapped well of potential botanists waiting to be excited.
At Rutgers University in New Jersey, botany professor Lena Struwe turned her teaching style around a few years ago, when the university approved botany as an elective for undergraduate biology majors. Struwe, who had up to then taught traditional undergraduate and graduate botany courses, suddenly found herself teaching large classes of students who knew little about plants. Meanwhile, Rutgers was encouraging professors to try a more active teaching method known as the “flipped classroom,” in which the teacher uses part of the class time to lead hands-on projects.

So, Struwe put a creative spin on her undergraduate courses, inventing engaging activities like the BioBlitz, in which students team up and compete on a personal quest to see how many species they can observe in a month. The BioBlitz also teaches students how to use a key system to identify plants, using the Society’s Go Botany website and *Flora Novae Angliae* manual, among other resources. Struwe also created Botany Morphology Bingo, which sends students outside to find the plant parts that match pre-printed words in bingo boxes. And, with pre-med students in mind, she designed a class exercise to solve a medical mystery: “A patient who has been poisoned by a plant comes into an emergency room, and students have to figure out which plant is responsible before the victim dies,” she explains.

Despite transforming botany in their classrooms, these botanists say that there is still no substitute for field experience—even online courses include outings (see sidebars). Laura Meyerson, who teaches two field courses, restoration ecology and invasion biology at the University of Rhode Island in Kingston, echoes similar comments from colleagues when she says, “The best way for students to learn about plants is to get out in the field and see them, touch them, smell them, and generally discover them.”

To teach her students how powerfully plants can transform their surroundings, Meyerson leads them deep into a stand of invasive common reed (*Phragmites australis*). “From the outside it seems like an innocuous tan and green patch, but inside it, they suddenly feel as though they have entered another world—the light changes, the temperature and humidity change, and they cannot see outside,” she says. “They suddenly understand how one species can have a huge impact on the environment.”

It’s too early to say whether reaching out through online courses and other new technologies, combined with innovation inside the classroom and out in the field, will pull more students into the profession, but

“My philosophy on botany education in the twenty-first century is that I’d rather teach enough of the key concepts in ways that are engaging than everything in ways that are not.”

---

Rutgers botanist Lena Struwe used her imagination to transform her classes.

Photo © Susanne Ruemmele
the statistics from Martine’s YouTube videos are heartening: “The views we’re getting from 18- to 24-year-olds, about 40 percent of the total, are the most of any age group,” he says. “I am pretty happy with that. I also hear quite a bit from K–12 and university teachers, who tell me they are using the videos in their classrooms.”

Martine is also aware that breaking with traditional teaching methods may raise eyebrows, especially at a time when elementary school teachers are focused on high-stakes testing.

“Someone out there is going to say, ‘how are you going to cover everything?’ And the truth is that I don’t,” he says. “My philosophy on botany education in the twenty-first century is that I’d rather teach enough of the key concepts in ways that are engaging than everything in ways that are not. For me, it’s no longer about exhaustive content coverage—it’s about convincing a new generation of students that botany is not the boring subject that they think it is.”

---

Learn Online with the Society

by Elizabeth Farnsworth, Senior Research Ecologist

Teaching a field science like botany on a computer may sound strange, until you consider that literally millions of people have tapped the Society’s award-winning Go Botany website since it launched in 2012. So, this season, in addition to its field-based classes, the Society is offering its first three online courses: “Plants 101 (Introduction to the Green World)”; “Plants 102 (Deeper into the Green World)”; and “Designing with Native Plants.”

Created for a wide range of far-flung learners, these courses offer several ways for students to engage with instructors and each other—videos, discussion forums, quizzes, and more. Students also receive handouts, links to useful websites, TED Talks, and other inspiring information. And they still get to go outdoors: “Plants” 101 and 102 culminate with the opportunity for every student to take a field trip with a professional botanist. Students in “Designing with Natives” track the real-life installation of a public garden online and receive a list of recommended gardens to visit for design inspiration.

Taught by seasoned instructors Elizabeth Farnsworth and Anna Fialkoff, the courses also feature segments with other experts. These courses were developed and launched with support from the Institute of Museum and Library Services and a generous donor.

Register now for the next round of online courses, starting in September: [www.newenglandwild.org/programs](http://www.newenglandwild.org/programs).

Red columbine (Aquilegia canadensis)

Please contact our Philanthropy staff to support new course development: 508-877-7630 x 3507; development@newenglandwild.org.
Collecting Seed to Restore a Storm-ravaged Coast

Michael Piantedosi, New England Plant Conservation Program (NEPCoP) Coordinator
The 2015 field season began, literally, in a whirlwind.

One moment I was at Logan Airport, meeting the Society’s conservation director, Bill Brumback, and four interns. The next I was piloting a rented mini-van down I-95 in a blinding downpour, heading, I hoped, for North Carolina.

Our mission: To start an ambitious two-year, $2.3 million project to collect seeds of native plants to restore coastal plant communities damaged by Hurricane Sandy. Covering the coastline from Maine to Virginia, this is the first large-scale, coordinated seed-banking effort in the eastern United States. The Society and its partners, North Carolina Botanical Garden and Mid-Atlantic Regional Seed Bank (part of the New York City Department of Parks and Recreation), signed on to collect seed from fifty species of native, locally adapted plants in our respective parts of the coastline to restore all types of coastal habitat—from sub-tidal zones, dunes, and salt marshes to freshwater wetlands, forests, rivers, and streams. The project is funded by the Department of the Interior as part of a much larger initiative to restore federal lands and infrastructure damaged by the hurricane. It also expands the Bureau of Land Management’s largely western-focused Seeds of Success program to the eastern states. Until this project, restoration efforts in eastern states has had to rely primarily on plants and seed from other parts of the country.

We were driving because our connecting flight from Boston to New York had been rained out. We finally pulled into our hotel in Chapel Hill, just before dawn and cat-napped until it was time to appear at the nearby North Carolina Botanical Garden later that morning. There, in a classroom and outdoors, we would spend the week tuning up our knowledge of population genetics, plant taxonomy, and wild seed collecting.

Before we knew it, June had roared in, and the team was ready to fill bags with native seed. In that unusually late spring, however, the seeds were not quite ready for us. We used the time to plan our site visits and research each site. Earlier, we had compiled a list of fifty native species common to the restoration efforts of all three partners in the project. These plants share several characteristics that support what biologists call “habitat resiliency,” such as deep root systems that maintain soils and reduce erosion, abundant seed to sustain the population for several years, food for pollinators, and the ability to compete successfully with invasive species.

Right away, we encountered challenges. First, we would have to arrive at each site at precisely the right time, factoring in that a temperature change could cause seeds to dehisce—pop out of their husks or pods—a day or two earlier than anticipated. Originally, we had eight project sites. By late November, we had picked up two more, for a total of ten. In each case, the local project coordinator or site manager had filled out our online questionnaire, establishing the site’s eligibility and providing location, timeline, acreage, and species of interest, among other data.
Finally, we had to get landowners’ permission before gathering a single seed. Getting permission from state and federal agencies was easy, but in New England, where 96 percent of the land is privately owned, these were few, and we spent most of June locating and contacting landowners. (In the western states, where Seeds of Success was established, 45 percent of the land is federally owned.)

By July, we were back on the road, visiting sites hundreds of miles apart. During each visit, the interns and I met with the person in charge, and then we scoured the property, identifying all of the plants we could find—sometimes a lot, sometimes a few. We recorded each species, whether it was native or not, its reproductive stage, and the population size—all data we needed to assess when seeds would be ready to collect, and in what quantities. Because the timing for seed collection varied by species and location, we were constantly circling back to each site.

By the last week in September, we had labeled and dried our one-hundredth collection. To dry the seeds, we laid them out in large aluminum pans, which looked like an alien casserole buffet. Then we treated them for living pests. As seeds dried out and we removed the pests, we packaged and shipped them off to the Natural Resources Conservation Service’s Cape May Plant Materials Center in New Jersey to be cleaned and processed. By early October, we had bagged 130 collections—more than 300,000 seeds—from 20 sites.

Some of these places took our breath away with their natural beauty; others gave us a shocking picture of how ravaging a single storm can be; still others awed us with their resiliency. As an example of resiliency and beauty, the Rhode Island National Wildlife Refuge Complex in Charlestown and South Kingstown stands out. At this refuge and several other locations along Rhode Island’s forty-mile coast, the U.S. Fish & Wildlife Service is restoring eroded coastal salt marsh by depositing marsh sediment to build up a layer of soil in which to plant thousands of plugs grown by a local nursery from seeds we collected.

Similarly, our seed collections in Pittsfield, Massachusetts, our westernmost site, will help the state’s Department of Restoration restore an exposed floodplain on the East Branch of the Housatonic River. We also hope to provide seeds of native pollinator plants along a planned greenway there, which will reduce erosion, increase pollination among native plants, and establish food for native insects.

Needless to say, the four interns and I shared a lot of road time. The interns came to us from all over the country through the Conservation Land Management program at Chicago Botanic Garden, and their backgrounds, experience, and future aspirations varied widely. But we were united in the goal to protect critical habitats—and we had our share of adventures. In
field work, exposure to the elements is a given, but you never know what else will crop up. By the middle of our field season, we already had learned some key lessons. Number one: Always bring more seed-collection bags than you could ever possibly need. Two: Do not wear short pants in a salt marsh. (Hint: Mosquitoes.) Three: Check tide charts—or else be prepared for “team-building exercises” (that is, learning to swim in a tidal marsh and cutting your way through thorns with a pen-knife). Four: Never, ever look a territorial osprey in the eyes. Five: Watch out for (naked) sunbathers.

Despite, or maybe because of some unforgettable team-building exercises, we accomplished a vast amount of work in a relatively short time through persistence, flexibility, and working together. When we wrapped up the season at the end of November, we had completed 254 collections from more than 350,000 plants in 94 species, on 60 properties. The result: millions of viable seeds that will help maintain the diverse ecosystems of the New England coast—and, perhaps, provide a few more memorable learning opportunities for future generations.

Check http://www.newenglandwild.org/conserve/seed-gallery to see more photos.

Please contact the Philanthropy staff to help the Society match federal funding for year two: 508-877-7630 x 3502; development@newenglandwild.org.
Growing up on a Michigan farm, I loved to explore, and my parents let me freely wander the property to look at plants, animals, and rocks. As an adult, getting down on my hands and knees in the dirt to study the plants close-up only enhanced the fun of my very first field trips with New England Wild Flower Society. I was already a keen gardener, and involved with the Garden Club of America, so I knew the Society by its excellent reputation. But the vast store of interesting botanic data shared by the staff leading those walks was so impressive that I wanted to learn more, more, more! My new-formed appetite for knowledge about native plants felt boundless, and New England Wild Flower Society was the best place to satisfy my hunger.

Almost forty years ago, my local field trips with the Society quickly branched out to include programs across New England, and eventually throughout the United States and even Canada. I was inspired by the staff to learn all I could about native plants and to get more involved with the organization. I was delighted to be asked to serve as an Overseer and then as a Trustee, and spent many, many happy years on the Sanctuary Committee helping protect native plants on several different properties. When my late husband, Sturtevant, and I were making plans for the future stewardship of our 250-acre property in Lyman, New Hampshire, New England Wild Flower Society was the obvious choice. Who better to conserve all those special fern species? We did not purchase the property for its ferns, but visitors were often so captivated by them that they never made it to the back of the property to see the full landscape! I am thrilled when

In my golden years, I don’t get out in the field much, yet I still maintain a very close relationship with the Society. It is an important and stabilizing part of my life.
new generations of members and students visit the Hobbs Fern Sanctuary for botanic field trips, starting their explorations by looking down at the ground, just like I did.

In my golden, even diamond, years, I don’t get out in the field much, yet I still maintain a very close relationship with the Society. It is an important and stabilizing part of my life. It helps me feel grounded and also re-energized. Recently, I made a deliberate and thoughtful decision to set aside some funds and donate them to the Society now, rather than later. This way I enjoy being an active partner in helping the staff accomplish their conservation goals, and it warms my heart to see the positive results my gifts achieve. At this point in my life, I want to have as much fun protecting native plants as possible!

Hobbs Fern Sanctuary, Lyman, New Hampshire

Tucked between the Connecticut River and the White Mountains in northwest New Hampshire, this 260-acre sanctuary is a trove of biodiversity: Visitors can explore groves of beech, birch, and maple; rich sugar maple woods at the base of steep ledges; dense stands of balsam fir and red spruce; swamps of red maple and black ash; and meadow and shrub lands.

These distinct communities contain the sanctuary’s 500-plus native plant species, including more than 50 different ferns, clubmosses, and horsetails. In the moist woods, spring wildflowers abound—sharp-lobed hepatica, Canada violet, wild ginger, bloodroot, blue cohosh. These varied plant communities support an equally impressive mix of wildlife, notably moose, beaver, woodcocks, red-tail hawks, and several species of warbler. The secret to this richness lies in the land itself: The geology, topography, and hydrology range from low-lying wetlands to dry, steep slopes.

For at least 200 years, human use—farming and timber harvesting—also shaped this land. Its last private owners, Christina and Sturtevant Hobbs, recognized the property’s unique beauty and character and asked the Society to continue the conservation they had begun, donating it in 2004. Today, the surrounding area remains rural, and with no major roads nearby, the property offers not only a sanctuary for native plants, but a peaceful refuge for human beings.
Celebrating Your Support

In 1900, the founders of the Society for the Protection of Native Plants, which evolved into New England Wild Flower Society, had a compelling vision—to focus exclusively on protecting the region’s native flora. Their efforts foreshadowed our work today in conservation, horticulture, and education in all six New England states. As you read about our many accomplishments, please take a moment to be proud of your own support for this internationally renowned organization. Friends like you are at the heart of all our successes, and we are delighted to celebrate and publicly thank all of you!

**CONSERVATION CIRCLE AND LEADERSHIP GIFTS**

The total giving noted below for fiscal year 2015 reflects restricted and unrestricted gifts, membership dues, and pledges. The Conservation Circle especially honors individuals whose personal philanthropic support reached $1,000 or more. Many leadership gifts and grants from companies and foundations also had an extraordinary impact on the Society. 

+ denotes deceased donors

**$200,000 or more**

Hope Goddard Iselin Foundation

**$100,000—$199,999**

Anonymous  
Fidelity Charitable Gift Funds

**$25,000—$99,999**

Anonymous  
Christina T. Hobbs  
Litowitz Foundation, Inc.  
Massachusetts Cultural Council  
Michele H. and David R. Mittelman  
Elizabeth S. Paynter  
Jackie and Thomas E. Stone  
Martha Wallace and Ed Kane

**$10,000—$24,999**

Anonymous  
42 Real Estate LLC

**$5,000—$9,999**

Anonymous (2)  
Christopher R. and Carole M. Ely  
William L. Murphy and Claire M. Corcoran  
NH Charitable Foundation

**Schwab Charitable Fund**  
The Bromley Charitable Trust  
The Estate of Margaret Moody +  
U.S. Charitable Gift Trust

**JOHN BARBER AND JULIA BARBER**

Visiting Garden in the Woods, John Barber of Ohio and his daughter Julia pay homage to the legacy of their forebearer, Homer C. Lucas, for whom our administration building is named.
Top: Ken Nimblett and Rusty Miller, with Executive Director Debbi Edelstein, celebrate at the 2015 Art and Nature event for our Conservation Circle.

Bottom: Trustee Jackie Stone learning how to clean rare seed for the Society’s seed bank at the 2015 Behind-the-Scenes tour for the Conservation Circle.

Geri and Douglas D. Payne
The Swope Family
Caroline Blanton Thayer 1990 Charitable Trust
Candace J. Young

$1,000–$4,999
Anonymous (3)
Daniel S. and Louise F. Ahearn
John A. Alic
Annemarie Altman and David Cook
Molly and John E. Beard
Alan and Michele Bembenek
Bose Corporation
Kim and Lawrence Buell
Rick and Nonnie Burnes
Kimberly and Dennis Burns
Ann R. and Peter B. Coffin
David L. and Rebecca E. Conant
Andrew Conwell
Judith H. Cook
Paul Cook+
Dr. William W. and Martha P. Cooper
Judith A. Cope
Helen and Miner Crary
Stuart L. Cummings
Martha R. Davis
Ruah Donnelly and
Steven E. Dinkelaker
Pamela B. and David W. Durrant
Suzanne W. and Alan J. Dworsky
Ralph C. Eagle, Jr.
Debbi Edelstein
Ellis Charitable Foundation
Elizabeth S. and Frederic A. Eustis
Lisa and George B. Foote
Foundation for MetroWest
Framingham Garden Club, Inc.
Janet W. and John P. Ganson
Sarah Garland-Hoch and Roland Hoch
Goldman, Sachs & Co.
Mary Griffin and Andy O’Neill
Jane C. Hallowell
Becky and David E. Hamlin
Rachael and Barry Herring
Connie and Barry Hershey
Thelma K. and John H. Hewitt
Highland Street Foundation
Daniel Hildreth
Dr. Barbara M. and Robert A. Keller
Ann B. Kirk
Marilyn K. Kucharski
Peggy Lachs
Marta Jo Lawrence
Lucinda H. and David S. Lee
David L. Lindsay
Brian K. and Anne S. Mazar
Phoebe and Steven McCarthy
Virginia McIntyre and John Stevens
Deirdre Menoyo
Henry S. Miller, Jr. and Ken Nimblett
Anthony Mirenda and Tracey Cornogg
Martha S. and Todd Moore
Sandra O. Moose
Noanett Garden Club
Marcela and Paul Noonan
Carolyn M. and Robert T. Osteen
Overhills Foundation
Dr. Leroy M. and Dr. Winifred B. Parker
Richard B. and Beverly S. Peiser
Karen D. and Matthew V. Pierce
Gloria J. and Roger P. Plourde
Bonnie B. Potter
Barbara F. and Frederick M. Pryor
George and Nancy Putnam
Bob and Amy Rand
Rare Plant Group, G.C.A.
Pamela P. and Griffith L. Resor
Peter M. Richards
Sandra S. Rodgers Estate
Johanna Schmitt
Bruce M. and Sarah T. Schwaegler
Barbara and Edward Scolnick
Barbara A. Selvitella and Russel P. Selvitella
Kathleen E. and Robert C. Shamberger
Wendy Shattuck and Samuel Plimpton
Mark Smith and John O’Keefe
Anita E. Springer and James P. Lerner

Top: Beau Coash and Dinny McIntyre enjoy a “Conservation Conversation” at the reception generously hosted by Dinny and her husband, John Stevens.

Bottom (L to R): Trustee Pam Resor, member Peggy Brace, Overseer Marian Thornton, and guest Linda Merwin savoring their twilight Conservation Conservation
Overseer Bonnie Potter and author Ted Elliman celebrating the launch of *Wildflowers of New England* with the generous donors whose support made this exciting new publication possible.

John Springfield  
The Echo Charitable Foundation  
The Robert Treat Paine Association  
The Sustainability Group  
Thomas S. and Karen Thornhill  
Robert H. Traylor  
Charity and Thomas Tremblay  
Emily Wade  
Tony and Lorraine A. Wain  
Carolyn and Sturtevant Waterman  
Hartley D. and Benson Webster  
Ellen West and George M. Lovejoy, Jr.  
Gray H. and Paul M. Wexelblat  
Jim and Betty Wickis  
Wilma K. Wilensky  
Robin E. Wilkerson and Steve Atlas  
Tracey Willmott  
Richard S. Wood  
Deborah Woodcock  
Patty Wylde

$500–$999  
Anonymous (3)  
William S. Andreas  
Beacon Hill Garden Club  
Nancy Benchoff  
Peter M. and Elaine Brem  
Aviva and Douglas Brooks  
Frederick and Judy Buechner  
Hilary and Phil Burling  
Jonathan J. Bush and Amanda Dean  
Rebecca Cannon and Scott Miller  
Mary Ann Carey  
Combined Jewish Philanthropies  
Community Foundation of Western MA  
Kathleen Connolly  
Anne L. Cross  
Grace M. Donnelly  
Carla Fenner  
Lisa Fiore

Elaine W. Fiske and Philip L. Ladd  
Joyce M. Greenleaf  
Dena and G. F. Hardymon  
M. Luisa B. Hunnewell  
Yutaka and Sally T. Ishizaka  
Mike Johnson  
Richard Junghans  
Althea Kaemmer  
Susan M. and Christopher A. Klem  
Mary A. Lambert and David Litwack  
Emily L. Lewis  
Faye H. and David P. Lieb  
Deborah and Bob Lievens  
Massachusetts Master Gardener Association  
Elizabeth A. and Bernard Meyer  
Deborah Nomers  
Elisabeth A. Raleigh  
Wickie Rowland  
Pamela S. and Michael Ryan  
Amy and John Saar  
Betty and Frank Stanley  
Anne Symchych  
Polly Townsend  
Cornelia Trubey  
Wellesley Garden Study Group  
Priscilla H. Williams  
Dena G. Willmore  
Alan and Charlotte B. Wilson  
Kathy H. Wrean and Hugh W. Chandler  
Susan and Paul Young  
Margaret W. and Charles A. Ziering

**SUPPORTER MEMBERS**

We greatly appreciate all our members, whose annual dues helped underwrite the Society’s mission in 2015. We thank you all, but given limited space, list only those at the Supporter level here.

Anonymous (3)  
Ellen Abdow  
Walter L. Adamski and Beverlee A. Adamski  
Michael Altermann
Honorary Trustees Christina Hobbs, Bev Ryburn, and Thelma Hewitt enjoy a special tour of Garden in the Woods with Overseer Carrie Waterman, Executive Director Debbi Edelstein, and Director of Horticulture Mark Richardson.
The Society honored Ervina Hamilton (L) and Chris Gradjan with the 2015 Service to the Society Award and presented them with Life Memberships.

**LIFE MEMBERS**
These dedicated individuals have chosen to play a long-term role in the preservation of our region’s native flora by becoming life members.

Anonymous
Judy A. Artley and Charles T. Moses
Nancy H. August
Patricia Callan and Chuck Crafts
Martha F. and Robert W. Carlson
John S. and Jane Chatfield
Terry A. Chvisuk
Edward H. and Sandy Coburn
Frederick and Jeanine Coburn
Robert S. Coburn
Virginia and Jay Coburn

John D. Constable
Judith H. Cook
Paul Cook+
David L. DeKing
Ann Dinsmore and Richard Nemrow
Elizabeth Dudley
Elizabeth S. and Frederic A. Eustis
Janet Fillion and Richard Laine
Mary F. and Joseph Fiore
Joanne C. and Lionel L. Fray
Anne and Walter J. Gamble
Nancy Goodman and Mike Kotarba
Christine M. Gradjan
Marjorie D. and Nicholas P. Greville
T. C. Haftenreffer
Jane C. Hallowell
Ervina Hamilton
Dena and G.F. Hardymon
Allyson Hayward
Thelma K. and John H. Hewitt
Robert C. Hooper
Kristina Niovi Jones and Peter Hecht
Larry Lee Jones

Kathleen A. Klein
Catherine Z. Land
David R. Longland
Ellen West and George M. Lovejoy, Jr.
Jane Lyman
Eugene I. Majerowicz
Ellen B. and Duncan McFarland
Michele H. and David R. Mittelman
Monadnock Garden Club
Erhart Muller+
Sally McGuire Muspratt
Beverly Myers
May H. Pierce
Peggy and Hollis Plimpton
E. M. Poss
Patricia Pratt
Christine A. Psathas and Robert E. Shabot
Harriet D. Purcell
Paul John Rich
Chandler S. Robbins

Johanna Ross
Barbara V. and George R. Rowland
David B. Rundle and Catherine M. Huntley
Beverly H. Ryburn
Aire-Maija Schwann
Catherine and George G. Schwenk
Robin R. Shield and John Tariot
William and Hatsy Shields
Mary M. Smithline
Gwen Stauffer
Galen L. and Anne Stone
Edward S. Valentine
Emily Wade
Nancy L. Weiss
Louise Westcott
Weston Garden Club
Cheryl K. Wilfong
Robin E. Wilkerson and Steve Atlas
Patty Wylde
Margaret F. and T. C. Price
Zimmerman
TRILLIUM SOCIETY
The following generous friends have included the Society in their estate plans, to help ensure our future ability to conserve native plants and their habitats.

Elizabeth L. Aghajanian
Annemarie Altman and David Cook
Joyce H. Bisson
Lalor Burdick
Frances H. Clark
Paul Cook
Stuart L. Cummings
Ruah Donnelly
Peter V. K. Doyle and Ellen Clancy
Christopher R. Ely
Nancy Goodman
George C. and Diantha C. Harrington
Patti Laier
Ann R. Lemmon
Deirdre Menoyo
Carole M. Merrifield
Bettina L. Messana
Carolyn M. Osteen
Jessie B. Panek
Geri and Douglas D. Payne
Karen D. and Matthew V. Pierce
Barbara F. Pryor
Beverly H. Ryburn
Dori Smith
Anita E. Springer
Natalie Starr
Jackie and Thomas E. Stone
Mary Ann Streeter
Leslie Turek
Martha Wallace
Cheryl K. Wilfong
Elizabeth H. Wright
Patty Wylde

TRIBUTES
In 2015 we received honoraria or memorial donations in tribute to the following friends, colleagues, mentors, and loved ones.

In Honor Of
Nancy H. August
Bonnie and Bob Bernstein
Elizabeth Farnsworth
Charlie Foster
Linda C. Goldman
Marjorie D. Greville
Natalie Illsley
Dan Jaffe
Dr. Barbara M. Keller
Henry Kesner and Steph Zabel
Cayte McDonough
Deirdre Menoyo
Daphne B. Prout
Peter Rogers and Paige Carter
Norma Volante
Carolyn D. Waterman
Gray H. and Paul Wexelblat
Priscilla H. Williams
Tracey E. Willmott

In Memory Of
Dorothy M. Andrews
Bob August
Jane C. Bradley
Lance Carleen
Mr. and Mrs. Conwell
Dr. Shirley G. Cross
Marjorie Fallows
Rose Fuechtmann
Robin Furumoto
Cecilie Godderidge
Robert Jost
Tony Pelletier
Lois M. Redden
Dr. Robert N. Reynolds
Eleanor N. Scott
Sara Silverstein
Catherine Speller
Janet K. Springfield
Kathryn Stewart
Dorothy D. Thorndike
Edna Tighe
Eugenie Timm
Sarah and Richard Wheeler
RoseMary Whitcome

MATCHING GIFT COMPANIES
We extend special thanks to the following businesses for their generous support in 2015.

Apple Matching Gifts Program
Bank of America Matching Gifts
Citizens Charitable Foundation
Coca-Cola Foundation
FM Global Foundation
GE Foundation
Goldman, Sachs & Co. Matching Gift Program
IBM Corporation Matching Gifts Program
Mass Mutual
National Grid
Pfizer Foundation Matching Gift Program
Tripadvisor LLC
Unum Provident Corporation
Verizon Foundation Matching Gifts Program

GIFTS IN-KIND
Appalachian Mountain Club
Boston Red Sox
Linda C. Bowman
Camp Birch Hill
Elite Island Resorts
Adam Ganson
Julia Homer
Dori Smith
Southwest Airlines
George Swift
Trader Joe’s
Whole Foods
MESSAGE FROM THE TREASURER

In 2015 the Society moved several key initiatives forward and ended the year well-positioned for continued outstanding programmatic success. The “State of the Plants” report garnered national attention, and the first online education programs received excellent reviews. The first year of a federally funded project to collect seeds for ecological restoration of coastal areas damaged by Hurricane Sandy exceeded its goals. In addition, the Society secured a second $500,000 commitment to our initiative to collect and bank seeds of the region’s rare and endangered plants.

The Society also undertook funded capital projects. A new deer exclusion fence and front gate for Garden in the Woods protect the 45-acre property and present a more welcoming face to visitors and the neighborhood. Staff also reconfigured the Curtis Woodland Garden and installed nearly 22,000 new plants, most of which were grown at our Nasami Farm nursery; an equal amount will be planted in 2016. In Vermont, our Eshqua Bog sanctuary, which the Society co-owns with The Nature Conservancy, now has the first accessible boardwalk in the state.

The endowment, managed for 17 years by our Investment Committee, reflected the year’s weak market performance; however, the long-term return slightly exceeds the benchmarks. The investment portfolio was $5,573,791 as of December 31, 2015.

Thanks to the hard work of our Board, dedicated staff, committed volunteers, and the generous gifts of our many members and supporters, the Society had a successful year in 2015.

Sincerely,

Janet Ganson

Fiscal Year 2015 Operating Results

<table>
<thead>
<tr>
<th>Income</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grants and Contributions</td>
<td>$1,773,301</td>
</tr>
<tr>
<td>Program Income</td>
<td>$633,911</td>
</tr>
<tr>
<td>Investment Income</td>
<td>$220,057</td>
</tr>
<tr>
<td>Membership Dues</td>
<td>$235,735</td>
</tr>
<tr>
<td><strong>Total Income</strong></td>
<td><strong>$2,862,752</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Expenses</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Services</td>
<td></td>
</tr>
<tr>
<td>Conservation &amp; Sanctuaries</td>
<td>$848,496</td>
</tr>
<tr>
<td>Horticulture</td>
<td>$563,405</td>
</tr>
<tr>
<td>Education</td>
<td>$275,191</td>
</tr>
<tr>
<td>Member Services</td>
<td>$129,484</td>
</tr>
<tr>
<td>Retail Shops</td>
<td>$206,139</td>
</tr>
<tr>
<td><strong>Total Program Services</strong></td>
<td><strong>$2,022,715</strong></td>
</tr>
</tbody>
</table>

| Support Services        | Amount     |
| Fundraising             | $232,601   |
| **Total Support Services**| **$694,833** |

| **Total Expenses**      | **$2,717,548** |
| **Operating Surplus (Deficit)** | **$145,204** |

Notes
- Operating Surplus (Deficit) includes $303,201 of noncash depreciation of fixed assets and the amortization of the development of the Go Botany website.
- The Society’s net asset value is $10,613,449 as of December 31, 2015.
- A complete copy of the audited financial statements is available upon request by emailing twillmott@newenglandwild.org.
Join us for Lunch!
Lunch is served Monday through Saturday 11:30 til 2:30pm.

Join us for Dinner!
Dinner is served Monday through Saturday beginning at 5pm. Reservations are suggested. Sunday Dinner is served all day, beginning at 12 noon with the last seating at 7:30pm.

Join us on the Patio!
Season Opening Memorial Day Weekend
The Garden Patio is open daily at 11:30am and is available for seating throughout the day. Catch a light meal after work, or drop by for a refreshing seasonal drink.

72 Wayside Inn Road · Sudbury, MA 01776
978.443-1776 · 800.339-1776 · www.wayslde.org
THE GROWING SEASON IS HERE!

Sign up now for one of our 120-plus programs, events, and field trips. Check out these highlights and visit www.newenglandwild.org/learn/programs to see the full line-up and register.

Online Courses

Enroll in one of our three online courses:

- **Plants 101** (begins 9/12)
- **Plants 102** (begins 10/17)
- **How to Design Your Garden Using Native Plants** (11/14–4/02)

Seats fill quickly, so sign-up now!

In the Field

**Take a field trip:** Explore bogs, meadows, and forests to observe unusual native plants on one of our 17-plus guided excursions throughout New England.

Family Programs

**Story Time and Musical Play at Garden in the Woods:** Children explore the outdoors through story and song as well as nature walks and games. Two Saturdays a month through September. Free with Garden admission!

**Family Hikes:** Join our naturalists for a Saturday morning family adventure in fascinating surroundings.

Special Event

**Plants and Pints:** Celebrate the solstice at Garden in the Woods on Saturday, June 18, 5–8 p.m. Welcome summer with local beverages, music, and food! Light the ceremonial Ball of Fire! For celebrants 21 or older.
Reznicek’s sedge
(Carex reznicekii)

This small forest and woodland sedge of the eastern United States belongs to a group of early flowering sedges. What is remarkable about it is that until 2006, it went undetected in one of the most heavily botanized regions of the world. More remarkable, the species is not even rare in the East. Botanists had collected it on numerous occasions; they simply had identified it as something else—often as parasol sedge (Carex umbellata) or black-edged sedge (C. nigromarginata).

New York botanist David Werier was the first to recognize Reznicek’s sedge as a distinct species. After encountering a few wild populations that he couldn’t identify, Werier realized that this was a plant that had managed to remain unnamed—and therefore, according to the ways of taxonomy, unknown. Over the course of the next few years, Werier carried out substantial research, both in the field and in various herbaria, to establish that no one had previously identified the species. Finally, he decided to name the sedge in honor of Anton Reznicek, one of North America’s foremost experts in the genus Carex.

During his research, Werier found a specimen at the Steere Herbarium at the New York Botanical Garden that had been collected from Rhode Island in 1877, the only known collection of Reznicek’s sedge from New England. However, the specimen’s label did not identify the specific location. Several factors suggested that southern New England was the northern end of this species’ range and likely would be growing with other species that share a southern affinity. So, I recommended that we look on West Rock in New Haven, Connecticut—and there we found a small population. Until botanists conduct more field work, this remains the region’s only known extant population of Reznicek’s sedge.

—Arthur Haines, Research Botanist, Author, Flora Novae Angliae

Read the full story of how Arthur Haines and David Werier tracked down this unnamed plant at www.newenglandwild.org/blog. We rely on your generous support to keep our extraordinary botanists in the field.