NATĪVE PLANT NEWS

PAGE 04

Rare Species Get a Boost from Conservation Volunteers

FOR MEMBERS AND SUPPORTERS OF NATIVE PLANT TRUST

SPRING/SUMMER 2020

p. 04

Spring/Summer 2020 contents

p. 14

The Day After

As we slowly emerge from two months of crisis, we're entering an era that does not yet have a story arc or a name. We want to walk in sunshine and put aside the disbelief and grief that have haunted our days. But we need to mobilize that sorrow, and use it to write the history of tomorrow for life on this planet.

DEBBI EDELSTEIN
Executive Director

Biologists, epidemiologists, and climate scientists have told us for decades that our relationship to the natural world endangers us. Land use shifts, habitat destruction, and climate change are creating conditions favorable for viruses to jump from animals to humans. And then there are the plagues of locusts, dust bowls, fires, and floods threatening our food systems, homes, and economies.

Maybe the silver lining to the pandemic is that many people are literally seeing nature differently—as their walk in the woods becomes lessons for their kids, wildlife fearlessly ventures into town centers, and beautiful mountains emerge from their smog shroud for the first time in our lives. Maybe people will remember the joy and solace of nature long enough to change their behavior and to push for policies that alter our current trajectory.

Then, perhaps, we'll have an era defined not by its tragedies, but by its turnaround—embracing stewardship of society and nature to move us all to higher ground.

Native Plant Trust

VOLUME 6 | NO. 2

NATIVE PLANT NEWS

DESIGN
Moth Design
Rachel Wolff Lander

EDITORIAL
Jane Roy Brown;
jrbrown@NativePlantTrust.org

COVER
American climbing fern (*Lygodium palmatum*) © Uli Lorimer

Native Plant News is published by Native Plant Trust, an independent, nonprofit, member-supported organization. Subscriptions are included in membership dues. For information, contact: membership@NativePlantTrust.org.

IN BRIEF

Report to Outline Conservation Priorities in a Changing Climate

—Michael Piantedosi, Director of Conservation

This fall, Native Plant Trust will release a ground-breaking report on plant diversity in New England, developed in collaboration with The Nature Conservancy's (TNC) Eastern Resource Office. We approached TNC two years ago to see if together we could assess what it would take for the region to meet targets in the Global Strategy for Plant Conservation (part of the United Nations' Convention on Biological Diversity), including having 75 percent of the most important areas for plant diversity in each ecological region effectively protected and managed.

The team quickly decided that the assessment had to examine plant diversity over time in a landscape altered by a changing climate, in which individual species and entire habitats will migrate, adapt, or die. To enable flora and fauna alike to migrate and adapt, we need to identify land areas where these shifts can occur and prioritize their protection as conservation areas. The new report seeks to outline these priorities and measurements for effective plant conservation at both the species and habitat scales.

Building on the 30 years of research that also informed our *State of New England's Native Plants* report (2015) and data modeling by TNC, the plant diversity report seeks to address areas of high and low resiliency where conservation protections are in place and where they are not. Within these areas, we present conservation actions for habitats, common plant communities, and rare plants. The habitats discussed in this report rely on functional ecological systems, which in the most fundamental way are reliant on plant diversity. Our findings indicate that to maintain the biodiversity of New England in a rapidly changing climate, we must more proportionally secure the diversity of habitats and plant communities across the region and employ both ex situ conservation (such as seed banking) and improved in situ protections.

To enable flora and fauna alike to migrate and adapt, we need to identify land areas where these shifts can occur.

01

At Sturgis Sanctuary, Four New Footbridges Await Visitors

—Fred (Bud) Sechler, Jr., Ecological Programs Coordinator

Visitors to the rolling landscape of Sturgis Sanctuary, in Vassalboro, Maine, can now easily cross a steep-walled ravine and three streams on new footbridges completed last fall by members of the Maine Conservation Corps. A field crew of four camped at a nearby state campground and worked tirelessly for five days a week to complete the bridges by mid-October. The footbridges will enable everyone to more easily navigate the trails to enjoy the spring ephemeral wildflowers for which Sturgis is known.

01 Maine Conservation Corps members working at Sturgis Sanctuary
Photo: Fred Sechler © Native Plant Trust

At Garden in the Woods, Pruning, Growing, Counting Plants—and Days

—Uli Lorimer, Director of Horticulture

One of the benefits of a mild winter has been the ability to get more done in the Garden. The staff has been busy pruning shrubs and trees, working on the pathways, and planning for the growing season. The site of the former Curtis Cottage was planted with *Trillium*, *Carex*, and *Actaea* species, plus *Sanguinaria canadensis*, last summer, and the plantings are beginning to fill in. We are planning the final touches this spring, with the addition of trilliums and other spring ephemerals, which we will transplant from our stock beds. As part of the ongoing evaluation of our plant collection, we also will be conducting surveys and inventories of the gardens, with emphasis on trilliums, rhododendrons, and cypripediums. The Family Activity Area has also received a lot of attention during the winter and will be ready for young visitors seeking to explore and connect with nature. After the delay caused by the coronavirus, we are eager to welcome visitors to Garden in the Woods.

02

New Projects Position Programs for Sustained Success

—Courtney Allen, Director of Public Programs

Despite unusual times, Public Programs launched three significant projects this spring. First, we are collaborating with the Garden Club Federation of Massachusetts on a two-year native plant design challenge. This entails providing special access to our Designing with Native Plants online course and a selection of native plants for order, both at a discount. These resources will serve the federation's 175 clubs and their 11,000 members. In turn, using these resources, the clubs will create native plant gardens in public places. This collaboration is designed as a model that can be replicated in other New England states.

Next, to follow up on the forthcoming report on plant diversity from Native Plant Trust and The Nature Conservancy (TNC), Public Programs is partnering with TNC to lead a day-long, virtual symposium in the fall, examining goals and strategies for conserving plant diversity. Using multiple interactive formats, we will address what the new data analysis says about the status of plant diversity, how it guides priorities for plant conservation, and what approaches can best meet conservation goals.

Finally, we updated our Native Plant Studies Certificate curriculum in 2020. The new curriculum sets a clear path for students to build on fundamentals in engaging ways, while maintaining program flexibility and increasing the frequency of offerings. The new curriculum also guides students to create products over the course of the certificate, so they may build final portfolios to demonstrate their qualifications. For the first time we are also offering the Basic Certificate Foundations core courses online.

03

Public Programs Challenge Match

"I URGE YOU TO TAKE ADVANTAGE OF THIS MATCH TO SUPPORT THE UNIQUE AND INNOVATIVE PUBLIC PROGRAMS CREATED BY NATIVE PLANT TRUST. TOGETHER, WE CAN CONTINUE TO LEAD THE WAY FORWARD FOR NATIVE PLANT EDUCATION IN NEW ENGLAND."

—Anonymous matching donor

Before the COVID-19 crisis, an anonymous donor offered to match $100,000 in donations to support Native Plant Trust's public programs, and we launched the Public Programs Challenge Match early this spring. During the pandemic, people are finding solace in connecting with nature, and Native Plant Trust is the resource people are turning to at this critical time. Please help us meet this need: Donate now to our Public Programs Challenge Match and double your gift.

To donate, go to www.NativePlantTrust.org/fundprograms, email gifts@NativePlantTrust.org, or call our Philanthropy Department at 508-877-7630 x3802

02 Blue cohosh (*Caulophyllum giganteum*)
Photo: © Uli Lorimer

03 Highbush-cranberry (*Viburnum opulus*)
Photo: Dan Jaffe © Native Plant Trust

American climbing fern (*Lygodium palmatum*), © Uli Lorimer

Take Only Data, Leave Only Footprints

How Plant Conservation Volunteers Help Shape the Future of Rare Species

—Jane Roy Brown, Writer-Editor

"Watch out—this is tick heaven," warns Nancy Goodman, picking her way along a wet trail in a western Massachusetts forest. Old white pines, hemlocks, and oaks tower trailside, and last year's pale, beige beech leaves, still tethered to their branches, clatter in the light breeze.

Goodman, a Plant Conservation Volunteer (PCV) since 1999, once searched for plants in as many as four states a season. Lately, she focuses on an area within a few hours' drive of her home, in Hadley, MA. This spring she has assigned herself surveys for eight rare species. Today's target is a population of American climbing fern (*Lygodium palmatum*) in a power-line corridor that runs through the fern's favored moist environment. Such field

(Top) Collecting seed from maritime marsh-elder (*Iva frutescens*), which is rare in Maine and New Hampshire. (Bottom) PCVs with Senior Research Botanist Arthur Haines on a field trip in Maine. Photos: © Native Plant Trust

searches, or botanical surveys, document the status of rare plant populations all over New England, confirming whether or not they still exist, and if so, whether they're thriving or declining.

PCVs make up the citizen scientist arm of the New England Plant Conservation Program (NEPCoP), the nation's first regional conservation network. Both were also founded in the early 1990s by Native Plant Trust. NEPCoP members are the state botanists and other professional plant scientists from agencies and private organizations across New England. With generally only one state botanist per state, they could not possibly monitor and collect data each season on the hundreds of rare species for which they are responsible—many of which grow in remote, sometimes treacherous backcountry terrain. The hope was that training field volunteers would help fill the gap

"You don't know how populations are doing unless you monitor them, and you need to have the latest information to decide whether or not to manage them," says Bill Brumback, Director of Conservation Emeritus, who organized NEPCoP and then oversaw the inception of the PCV program. (He credits former staff member Frances Clark for coming up with the PCV concept.)

By "manage," Brumback means taking measures to maintain the population on the site—such as preserving conditions the plant favors, thwarting the encroachment of invasive species, and restoring populations—or even moving the plants, a controversial strategy known as assisted migration, which is rising to the fore in a warming climate. Such decisions rest on a sort of botanical triage, governed by practical considerations that Brumback ticks off: "Can you manage for the factors threatening the population? Does it make sense to put long-term effort into this? Is the population worth managing? What's going to happen to the species as a whole throughout the region? If we need to introduce populations to other sites, where would those be? Does it make more sense to just collect and bank the seed?"

Answering these questions requires accurate data, including up-to-date locations, population numbers, and threat information. When the PCV program was on the drawing board, some NEPCoP members, including Brumback himself, wondered whether citizen scientists would be able to gather

reliable data and feared that they would reveal the locations of rare plants.

But a pilot program, in Massachusetts, proved successful, and soon thereafter PCVs launched in other states. (Several farther-flung institutions have also emulated facets of the PCV program, in their citizen science projects, including Rare Care at the University of Washington Botanic Garden, Plants of Concern at Northwestern University, BudBurst at Chicago Botanic Garden, Minnesota Landscape Arboretum, and North American Orchid Conservation Center at the Smithsonian.)

"PCVs do some of the work we don't have the time or resources to do, so they are a great benefit," says Peter Bowman, who monitors rare and endangered plants for the state of New Hampshire's Natural Heritage program. "Every year we receive a huge batch of information—more than 50 updates on rare plant populations—so that we have the most current information. The data they bring in could prompt a decision to move a species' status—from threatened to endangered, for example—so accurate documentation is crucial."

Vermont Fish & Wildlife Department's assistant botanist, Aaron Marcus—a former Herbert J. and Esther M. Atkinson Conservation intern with Native Plant Trust—has overseen PCVs for the past 12 years "I can safely say that these volunteers collect some of the most detailed and high-quality data, because they have the time to gather that detail. They're not paid by the hour."

Karro Frost, plant restoration biologist and conservation planning botanist for the Massachusetts Division of Fisheries and Wildlife, says that volume also counts. "The number of records we get in from PCVs is huge. It's especially helpful if they can locate more than one species during the search and take time to see what else is around."

While some would find the search for rare plants in the wild frustrating, grueling, or even boring, for Goodman and her approximately 340 active counterparts in all six New England states, the hunt is sheer adventure—mosquitoes, ticks, and all. "I love identifying the plants," Goodman says.

"It's a treasure hunt," says Barbara Grunden, another veteran PCV, who lives in Falmouth, ME. For decades, she and her husband, Charlie, have driven all over Maine's blue highways, and sometimes other states', in pursuit of rare plants. Their efforts earned them Native Plant Trust's Volunteer Service Award, in 2017. These days they're sticking to Maine, although it is still almost equal in area to all five other New England states. This year Barbara signed up for 18 species, including ginseng and several rare ferns.

"A few PCVs are just interested in particular plants, like orchids," she says. "I'll sign up for anything, even a sedge or a grass"—genera in which differentiating species can require a microscope. Her governing principle is whether she can physically do the terrain. "A lady doesn't disclose her age," she says, although she reveals that her husband's is 88. "Let's just say I won't be doing any alpine surveys this year."

"...these volunteers collect some of the most detailed and high-quality data, because they have the time to gather that detail. They're not paid by the hour."

02

01

"Looking for rare plants is such an exciting thing to do," says Kate Kruesi, now in her fifth year as a PCV, in Burlington, VT. "What will you find? It's the thrill of discovery."

After retiring from managing a veterinary practice, Kruesi took the training required for all PCVs. This season, she signed up for more than 30 surveys. Each requires locating the plant and filling out a form with detailed data, including photos and precise coordinates. "I love doing surveys on the Lake Champlain islands," says Kruesi, who owns a GPS unit for her plant pursuits. This year she will also be combing Mt. Equinox, in Manchester, for a cluster of rare species. "I can survey several of them in one trip," she says. "The state botanists and the flora advisory group consider factors like that when assigning species to us."

Both entities, which flow from NEPCoP, determine which plants make the state lists for PCV surveys. In early spring, Native Plant Trust Botanical Coordinator Micah Jasny travels to each state to train new volunteers and review the lists of rare species up for survey. PCVs choose which species to survey. Jasny and interns then contact hundreds of landowners—private individuals, land trusts, and government agencies—to request permission to visit each site. "Last year volunteers signed up for 1,200 surveys, and I received between 700-800 responses from landowners," Jasny says. "I try to include multiple species per survey to avoid repeatedly bothering landowners." In each state, a PCV takes the lead to ensure that all the assigned surveys get done and all the forms are properly completed.

Jasny and interns contact hundreds of landowners—private individuals, land trusts, and government agencies—to request permission to visit each site.

Based on their skills and interests, PCVs can also choose seed collection and/or rare plant management (such as cutting back successional plants or invasive species). PCV George Kocur, a retired software engineer, is developing a more robust database to manage the voluminous plant records and more efficiently capture data from the PCVs.

Next to plant surveys, seed collection, or *ex situ* conservation, attracts the largest cadre of devotees, says Native Plant Trust Director of Conservation Michael Piantedosi. "PCVs have been a big force in adding to the our regional seed bank." says Piantedosi. "Bill Brumback foresaw that possibility, and he applied the collecting protocols from both the Center for Plant Conservation, based in North America, and the Royal Botanic Gardens, Kew Millennium Seed Bank Partnership, a global initiative based in the U.K. in which Native Plant Trust participates," Piantedosi says. "The protocols limit collecting to 10 percent of seed per plantand a total of 10 percent of seed from a given population, ensuring that we don't harm these plant communities."

Over-collection, not of seeds but of entire plant populations, is one reason many formerly common plants became rare. Slogging along the wet trail in western Massachusetts, Goodman recounts an example: American climbing fern, the plant she's surveying today, is rare in New England because in the 1870s, people rampantly collected it for Christmas decorations. She shakes her head.

Entering the power-line corridor, Goodman strides directly to a patch she spots among an overgrowth of dried grasses, despite its crispy winter foliage. "There you are," she says, pulling aside some grass. "Wow, you're doing great."

01 Director of Conservation Michael Piantedosi with PCVs on a New Hampshire field trip
Photo: Micah Jasny © Native Plant Trust

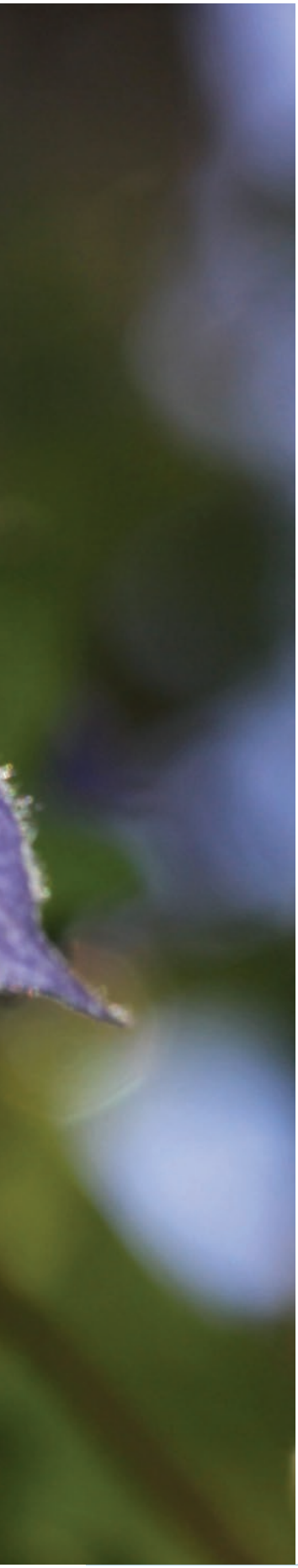
02 Appalachian barren-strawberry (*Geum fragarioides*), rare in New England, is among the species PCVs will survey this year.
Photo: © Native Plant Trust

WANT TO BECOME A PCV?

To apply, visit www.nativeplanttrust.org, then go to Conserving Native Plants, Plant Conservation Volunteers. Or contact Botanical Coordinator Micah Jasny: mjasny@NativePlantTrust.org, or 508-877-7630 x 3204.

03 Another rare species on PCV survey lists: Violet wood sorrel (*Oxalis violacea*)
Photo: Dan Jaffe © Native Plant Trust

01 Purple virgin's bower (*Clematis virginiana*).
Photo: © Andrey Zharkikh



Onward, Upward, and Overlooked

New England's Native Climbers

—Neela de Zoysa

Mention "native New England climbers," even among plant enthusiasts, and brace for silence.

Most of us hear plenty about pesky invasive climbers like Asian bittersweet (*Celastrus orbiculatus*). But native climbers—an overarching term that includes vines (herbaceous climbing plants) and lianas (woody ones)—often are unfamiliar to otherwise knowledgeable gardeners and naturalists.

For example, because climbers don't invest in producing woody tissue that helps a plant stand upright and instead require other plants for support, they are structural parasites. As it turns out, much of the world shares our dearth of knowledge about these fascinating plants, although there has been a recent surge of research on climbers in the tropics, where they account for about 10 percent of the flora.

Native climbers make up only about 2 percent of the New England flora, but that small percentage breaks out into about 40 taxa across all major plant groups. Another 55 or so nonnative climbing species are also present here, of which 15 are designated as invasive and others flagged as potentially so. The populations of some species are increasing as changing conditions favor their growth, particularly higher levels of carbon dioxide, warming temperatures, and more cleared land. Most vines and lianas thrive along forest edges, or they ascend into the trees to seek the sunlight. As human activity fragments forests, native climbers adapted to edge habitats have proliferated exponentially, some to the point of becoming a nuisance.

02

Although many if not most of these plants provide valuable wildlife habitat, their rampant proliferation can upset the delicate balance of the ecosystem, especially by choking out other plant species.

One such native, climbing bindweed (*Fallopia scandens*) is considered a weed in Connecticut. Other prolific native climbers include the perennials Virginia creeper (*Parthenocissus quinquefolia*), fox grape (*Vitis labrusca*), and summer grape (*V. aest-ivalis*). Although the grapes, in particular, provide critical food for more than 80 species of birds on their long migratory flights, and mammals including bears building fat reserves for hibernation, their massed tangles can smother other native plants. Likewise, poison ivy (*Toxicodendron radicans*), whose fruits also sustain wildlife, is predictably expanding as suburbanization opens up more sunlit spaces. Climbing hempvine (*Mikania scandens*), a herbaceous vine restricted to the region's coastal plain, and common greenbrier (*Smilax rotundifolia*) which forms thorny thickets, can become dominant, if local conditions are favorable. Two annual vines, both native members of the cucumber family (*Cucurbitaceae*), wild cucumber (*Echynosystis lobata*) and one-seeded burr-cucumber (*Sicyos angulatus*), similarly form large, dense patches smothering surrounding plants.

The case of the invasive Asian bittersweet illustrates how hybridization can threaten a native species. The native American bittersweet (*Celastrus scandens*), a liana that was once widespread in New England, is endangered in Rhode Island and threatened in Massachusetts, primarily because Asian bittersweet outcompetes it. But the invasive species also can hybridize with the native bittersweet, producing viable seeds, and widespread hybridization could render the native species extinct.

03

Several other native climbers are rare in New England for a variety of reasons. Among the rarest is American climbing fern (*Lygodium palmatum*). After being over-collected for Christmas decorations, it became the first legally protected plant in the United States—in 1869, in Connecticut. The pinnae (equivalent of leaflets) divide into pinnules to form a pleasing palmate (hand-like) shape. Habitat loss has prevented it from making a comeback, and today it is extirpated in Vermont and is extremely rare to uncommon in the four other New England states where it occurs.

Two other rare New England climbers are rare throughout their entire range because of the specialized habitats they require: Allegheny-vine (*Adlumia fungosa*) and purple virgin's

02 Fox grape (*Vitis labrusca*)
Photo: Dan Jaffe © Native Plant Trust

03 American bittersweet (*Celastrus scandens*)
Photo: © Arthur Haines

04

It is feasible that warmer temperatures and higher CO2 will favor vines over other woody plants; because climbers don't invest as much carbon producing woody tissue as trees and shrubs do, they can use their carbon for growth.

bower (*Clematis occidentalis*). Allegheny-vine's lacy foliage and heart-shaped, white to pale-pink flowers resemble bleeding-hearts and other *Dicentra* relatives. It prefers cool, moist, shady, alkaline sites, often rocky or steeply sloped, and needs gaps in the forest canopy to germinate the seeds lying dormant in the soil. Purple virgin's bower, named for its four large, bluish-purple, petal-like sepals, typically occurs in small populations in high-pH, rocky slopes. It grows in open areas or forest edges and is dependent on disturbances such as falling trees and rockslides to create openings in the canopy.

Three other climbers in New England owe their rarity to lying at the edge of their range here. Hairy honeysuckle (*Lonicera hirsuta*), named for its glandular hairs, inhabits rich, rocky slopes on limestone bedrock. It is endangered in Massachusetts and Vermont, where it occurs along the western borders. The hummingbird-pollinated wild honeysuckle (*L. dioica var. glaucescens*), with its clusters of tubular deep-red to maroon flowers, is widespread in most of southern New England but rare in New Hampshire and Maine, where its range reaches the northern end. Canada moonseed (*Menispermum canadense*) is a high-climbing liana that is endangered in New Hampshire and uncommon in Massachusetts. It can twine up supporting vegetation or form sprawling colonies on the ground. Its clusters of greenish-white flowers produce toxic, blue-black fruits that resemble grapes, each containing a single flat, crescent-shaped seed that gives the plant its name. Favoring rich forests and woodlands, riparian forests, and rocky ridges, it occurs mainly in western New England and farther west.

Climbers do not grow in boreal forests in northern latitudes, because they lack the insulation that wood provides. (Without that insulating woody tissue, the climbers' vessels freeze and burst.) But in a warming climate, climbers may migrate north. Rising temperatures may also spur climbers to grow more vigorously than they have here in the past—but exactly which species, and how much more vigorously remain unknown. (Scant research exists on how rising carbon dioxide affects climbers in temperate zones.) It is feasible that warmer temperatures and higher CO_2 will favor vines over other woody plants; because climbers don't invest as much carbon producing woody tissue as trees and shrubs do, they can use their carbon for growth. What this means for their ability to compete with trees and shrubs in our temperate climate, both above ground and at the root level, remains to be seen.

—Neela de Zoysa began her botanical career in tropical Sri Lanka. Her research was focused on the rain forests, where vines and lianas are abundant. With the increased visibility of the invasive Asian bittersweet and other climbers, she began to be curious about the role of climbers in the New England landscape.

04 **Allegheny-vine** (*Adlumia fungosa*)
Photo: © Liza Green

Rare Plant Spotlight

Dragon's-mouth (*Arethusa bulbosa*)

—Arthur Haines, Senior Research Botanist

Dragon's-mouth (*Arethusa bulbosa*) is a relatively rare orchid in New England, typically found in open peatlands in association with *Sphagnum* moss. Given its relatively low stature (up to 15 cm/5.9 in.), it does not compete well with tall shrubs and small trees, and it often co-occurs with low-growing heaths such as bog-rosemary (*Andromeda polifolia*). The magnificent, showy flowers, usually single, occur at the summit of the stem. Their magenta (or, very rarely, white) perianth attracts bumblebees (*Bombus* spp.) for pollination. But for a number of reasons Dragon's-mouth has low pollination success in the wild and often relies in part on vegetative reproduction.

In 1753, Carl Linnaeus bestowed the genus name *Arethusa* on this orchid, after the water nymph in Greek mythology. While other orchid species formerly shared this genus, today *Arethusa* is monotypic (containing only one species), as botanists have reclassified the other orchids.

The primary threats to Dragon's-mouth in the Northeast today include succession (natural changes in species composition and size within a natural community over time) and alterations to local hydrology. When taller shrubs and trees, such as American larch (*Larix laricina*), encroach on this orchid's open, sunny habitat, they eventually shade it out. Likewise, any changes that affect the water levels in the wetlands where this orchid grows can not only make the site too wet or too dry, but also favor different plants, including taller woody species. Road construction, ditching, and filling are all ways in which humans alter the hydrology of wetlands, large and small, that this orchid requires.

Please consider supporting our research, which is vital to conserving New England's rare species, at www.NativePlantTrust.org/support

Dragon's-mouth (*Arethusa bulbosa*)
Photo: © Arthur Haines

Native Plant Trust

2019 ANNUAL REPORT

The combination of a first-rate staff, terrific volunteers, and generous members and supporters enables this small organization to have a big impact. With your continued support, we'll move forward on our ambitious agenda to save, grow, and teach people about native plants.

Photo: Micah Jasny © Native Plant Trust

BY THE NUMBERS

9 Orchid seed & tissue collections for Smithsonian's North American Orchid Conservation Center

50,000 COMMON PLANTS GROWN FROM SUSTAINABLY COLLECTED SEED

756 rare plant surveys

536 questions answered on Go Botany

567,000 SEEDS OF RARE PLANTS PROCESSED FOR SEED ARK

165 courses & field trips in 6 states & online

159 seed collections of 102 rare taxa for Seed Ark

41 federal & state partners in conservation projects

30,142 VOLUNTEER HOURS IN CONSERVATION

3,017 VOLUNTEER HOURS IN HORTICULTURE

1,152 VOLUNTEER HOURS IN PUBLIC PROGRAMS

17 education partners

1.3 MILLION VISITORS TO GO BOTANY WEBSITE

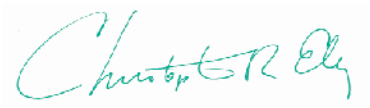
Thank you to our donors & supporters

In 2019 Native Plant Trust continued its record of success in core programs and ended the year in a strong financial position.

The organization continued to attract support for key initiatives and ended the year with an increase in net assets of $1,413,280, for a total of $14,796,511. Net assets include an endowment of $7,028,688 and a new pledge of $500,000 to establish an endowment for the Seed Ark, the initiative to collect and store the seeds of the regionally and globally rare plants of New England. Also included is $875,208 in gifts restricted by donors to specific initiatives or unrestricted bequests set aside by the Board for capital improvements. In operations, the year concluded with a cash surplus of $114,337, before the adjustment for noncash depreciation of capital assets.

In 2019 Native Plant Trust successfully launched its new name, which entailed donor-funded investment in brand consultants, graphic design, printing, and marketing. Those expenses account for the increase in General and Administrative costs this year.

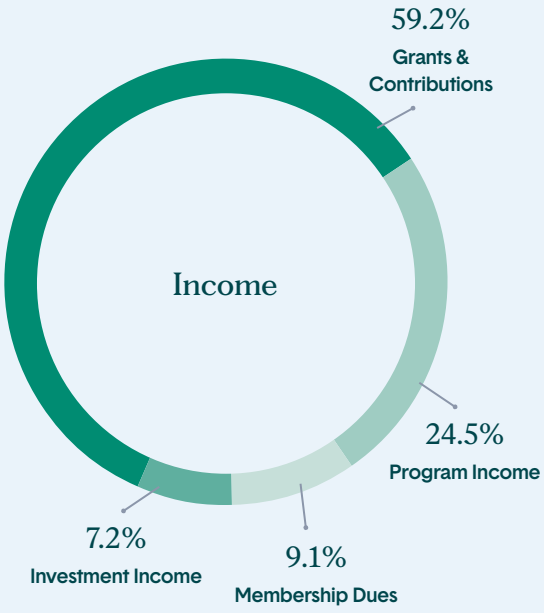
Thanks to the hard work of our Board, staff, volunteers, and the generous gifts of our many members and supporters, Native Plant Trust had an impressive year.

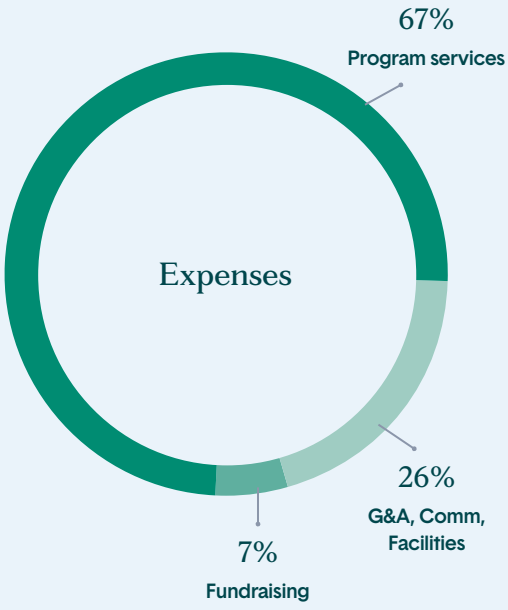


CHRIS ELY
Treasurer

Fiscal Year 2019 Operating Results

INCOME	
Grants and Contributions	$1,958,698
Program Income	$810,386
Membership Dues	$299,954
Investment Income	$239,213
Total Income	**$3,308,251**
EXPENSES / PROGRAM SERVICES	
Conservation & Sanctuaries	$736,638
Horticulture	$673,679
Education	$314,801
Member Services	$229,161
Retail Shops	$310,249
Total Program Services	**$2,264,528**
EXPENSES / SUPPORT SERVICES	
G&A, Comm, Facilities	$881,822
Fundraising	$224,109
Total Support Services	$1,105,931
Total Expenses	**$3,370,459**
Operating Surplus (Deficit)*	**($62,208)**





*** Includes $176,545 of noncash depreciation of capital assets**

A complete copy of the audited financial statements is available on our website or upon request by emailing twillmott@NativePlantTrust.org.

Arabella and Nat Dane: Speaking Up for Plants

—By Tracey Willmott, Director of Philanthropy

Childhood summers spent rambling the woods of New Hampshire began a lifelong love of nature for Honorary Trustee Nat Dane. After joining as a member in 1986, Nat became captivated by the mission of Native Plant Trust. He was especially excited about the New England Plant Conservation Program, which coordinates the efforts of New England's professional botanists who are protecting native plants. On a personal level, he found that propagating plants in his greenhouse offered a perfect counterpart to his career in finance. "The joy of nurturing a plant cannot be overstated," he says.

As chair of the Board of Trustees from 1993 to 1995, Nat enjoyed using his professional skills and contacts to network "on behalf of plants, which can't speak for themselves." A true advocate, Nat asks everyone to lend their voice, intellect, and passion to conservation issues: "We all have a role to play in protecting the environment."

Making conservation happen on a practical level lies at the heart of Trustee Arabella Dane's work with plants and pollinators, and also is the impetus for her other passion, photography. Influenced by Ansel Adams's conservation achievements, Arabella believes in harnessing the power of photography to advocate for nature. "Yes, I take photographs because I love plants. But it goes much deeper than that," she says. "I want to illustrate the problems and inspire everyone to solve them."

During 40 years of developing the *Plantipedia* website, she has witnessed first-hand how once-common plants have become endangered. Arabella encourages everyone she meets to use native plants and control invasives in their yards and community spaces: "Change is needed now, and change begins at home, with us, today. No excuses!"

The Danes' generous support for Native Plant Trust projects demonstrates their commitment to conservation. These include the Seed Ark, which aims to bank genetic material from the region's 389 rare and endangered species; the Go Botany plant-identification website; and the Plant Conservation Volunteer program, with its 1,500 trained citizen scientists. As Arabella observes, "It is pointless to stand by and watch the plants we love—and need—disappear when we can save them. Instead of being sad about the state of the environment, let's be happy we've done some good in this world."

"Change is needed now, and change begins at home, with us, today. No excuses!"

Arabella and Nat Dane
Photo: © Ned Dane

Annual Report 2019

CELEBRATĪNG YOU—AND WHAT YOUR AMAZĪNG COMMĪTMENT TO NATURE MEANS

Thank you to everyone who understands that plants are the cornerstones of our planet and whose financial support has helped conserve and promote New England's native plants. We especially want to recognize those of you who have made Native Plant Trust one of your philanthropic priorities.

CONSERVATION CIRCLE AND LEADERSHIP GIFTS

The total giving noted is for fiscal year 2019, ending December 31, and reflects restricted and unrestricted gifts, membership dues, and pledges. Our Conservation Circle honors individuals whose generous support reached $1,000.00 or more. Leadership gifts and grants from companies and foundations also had an extraordinary impact.

† Denotes deceased donors

$100,000+

Anonymous (2)
Bromley Charitable Trust
Abby and Peter B. Coffin
Estate of Dr. Elizabeth Farnsworth†
Hope Goddard Iselin Foundation
Schwab Charitable Gift Funds
Jackie and Thomas Stone
Martha Wallace and Ed Kane

$25,000 - $99,999

Anonymous (2)
John C. Barber
BNY Mellon Charitable Trust
Fidelity Charitable Gift Funds
Litowitz Foundation, Inc.
Massachusetts Cultural Council
May H. Pierce
Barbara and Edward Scolnick
U.S. Charitable Gift Trusts
Vanguard Charitable Gift Funds

$10,000–$24,999

Anonymous
Lalor and Patricia N. Burdick
Center for Plant Conservation
Frances H. Clark and Bernard J. McHugh
Edward N. and Arabella S. Dane
Helen Clay Frick Foundation
Marjorie D. and Nicholas P. Greville
Estate of Ethel M. Halsey†
Johnson-Stillman Family Foundation
Jessie B. and Jon Panek
Geri and Douglas D. Payne
Johanna Ross
Sandplain Fund at Schwab Charitable

$5,000 - $9,999

Beveridge Family Foundation, Inc.
Community Foundation of Western Massachusetts
Ruah Donnelly and Steven E. Dinkelaker
Christopher R. and Carole M. Ely

01

01 Alan Smith with David and Pam Durrant

02

Michele H. Mittelman
Osceola Foundation, Inc.
Kathleen E. and Robert C. Shamberger
Dr. Alan E. Smith and Leigh A. Dunworth
Caroline Blanton Thayer 1990 Charitable Trust

$1,000 - $4,999

Louise F. Ahearn
Annemarie Altman and David Cook†

03

Anonymous (4)
James R. Baker
Beacon Hill Garden Club
Molly and John E. Beard
Nancy A. Benchoff
Benevity, Inc.
Benson P. and Margaret S. Blake
Bottle Branch
David A. Bristol, Sr.†
Aviva and Douglas Brooks
Ralph Brown and Sue Murray
Bunchberry Foundation
Kimberly and Dennis Burns
Ronald R. Campbell
Dr. Rebecca Cannon and Dr. Scott Miller
Diana Chaplin
Susan B. and David D. Clark
Dr. David L. and Dr. Rebecca E. Conant
William G. Constable
Judith H. Cook
Dr. William W. and Martha P. Cooper
Cummings Community Giving
Stuart L. Cummings
Gail Davidson and Thomas R. Gidwitz
Martha R. Davis
Melissa A. Davis
Device Technologies, Inc.
Chandler A. Dumaine
Margaret Dumaine
Pamela B. and David W. Durrant
Suzanne W. and Alan J. Dworsky
Ralph C. Eagle, Jr.
Echo Charitable Foundation
Debbi Edelstein
Ann R. Elliman
Ellis Charitable Foundation
Lucia R. and Jon Evans
Estate of Dr. Allen E. Everett†
Elizabeth S. and Frederic A. Eustis
Lisa and George B. Foote
Framingham Garden Club, Inc.
Susan H. Frey
Janet W. and John P. Ganson
Sarah O. Garland-Hoch and Roland E. Hoch
John Goetz
Goldman, Sachs & Co.
Mary Griffin and Andy O'Neill
Suzanne Groet
Timothy Helbig and Adam Beerman
Scottie Held
Thelma K. and John H. Hewitt
Lucile P. and William C. Hicks
Daniel Hildreth
Yutaka and Sally T. Ishizaka
Elizabeth B. and Edward C. Johnson
Richard K. Johnson
Althea and David Kaemmer
Barbara Katzenberg and Peter Piela
Dr. Barbara M. and Robert A. Keller
Ann B. Kirk
George Kocur and Katherine Woodworth
Joel Krauss
Arthur P. Kreiger and Rebecca Benson
Marilyn K. Kucharski
Peggy Lahs
Marta Jo Lawrence
Lucinda H. and David S. Lee
Madeline Leone and John Mastrobattista
Emily L. and George Lewis
Faye H. and David P. Lieb
Deborah and Bob Lievens
David L. Lindsay
Ellen West and George M. Lovejoy, Jr.†

04

02 Study and Carrie Waterman, Tom and Jackie Stone, and Don Nelsen

03 Jessie Panek and Alan Smith

04 Bob and Kathy Shamberger with Polly Pierce

Brian K. and Anne S. Mazar
Stephen McCarthy
Deirdre Menoyo
Elizabeth A. and Bernard Meyer
Anthony Mirenda and Tracey Cornogg
Eliott Morra and Kimberly E. Gurlitz
John W. Murphy
William L. Murphy and Claire M. Corcoran
Lita and Donald Nelsen
Network for Good
New Hampshire Charitable Foundation
Ken Nimblett
Noanett Garden Club
John O'Keefe and Mark Smith
Lise M. Olney and Timothy W. Fulham
Carolyn M. and Robert T. Osteen
Overhills Foundation
Robert Treat Paine Association
Richard B. and Beverly S. Peiser
Edward P. Petcavage
Karen D. and Matthew V. Pierce
Plimpton-Shattuck Fund
Gloria J. Plourde
Dr. Sandra Poole and Dr. David Meeker
Barbara F. and Frederick M. Pryor
Christine A. Psathas and Robert E. Shabot
Ramelle C. and Michael Pulitzer
Elisabeth A. Raleigh
Bob and Amy Rands
Peter M. Richards
Estate of Sandra S. Rodgers†
Lucas Rogers and Mathieu Gagne
Wickie Rowland
Pamela S. Ryan
Betty and Neal H. Sanders
Deen D. Sanders
Susan Schadler and Leslie Lipschitz
Bruce M.† and Sarah T. Schwaegler
Patricia Seitz
Anne K. Serrell
Ruth and Bill Shelley
Robin R. Shield and John Tariot
Diana D. Simoni
Nicholas A. Skinner
Edwin E. and Katherine T. Smith
Charles G. Spencer
John Springfield
Donald J. and Meg Steiner
Ann M. and David S. Swanson
Susan P. Thel
Dr. Thomas S. and Karen Thornhill
Cornelia Trubey
Upper Valley Native Plant Conservation Fund
Emily Wade
Tony and Lorraine A. Wain
Carolyn and Sturtevant Waterman
Hartley D. and Benson Webster
Michael and Amy Weil
Paul M. Wexelblat
Jim and Betty Wickis
Wilma K. Wilensky

05

06

07

05 2019 Behind-the-Scenes Tour

06 Ed Kane and Leslie Lipschitz, David Durrant in background

07 Rick Peiser, Ruth Shelley, Cynthia Feldstein, and Sturdy Waterman

08

Robin E. Wilkerson and Steve Atlas
Tracey Willmott
Richard S. Wood
Candace J. Young

$500 - $999

Walter L. and Beverlee A. Adamski
William S. Andreas
Anonymous (6)
Michael and Cindy Barbehenn
Marilyn and Peter Barlow
Lisa M. Bendixen
Laura Bentz and Ken Kuttner
MaryAnn Borge
Roland H. Boutwell III
Peter M. and Elaine Brem
Eleanor F. Briggs

09

Robert Buchsbaum and Nancy A. Schalch
Ellen and Jim Burns
Josephine Bush
City of Lawrence, MA
John A. Clark and Elizabeth P. Barringer
George and Ann Colony
Francine and William E. Crawford
Crowell Family Foundation
Elizabeth J. and John Darley
Polly Darnell
Lynda DeNardo
Courtney Ek and Steven Tsai
Robin B. and Samuel Fan
Louisa Ferree
James Frantzreb and Isabel Simons
Garden Club of Mount Desert
Virginia Gauss
Helen Glaenzer
Annette Gosnell
Carolyn A. Gray and George Peppard
Joyce M. Greenleaf and Mike Fallon
Jane C. Hallowell
Michele and Robert Hanss
Rebecca M. Harvey
Dr. Kendy M. Hess
Timothy T. Hilton and Sara Miller
Katherine A. Howard
Dr. Andrea E. Jacobson and Michael Maguire
Dr. Alvin Kho and Myles Green
Warren King
Susan M. and Christopher A. Klem
Lynne Klemmer and Erik Husby
Erin Largay
Curtis W. Marble
Kevin J. McKenna
Donald B. Miller and Anne Gibbs
Dr. Sandra O. Moose
Dr. Christopher Neill and Dr. Linda A. Deegan
Peggy and Rick Novak
Deborah Nowers and Henry E. Peach
Tony and Beth G. Owens
Dr. Leroy M. and Dr. Winifred B. Parker
Alexander S. Parr
Wallace Pinfold
Bonnie B. Potter
Ute and Patrick Prevost
Pumpkin Brook Organic Gardening
Douglas N. Reynolds
Elizabeth Ross
Marjorie H. Roy
Susan Ruf
Amy and John Saar
Sacajawea Charitable Foundation
Johanna Schmitt and James C. Dunn
Ellen Schoenfeld-Beeks and David Schoenfeld
Loring L. and Andrew M. Schwarz
Dr. Dick Snellgrove
Rachael Solem and Barry Herring
Betty and Frank Stanley
Edward Stutsman
Anne Symchych
David V. N. Taylor
Town of Greenfield, MA
Town of Plymouth, MA
Janet Weathers and Ronald Cobb
Sarah S. Webb
Charles H. and Louise E. Weed
Tobias Wolf and John Skurchak
Christina Wood
Sara L. Wragge
Kathy H. Wrean and Hugh W. Chandler, Jr.
Susan and Paul Young

10

08 Leonardo DaSilva with Jose DaSilva

09 Amy Woo

10 Jake Brumback, Mary Crain Penniman, and Bill Brumback

11

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
John C. Barber
Julia A. Barber
William Brumback
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
Judith H. Cook
Jane Davis
David L. DeKing
Patricia A. Diggins
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. Gradijan
Marjorie D. and Nicholas P. Greville
Charles A. and Barbara A. Grunden
T. C. Haffenreffer
Jane C. Hallowell
Ervina Hamilton
Dena and G. F. Hardymon
Allyson Hayward
Thelma K. and John H. Hewitt
Dr. Kristina N. Jones and Dr. Peter Hecht
Larry L. Jones
Kathleen A. Klein
Catherine Z. Land
David R. Longland
Ellen West Lovejoy
Eugene I. Majerowicz
Ellen B. and Duncan McFarland
Michele H. Mittelman
Monadnock Garden Club
Sally McGuire Muspratt
Beverly Myers
Bruce Patterson
Judith Pierce
May H. Pierce
Peggy and Hollis Plimpton
E. M. Poss
Patricia Pratt
Christine A. Psathas and Robert E. Shabot
Harriet D. Purcell
Dr. Paul John Rich
Johanna Ross
Barbara V. and George R. Rowland
Maureen L. and Michael C. Ruettgers
David B. Rundle and Catherine M. Huntley
Aire-Maija Schwann
Catherine Schwenk
Robin R. Shield and John Tariot
William and Hatsy Shields
Mary M. Smithline
Peggy Spaeth
Gwen L. Stauffer
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 Zimmermann

TRILLIUM SOCIETY

To help ensure our future ability to conserve native plants and their habitats, the following generous friends have included us in their estate plans.

Elizabeth L. Aghajanian
Annemarie Altman
Anonymous
Joyce H. Bisson
Lalor Burdick
William J. Claff
Frances H. Clark
Abby Coffin
Stuart L. Cummings
Ruah Donnelly
Peter V. Doyle and Ellen Clancy
Christopher R. Ely
Nancy Goodman
George C. and Diantha C. Harrington
Patti Laier
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
Dori Smith
Anita E. Springer
Jackie and Thomas E. Stone
Mary Ann Streeter
Leslie Turek
Dr. Edward S. Valentine
Martha J. Wallace
Dr. Nancy L. Weiss
Cheryl K. Wilfong
Patty Wylde

11 Polly Pierce, Geri Payne, Marjorie Greville, and Alan Smith

TRIBUTES

In 2019 we received honoraria or memorial donations in tribute to the following friends, colleagues, mentors, and loved ones.

In Honor of

Bill Brumback
Greg Cronin
Ruah Donnelly
Debbi Edelstein
Sally Fowler
Marjorie D. Greville
Arthur Haines
Barbara Keller
Anne McGrath
Virginia McIntyre
Polly Pierce
Bonnie Rosenthal
Lindsey Schreier
Emily Scott
Sarah Shure
Nancy Soldano
Hannah Traggis
Priscilla H. Williams
Christina D. Wood
Steven Ziglar

In Memory of

Rena Bacchiocchi
Warren P. Balgooyen
Ruth Baxter
Elaine A. Bent
Shirley Cross
Noor Din
Eric Drobinski
Joan Fargo
Dr. Elizabeth Farnsworth
Karen M. Frank
Peter T. Harris
Martha Hoar
Dr. Dana Jost
Deborah L. Mister
Ruth A. L. Nastuk
Deborah Petri
George G. Schwenk
Sara Silverstein
Ellen Stutsman
Gray H. Wexelblat

12

13

GIFTS-IN-KIND

Gifts-in-kind uniquely allowed us to expand our outreach in 2019 without impacting our outgoing expenses. It is our pleasure to thank the following gift-in-kind donors.

Kristina N. Allen
Big Y Foods, Inc.
Compliments Food Co.
James Corsiglia
Linda Decker
Jamie Kallestad
Joan K. Rising
Marjorie H. Roy
Dr. Alan E. Smith
Anne Sroka
Wegmans Food Markets, Inc.

MATCHING GIFT COMPANIES

We extend special thanks to the following businesses for their generous support in 2019.

Aetna Foundation, Inc.
Google, Inc.
Hartford Fire Insurance Company
IBM Corporation
JP Morgan Chase Foundation
Merck Foundation
Microsoft
Oracle
Sun Life Financial
UnitedHealth Group

12 & 13 The Deborah Shepard Petri memorial bench was dedicated by the Device Technologies family

A LĪTTLE HELP FROM YOUR FRĪENDS

OUR STAFF SUGGESTS SOME INSPIRING BOOKS ABOUT SCIENCE AND PLANTS

These books have shelf life beyond their publication dates, in part because they hold enduring stories of human experience with the natural world, or about aspects of nature that never cease to amaze and inspire.

From Jane Roy Brown, writer-editor:

Lab Girl by Hope Jahren (Knopf/Borzoi Books: 2016)—quirky memoir by a paleobiologist struggling to gain a foothold in academia while finding the profundity in trees

From Alexis Doshas, propagator and facilities coordinator at Nasami Farm:

Flight Behaviour by Barba Kingsolver (Faber & Faber: 2013)—a work of fiction based in science, climate change, and social justice issues

From Ted Elliman, consulting botanist:

Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants by Robin Wall Kimmerer (Milkweed Editions: 2013).

From Rachel Wolff Lander, graphic designer/ production manager:

Horseshoe Crabs and Velvet Worms: The Story of the Animals and Plants that Time Has Left Behind by Richard Fortey (Vintage: 2012) —a chronicle of life's history told not through the fossil record but through the stories of organisms that have survived, almost unchanged, throughout time

SIGN-UP

Sign up for our free eNews to get updates about our public programs, events, and other activities.

Visit www.NativePlantTrust.org and click on eNews in the footer on any page.

Native Plant Trust

Conserving and promoting New England's native plants

HEADQUARTERS & GARDEN IN THE WOODS

180 Hemenway Road
Framingham, Massachusetts 01701–2699

Foamflower (*Tiarella cordifolia*)
Dan Jaffe © Native Plant Trust

CLIMATE CHANGE CAN-DO: KILL YOUR LAWN

Turf grasses need extra water, polluting fertilizers, and carcinogenic herbicides and pesticides. These boost growth, so we mow more often, trailing gas fumes that create ozone pollution. Enough! See how to replace your fossil-fueled turf with a gorgeous, low-maintenance landscape of native plants at www.NativePlantTrust.org/for-your-garden/ecological-gardening.