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New England WILD
News and Insight on Conserving Native Plants & Their Habitats
Volume 7, No. 1, Spring/Summer 2014

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Editor, Julia Homer
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Pickerel frog on yellow pond lily (Nuphar variegatum)
photo by Arthur Haines

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Four months after the publication of *Silent Spring* in September 1962, former marine biologist and best-selling nature writer Rachel Carson gave the keynote address at the Wild Flower Society’s annual meeting in Boston. The widely quoted speech focused on values, and specifically on the value of our brand of activism in a world that requires us to “decide what is worth while” and “to separate the trivia of today from the enduring realities of the long tomorrows.”

For Carson, at the core of those “enduring realities” are the natural communities being destroyed by “our heedless technology” in “a grim experiment never before attempted.” She was, of course, focused on the large-scale use of manmade chemicals in the environment—such as the blanket spraying of herbicides turning the landscape along our roads into “barren, unsightly wastes” that no longer provide “food and shelter for birds and many small animals” and for “the bees, too, an incredible number of…wild pollinators.”

She was also eloquent about both the scientific and moral reasons to be custodians of nature: “The evolution of the plants of today took millions and millions of years. Who are we to assume the right, in this 20th century—a mere instant in time—who are we to say that those who come after us may never see some of today’s rare and endangered species? What right do we have to destroy the scientific record contained in a living species? How do we know that we may not have great need of what it has to tell us—or of the function it performs?” And she urged the public to focus on the “wholeness of life,” which includes the environment of man: “A world that is no longer fit for wild plants, that is no longer graced by the flight of birds, a world whose streams and forests are empty and lifeless is not likely to be a fit habitat for man himself, for these things are symptoms of an ailing world.”

Fifty years later, the world is still ailing, as additional “grim experiments”—from chemical-induced climate change to development that erases and fragments habitat to the introduction of plants that overturn the native flora—are affecting natural communities. And fifty years later, we can still grab on to the activism in her words: “We live in a time when it is easy to despair, but which is also a time of great hope. We live in a time when it is necessary to know for what we stand, and to take that stand with courage.”

Articles in this issue of our magazine highlight what we at the Society stand for: plants—from seed to specimen to habitat—that are the basis of “the wholeness of life” and that benefit from champions like us with strategies that focus on “the long tomorrows.”

Sincerely,

Debbi Edelstein
Nine New Ideas from the Northern Gardening Symposium

In northern New England, the first real sign of spring is often the Northern Gardening Symposium, hosted by New England Wild Flower Society at Vermont Technical College in Randolph, VT. Now in its fifteenth year, the April 19 symposium brought speakers from as far away as Canada and New York to the all-day gathering, where they shared their insights and expertise about native plants with an enthusiastic crowd. For those of you who missed it:

Uli Lorimer, Curator of the Native Flora Garden at the Brooklyn Botanical Garden, tends its historic collection and has expanded the garden to include coastal plain grassland and pine barrens habitats. He works with regional botanists and taxonomists to collect seed and cultivate rare and indigenous species. From Uli, we learned that:

1. Not all compacted soil is bad; it can mimic a clay pan through which water percolates slowly. Cover this layer with sandy, well-drained soil and voila! You have a habitat in which pine barrens plants such as sundews (Drosera spp.), small wild cranberry (Vaccinium oxyccocos), and grass-pink orchids (Calypogon tuberosus) can thrive.

2. Have an extremely dry section in your garden? Populate it with graceful grasses such as purple lovegrass (Eragrostis spectabilis), wavy hair grass (Deschampsia flexuosa), and narrow-leaved mountain mint (Pycnanthemum tenuifolium), a relative of bergamot.

3. The gradual evolution of a planted meadow follows these steps, typically over three years: “sleep creep leap.”

4. Steep slopes can provide visual surprises. Consider planting that hill in mayapple (Podophyllum peltatum); from below, you can glimpse its nodding flowers, while from above you enjoy masses of umbrella-like foliage.

5. Challenged by the difficulty of growing lovely gentians (Gentiana spp.), Mulch to maintain consistently high moisture levels.

6. Think no plant can live in dry, acidic shade? Try black cohosh (Actaea racemosa). For every tough place in the garden, there is a tough native plant adapted for it.

7. Native wildflowers can make great cut flowers for bouquets if treated properly when cut. For longer-lasting arrangements, place flowers in a vase of cold water out of the sun immediately after cutting them.

8. The newly emerging “Slow Flower Movement” offers a conscious choice for buying and selling wildflowers that are locally sourced.

9. When grown near swaths of native cultivated wildflowers, blueberries (Vaccinium spp.) are more efficiently pollinated and produce bigger yields.

Go Botany beyond New England

Although Go Botany is the pre-eminent interactive online guide to the flora of New England, its influence does not stop at the border. To be sure, it has won a regional award for its outstanding educational value (the Marie Pirie Program Award from the New England Environmental Educators’ Alliance). But other organizations are realizing that Go Botany serves as a model for next-generation field guides everywhere.

Go Botany was the focus of a recent peer-reviewed article in BioScience, the journal of the American Institute of Biological Sciences. Go Botany has taken its place alongside other well-known apps such as the Smithsonian Institution’s Leafsnap, Cornell Lab of Ornithology’s eBird, and large national repositories of online data such as DiscoverLife and BugGuide.net.

And now Go Botany’s platform and design are being adopted and adapted by other organizations around the world. The Smithsonian Institution used our software and design to develop “Go Orchids,” which features an interactive guide to the orchids of North America. Seeded (as it were) with our own data on orchids from New England, Go Orchids is rapidly expanding to include all the species from coast to coast. From there, Go Orchids caught the attention of the Native Orchid Society of South Australia, which has a grant proposal pending to engage Go Botany staff in advising on the development of its own interactive flora. (If the funding comes through, we are hoping for a field trip to advise in person, of course.)
Why Native Matters
The case for an ecocentric approach to garden design
When we design landscapes, we use plants that are, by and large, native to somewhere in the world. Very few of them are native to our own region.

Botanists define North American native plants as those existing before European colonization. In New England, an estimated 35 percent of the roughly 3,500 species of tracheophytes (i.e., vascular plants excluding mosses) found in the region today were introduced after 1600. Non-native plants occupy a significant part of our forests, our wetlands, and even our coastal beaches.

In designed landscapes, they dominate: Overall, less than 4 percent of the species cultivated in landscapes are natives. Of course, 80 percent of the designed landscape is lawn, a monoculture composed of non-native grasses. In gardens, about 20 percent of the plant material is native.

That percentage should be much, much higher, for reasons that are both philosophical and scientific. By definition, native plants are those that have evolved in relationship with all the other life forms in their biological communities, from soil bacteria to plants, mycorrhizal fungi, pollinators, herbivores, fruit dispersers, and carnivores. Like the other members of their communities, they play a role in the overall functioning of the ecosystem.

Adding or removing species changes the natural communities. We can document that, for the most part, the addition of species, even those we enjoy or find useful, is not beneficial for the ecosystems within which humans reside. In fact, some of plants that have most drastically altered natural communities were brought to this country for horticultural use. Species such as oriental bittersweet (Celastrus orbiculatus), of non-natives for native plants ignores the complex ways native fauna depend on native flora. According to Doug Tallamy in Bringing Nature Home: How You Can Sustain Wildlife with Native Plants, 90 percent of insect species are specialists whose existence relies on a particular plant. Many of them find non-native plants inedible. An estimated 96 percent of our upland birds rely at least in part on insects to feed their young. Without those insects, birds lose an exceptional source of protein and other nutrients.

We may think we are feeding the birds by planting non-natives for fruit or nectar, but we are depriving them of the food they need most to raise their young. Studies show that a higher proportion of native plants in a region results in more birds, a greater diversity of birds, and increased numbers of breeding pairs.
HOW LOCAL IS NATIVE?

Once gardeners decide to take the step of creating native plant gardens, they immediately face the question: What degree of “native” is correct? Native can mean native to the continent, native to the ecoregion, native to state, or native to the local flora. Species that are native to a given state may occur only in one small part of that state. Does planting those species in a different part of the state still constitute gardening with native plants?

An experiment at Nasami Farm suggests how much “local” can matter. Recently, the staff at Nasami Farm collected seeds of *Viburnum lantanoides*, a New England native, from two distant populations: one in northern Connecticut and one in northwestern Maine. They germinated and grew both sets of seeds side by side at the farm, which is in western Massachusetts. Plants grown from the Connecticut seed (top photo), held their foliage into the summer heat, while the plants originating in Maine (bottom photo) dropped leaves prematurely. The Connecticut plants were better adapted to conditions in Massachusetts, and thus flourished, while the northern Maine ecotypes did not.

So, how local is native? It depends. In habitat restoration work, botanists must plant the exact genotype. Planting a rare species whose seeds hail from a distant place does not support the local forms of that species. For other types of planting, including gardening, less rigorous standards could certainly apply. An admirable goal in garden design would be to seek native species that are propagated from sources as close to home as possible.

A NEW ENGLAND GARDEN
WORT. THE SUBSTITUTION
ANTS IGNORES THE COMPLEX
D ON NATIVE FLORA.

Particularly in the context of deforestation, agriculture, wetland alteration, and habitat lost to development, the very high percentage of non-native species in designed landscapes represents a significant modification to local environments.

People alter landscapes to suit their own purposes. We grew oriental bittersweet for its ornamental fruit. We create lawns because we like the way they look. We are not accustomed to thinking about how

the introduction of a new species to an area affects other organisms, especially the insects or birds that do not interest us. Unfortunately, this egocentric approach has affected ecosystems profoundly, and continues to do so in ways we did not intend and do not fully understand.

At this juncture, we need to choose garden plants for reasons that extend beyond our personal preferences for beautiful fall foliage, showy flowers, and pleasing fragrance. Minimizing alterations to the local environment through the judicious use of native plants is one way we can begin to foster ecocentric garden design. As we move forward, thinking in terms of the environment and maintaining its ecological function will only become more critical. We need to walk more softly on the earth. Planting natives is one very important way to do so.

ARTHUR HAINES, RESEARCH BOTANIST
Ten Years on a Habitat Farm
Putting Ecocentric Principles into Practice

Ten years ago, my husband Robert and I bought a small but extraordinary farm in Spencer, Massachusetts. The property, with its beautiful barn, is set among hills and meadows, old trees, woods ranging from wet to dry, a gurgling brook, a farm pond, and some attractive (although mostly Eurasian) landscaping.

With the goal of creating a sustainable and beautiful habitat farm, we installed our two horses in the barn; bought some chickens; began growing vegetables, fruits, and culinary herbs; and planted beds of colorful annuals, perennials, and shrubs designed to attract and support birds, butterflies, and beneficial insects. Learning about the essential relationships between native plants and insects through New England Wild Flower Society’s Certificate Program on Horticulture and Design, I decided to replace the exotic shrub-berry on our farm with natives and limit new perennial plantings to species native to the ecoregions of the Northeast. I also began growing natives from seed collected from as close to home as possible, to help offset the losses to local native plant communities as more development moves in to this area.

As it happened, the characteristics of the site—a plateau on a steep, north-facing river valley strewn with rocks—created an excellent living laboratory for propagating plants native to different Massachusetts habitats. These include boneset (Eupatorium perfoliatum), Joe-Pye weed (Eutrochium maculatum), blue flag iris (Iris versicolor), native lilies, ferns, sedges, different phloxes, asters, and black cohosh (Actaea racemosa), along with beautiful flowering shrubs such as buttonbush (Cephalanthus occidentalis), chokeberry (Aronia), and shadblow (Amelanchier).

Our success at small-scale homesteading inspired me to leave a stressful corporate job in 2007 to pursue a career as a garden coach, writer, and plant propagator. As we substantially downsized, growing our own food became a way to live well and stay healthy on a much-reduced income. Blessed with ample water resources, plenty of farm compost, and the free pest-controllers brought in by the variety of native plants, we can produce substantial yields of food without pesticides and using almost no outside inputs.

Along with vegetables, we planted mostly native berry shrubs and trees such as blueberry (Vaccinium), shadblow, spicebush (Lindera benzoin), winterberry (Ilex verticillata), witherod (Viburnum pudum), and American plums (Prunus americana) to share with the birds. In recent years, I’ve diversified into native culinary and medicinal herbs, many of which are rarely found in the wild due to overharvesting and habitat loss. I harvest small quantities for tea, but mostly I consider my expanding patches of black cohosh, American ginseng (Panax quinquefolius), wild ginger (Asarum canadense), wild bergamot (Monarda fistula), and goldenseal (Hydrastis canadensis) as living sanctuaries for the wildlife that depend on them.

Every plant grown here serves a function, supporting or feeding people, farm animals, or wildlife. I use my ubiquitous weeds to my advantage: violets (viola) as a nitrogen-sucking buffer plant
between the farm paddocks and the pond, and handfuls of hay-scented fern (*Dennstaedtia punctilobula*) foliage as mulch for vegetable beds. Wild asters are encouraged into tough garden areas—white wood aster (*Eurybia divaricata*) in shade, New England aster (*Symphyotrichum novae-angliae*) and tall white aster (*Doellingeria umbellata*) in sunny spots that occasionally flood. We do grow some colorful non-native annuals in containers and beds near our vegetable crops to attract more pollinators and predatory crop pests. The bright groupings of marigolds (*Tagetes*), dwarf zinnia (*Zinnia*), cosmos (*Cosmos*), nasturtium (*Nasturtium*), and sweet alyssum (*Lobularia maritima*) add visual punch and distract from the inherent “untidiness” of the wilder areas and tattered late-season vegetables.

The edges of the farm pond are a challenging environment. Full sun and plenty of moisture create excellent growing conditions for invasives as well as native plants. I’ve had the opportunity to introduce some glorious plants rarely seen for sale or in the wild, including swamp rose mallow (*Hibiscus moscheutos*), Turk’s cap lily (*Lilium superbum*), sneezeweed (*Helenium*), and ironweed (*Veronica*). But vigilance and weed control are essential for preventing this area from being overrun with stinging nettle, ditch lily, and the invasive Asiatic multiflora rose (*Rosa multiflora*), famous for taking over farm wetlands in central Massachusetts. Overall, the process of landscaping around the pond has required much trial and error and a high tolerance for nature’s own contribution to the design.

On the slope of the north side of the house (photo below right), the high angle of the early spring sun allows for a tapestry of spring blooms from early May right through June.

When we moved in, a gravelly section beside the driveway was lined with trees that were smothered in Asiatic bittersweet vine (*Celastrus orbiculatus*). After several years of hard work removing these invasives (and many others) from our property, we noticed an amazing thing. Although old hemlock trees shade this site year-round, native plants began to make a comeback. Trilliums, Solomon’s seal (*Polygontum*), white wood aster, starflower (*Lysimachia borealis*), mountain laurel (*Kalmia latifolia*), cinnamon fern (*Osmundastratum cinnamomeum*), and Christmas fern (*Polystichum acrostichoides*) all seeded themselves in. I added shade-lovers like golden groundsel (*Packera aurea*), running foamflower (*Tiarella cordifolia*), blood-root (*Sanguinaria canadensis*), and May-apple (*Podophyllum*). In the fall, we rake and blow leaves off the driveway to contribute to the duff layer; in summer, occasional hand-weeding keeps the bittersweet and other dominating weeds from staging a comeback. Otherwise, we leave the area alone. This tough spot (next to the road, where snow piles up in winter) has become a low-maintenance woodland garden.

Winter means downtime for gardeners and horses, but not for hungry birds. Seeds of native plants left standing on the stem feed birds right through the winter, and native shrubs with berries that persist into winter (viburnum, winterberry holly, chokeberry) continue to feed robins and waxwings well after the snow flies.

After 10 years, we are 75 percent of the way toward our goal of replacing invasives and exotics with natives. Each year brings new and interesting forms of wildlife to our habitat farm, attracted by the food and shelter supplied by the native plants, and we continue to be enthralled by the beauty and complexity of the wild plant communities we are nurturing in our little bit of New England woods.

Ellen Sousa is an overseer for New England Wild Flower Society and winner of the 2008 Kathryn Taylor Award.
No man is an island,  
Entire of itself,  
Every man is a piece of the continent,  
A part of the main…

—John Donne, *Meditation XVII*

As the poet observed in 1624, every living being is just one piece of a larger whole. Plants are no exception; each species plays a role in its community, interacting with other plants and supporting the insects, birds, mammals, and other organisms cohabiting in a particular place with a particular set of environmental conditions. When conserving a plant species, it is critical to understand the community of which it is a part and to consider how best to foster the patterns and processes that shape that community. But what is a community? Ecologists have long argued over precise definitions, but generally conceive of a community as a group of interacting species living together in a set of environmental conditions that collectively define the physical habitat.

Over the past twenty years in the U.S. (and over the past century in Europe), biologists have worked to devise a cogent classification system for ecological communities to make sense out of the diverse, ever-changing, and often overlapping assemblages of organisms on the landscape. It’s easy to distinguish between a forest and, say, a meadow. But consider all the kinds of forests: A dark, moist hemlock grove contrasts dramatically with a stunted stand of scrub oak, yet both are forests. A hiker climbing Mount Wachusett might pass through hemlock groves that gradually transition to stands of shorter trees and crest the summit to find a weather-beaten cluster of oaks, but might find it difficult to pinpoint precisely where the transformation happened. Likewise, plant communities change over time. When a hemlock stand succumbs to the wolly adelgid, the gap it leaves creates new habitat for light-demanding, early-successional species such as birch and cherry, which will predominate for several decades. It’s still a forest, but a very different kind of forest.

Despite the constancy of ecological change and the limitations of human perception, botanists have devised a community classification system that explains the diversity of plant assemblages quite comprehensively. Efforts are underway to standardize the nomenclature and categories across North America, covering upland, wetland, and estuarine habitats. State Natural Heritage programs can now determine which natural communities are widespread and which are uncommon. Much as they do for endangered plant species, Natural Heritage biologists rank natural communities based on their rarity and vulnerability to various threats.

Sand plains are particularly illustrative examples of a habitat type that includes several rare natural communities and their constituent rare plant species. The term *sand plain* encompasses several community types, including sand-plain grassland, heathland, maritime oak-holly forest, and coastal forest/woodland, which grade into dunes at the sea’s edge and can contain coastal plain ponds—depressions or swales where groundwater meets the ground’s surface for part of the year.

The sand plains of eastern and inland Massachusetts and its islands, southern Rhode Island, pockets of coastal Maine, and all the way south to the Pine Barrens of New Jersey, are products of glacial outwash. As the repeated glaciations of the Pleistocene finally released their grip about fourteen thousand years ago, meltwater redistributed vast amounts of sand. The resultant habitat is desert-dry and exposed to wind, storms, and daily fluctuations in temperature. The soil is nearly devoid of nutrients. Near the coast, plants are also exposed to salt spray, which can stunt their growth.

To survive, a plant must be tough, and many denizens of sand plains share
common traits designed to weather harsh conditions: leathery leaves that resist water loss; dense hairs that protect photosynthetic tissues from sunscald and cold; deep or spreading roots that forage for scarce water; and a prostrate growth form that keeps them out of the wind. Some species, like bayberry (Morella pensylvanica) and sweetgale (Myrica gale) form symbioses with bacteria that fix nitrogen from the soil. Two gnarly, tough-leaved tree species typically dominate: pitch pines (Pinus rigida) and scrub oak (Quercus ilicifolia).

In Massachusetts alone, 27 rare plant species occur in upland sandplain communities, and another 20 inhabit coastal plain pond shores. Sandplain agalinis (Agalinis acuta), a diminutive annual herb with narrow leaves and small, bright-pink flowers, is emblematic of sand plain grasslands. The species is rare throughout its highly restricted range and was once thought to be extinct in New England until new populations were discovered after concerted searches. Although sand plains are not the choicest real-estate for plants, they are for people, and much of the plant’s habitat has been converted to residential development. Perhaps ironically, the only two Massachusetts populations occur in cemeteries.

So how can we best manage sandplain agalinis and other rare sandplain species? These species depend on periodic disturbances that keep portions of the habitat open and discourage canopy trees and other plants from overtopping them. In the past, fire helped maintain openings in sand plains. It was long thought that Native Americans wielded fire as an agricultural and hunting tool, but more recent evidence suggests that fires increased in frequency only after the first colonists settled on the coastal plain, around the time John Donne was penning his lines. Grazing by sheep may also have hampered tree growth.

Conservation research, including that conducted at Garden in the Woods, has focused on understanding the limits to seed germination and early growth, as well as the complicated requirements of agalinis: this hemiparasite derives its nutrients by associating with host plants such as little bluestem (Schizachyrium scoparium). In the field, management efforts have involved using fire (sparingly), grazing (infrequently), and mowing (regularly) to reset the successional cycle and keep woody cover sparse. These activities also foster habitat for a mosaic of rare sand plain communities and the endangered species they support.

The story of sandplain agalinis exemplifies the complexities of conservation. Are efforts to restore one species sufficient to sustain many associated species with similar habitat affinities and life histories? Are some of the species that are currently considered rare simply relics of artificial habitats that were created by humans? If so, does this matter, given the imperative to conserve biological diversity during this, the sixth major extinction on earth? What are the roles of rare plant species (and common ones, for that matter) in communities, and which species dependent on these plants will become rare as a result of their demise? Field research is yielding scientific answers that will inform on-the-ground conservation, but these complex questions border on the philosophical and challenge us to define our ethical assumptions and deeply examine our relationship to the “natural” world. As Donne observed, “No man is an island,” and Homo sapiens cannot consider its future as a species without accounting for the fates of all the others.

BY ELIZABETH FARNSWORTH, SENIOR RESEARCH ECOLOGIST, NEW ENGLAND WILD FLOWER SOCIETY

This is the first in an occasional series on typical New England habitats.

The Coastal Sand Plain at Garden in the Woods

The newly created Coastal Sand Plain at Garden in the Woods is a unique inland representation of the Atlantic coastal pine barren habitats found along the East Coast from Cape Cod to New Jersey. The habitat supports such native plants as pitch pine, common arrowhead (Sagittaria latifolia), and little bluestem. Some of the plants that thrive here are extremely rare in New England, including the beautiful sundial lupine (Lupinus perennis) and Nantucket serviceberry (Amelanchier nantucketensis), a slender shrub with creamy white flowers and dark blue berries.

Why recreate such a habitat so far from shore? Although it’s not obvious to the casual observer, soil conditions in this section of the Garden have been heavily modified over time. Years ago horticulture staff added 18 inches of gravel to this spot in order to provide the right conditions for the Garden’s collection of western plants. Ultimately, even with modifications, the soil was never appropriate for these plants, which require genuinely dry conditions. However, the site offers an ideal environment for native plants from coastal communities, which like soil that is sandy, well-drained, low in fertility, and constantly moist. This new habitat garden was designed to work with existing site conditions and to showcase the beauty of the native plant communities that work best in those conditions.
CONSERVATION CONVERSATION

The Trouble with Earthworms

Folklore, tradition, and decades of results in vegetable gardens have taught us that earthworms are our allies, friendly creatures whose mere presence signals a healthy soil. Earthworms recycle soil organic matter, loosen compacted soils, and build a network of tunnels that help improve water infiltration and soil aeration. They amend the soil with compost, without asking anything from the gardener.

Unfortunately, these garden allies are wreaking havoc in the northern forests of the U.S., where glaciation eliminated all native earthworms and post-glacial plant communities evolved without their presence.

Soil is a living ecosystem, a delicate balance of microorganisms including fungi, bacteria, protozoa, and nematodes. In the same way that plants have evolved to thrive in specific environmental conditions—temperature, average annual rainfall, sunlight, and so forth—they have also evolved to thrive in specific soil conditions. Although we often focus our attention on the physical and chemical properties of soils, the biological properties are at least as important.

As microbes break down soil organic matter, they cycle nutrients in the soil, supplying plants with essential macro- and micronutrients. In an ecosystem that developed without earthworms, this biological activity is slow. In a northern hardwood forest, a healthy duff layer (the leafy organic material that accumulates on the soil surface, which scientists call the O-horizon) forms because fungi are the primary mechanism for breaking down the annual influx of fall foliage.

Earthworms from Asia and Europe were introduced to this country both inadvertently, in soil-containing materials, and deliberately, for use in waste management. Sportsmen dumping their bait after a day’s fishing and people bringing mulch from one area to another helped spread these invasives further into the forests.

Worm populations migrate slowly, at a rate of about one-half mile per hundred years, but once established in a new area, they reproduce rapidly, and quickly alter the soil profile. They can denude soil of its duff layer in just one season, and inundate the A-horizon, or topsoil, with large amounts of nutrients as they churn the soil surface and transport organic matter deeper into the soil profile.

Although earthworms reduce soil compaction in cultivated areas, they can increase soil compaction in forest soils, further reducing the soil’s suitability for the plant communities native to those forests.

Earthworm activity can stimulate biomass on the forest floor, but it diminishes biodiversity. Researchers in Vermont and Minnesota have shown that heavily invaded sites favor certain plant species, including many invasive species. For example, there is a positive correlation between earthworm activity and common buckthorn (Rhamnus cathartica) populations. In contrast, earthworm activity damages many native understory plants, particularly those like Trillium grandiflorum, which requires a thick duff layer for seed germination and early establishment.

However helpful they are in gardens, in northern forests earthworms are as destructive as white-tailed deer. Some northern hardwood forests once rich in understory plants now are nearly empty of native vegetation, including tree seedlings.

This season, horticulture staff at Garden in the Woods will be experimenting with different mulches to see whether pine needles, for example, can slow down the damage earthworms are causing to soils in the Woodland Garden.

Building awareness of this issue is the most important step we can take at this point to help lessen the impact of this little-known threat. Once earthworms are introduced to an area, they can be nearly impossible to eradicate; the best strategy for limiting their impact is to prevent their introduction in the first place. For homeowners, that means thinking twice about vermiculture, and screening vermicompost to remove worms and cocoons before using it in the garden. It also means not dumping worms at the end of a day’s fishing. While the individual worms may appreciate their release, our forests can’t tolerate them.

BY MARK RICHARDSON, DIRECTOR OF HORTICULTURE, NEW ENGLAND WILD FLOWER SOCIETY
Celebrating Our 2013 Donors

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!

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The total giving noted below for fiscal year 2013 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

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Litowitz Foundation, Inc.
The Estate of Mary E. Wheeler+

$5,000–$9,999
Frances H. Clark and Bernard J. McHugh
Frederick Pratt
Robert D. Rands and Amelia Roboff

Caroline Blanton Thayer Charitable Trust

$1,000–$4,999
Anonymous (3)
John A. Alic
Burt A. Adelman and Lydia Rogers
Annemarie Altman and David Cook

American Public Gardens Association

Beacon Hill Garden Club
Molly and John E. Beard
Ingrid Beattie
Bose Corporation
The Boston Foundation
R. Roderick Brown
Kim and Lawrence Buell
Kimberly and Dennis Burns
Charles River Ventures, LLC
Chestnut Hill Garden Club
Gloria and Charles I. Clough
David L. and Rebecca E. Conant
Judith H. Cook
Helen and Minir Crary
James Underwood Crockett
Agricultural Technology Growth Fund
Stuart L. Cummings
Ruah Donnelly and Steven E. Dinkelaker
Pamela B. and David W. Durrant
Suzanne W. Dworsky and Alan J. Dworsky
Ralph C. Eagle, Jr.
EarthShare
Eaton Vance Management
Debbi Edelstein
Ellis Charitable Foundation
Christopher R. and Carole M. Ely
Elizabeth S. and Frederic A. Eustis
Elizabeth Farnsworth and Aaron Ellison
Lisa and George B. Foote
Foundation for Metrowest
Framingham Garden Club, Inc.
Becky and David E. Hamlin
Helen C. Hamman and Peter C. Isakson
Thelma K. and John H. Hewitt
Highland Street Foundation
Daniel Hildreth
Katherine A. Howard
Barbara M. and Robert A. Keller
Ann B. Kirk
Peggy Lahs

"After hearing Executive Director Debbi Edelstein speak about the far-reaching work of the Society, I was inspired to join the Conservation Circle and help underwrite these important efforts. As a member for the last year, I learned even more about the actions being taken across New England to protect native species and decided to train as a Plant Conservation Volunteer. I am excited to offer the Society my hands-on practical assistance as well as my philanthropic support, and I am very much looking forward to my field assignments on Martha’s Vineyard. Helping such a great cause will be a fun and rewarding way to spend some summer days!" - Kimberley Burns
Edward P. Lawrence
Marta Jo Lawrence
Lucinda H. and David S. Lee
Ellen W. and George M. Lovejoy, Jr.
Brian K. and Anne S. Mazar
John F. and Dorothy H. McCabe
Environmental Fund of the NH Charitable Foundation
Phoebe and Stephen McCarthy
Deirdre Menoyo
Anthony Mirenda and Tracey Cornogg
Sandra Moose
Steve and Vickie Morris
William L. Murphy and Claire M. Corcoran/Livingston Fund at The New York Community Trust
North American Rock Garden Society
Carolyn M. and Robert T. Osteen
Overhills Foundation
The Robert Treat Paine Association
Richard B. and Beverly S. Peiser
Pericles Partners Foundation
Karen D. and Matthew V. Pierce
Gloria J. and Roger P. Plourde/Plourde Family Charitable Trust
Bonnie B. Potter
Barbara F. and Frederick M. Pryor
Pumpkin Brook Organic Gardening
George and Nancy Putnam
Pamela P. and Griffith L. Resor
The Sandra S. Rodgers Estate+
Bruce M. and Sarah T. Schwaegler Fund at the New Hampshire Charitable Foundation
Kathleen E. and Robert C. Shamberger
Wendy Shattuck and Samuel Plimpton
George L. Shinn and Clara S. Shinn Foundation, Inc.
Edwin E. and Katherine T. Smith
Anita E. Springer and James P. Lerner
Natalie Starr
Wayne D. and Barbara Thornbrough
Henry S. Miller, Jr. and Ken Nimblett
Erhart Muller
Barbara Myles
Sherif and Mary Nada
Robert A. and Veronica S. Petersen
Margaret E. Richardson
David B. Rundle and Catherine M. Huntley
Johanna Schmitt
Loring L. and Andrew M. Schwarz
Anne T. and Douglas H. Sears
Lee A. Shane
Vivian R. Sinder-Brown
Nicholas A. Skinner
Rachel Solem and Barry Herring
Town of Ashland
Town of Framingham
Town of Southborough
Town of Weston
White Flower Farm

Supporter Members
We greatly appreciate all our members, including those in the Supporter category, whose annual dues helped underwrite the Society’s mission in 2013. There isn’t room in this magazine to list everyone, but we thank you all.

Ellen Abdow
Walter L. and Beverlee A. Adamski
Anonymous
Michael Altermann
Lisa M. Bendixen
Lisa A. Bielefeld
Roland H. Boutwell, III
Patricia A. and Russell E. Brooks
David and Marti Budding
Jonathan Bush and Amanda Dean
Patricia B. and Richard R. Clemence
Ann R. and Peter B. Coffin
Loring and Louise R. Conant
Maureen H. Conte and Robert W. Busby
Gail Davidson and Thomas R. Gidwitz/Gidwitz Family Foundation
Lucy W. and Neil J. Dean
Bayard C. Ewing
Margaret P. Farley and David Elkind
Eugene H. Ferrara

“As a Life Member myself, I was delighted to present a talk in 2013 on the history of wild gardening in America to some of the most dedicated supporters of the Society. It was wonderful to participate in this special gathering and explore this subject with such an interested audience. I have personally valued Life Membership as a way of ensuring sustained commitment to the Society and its work in native plant horticulture and conservation.”

– Elizabeth S. Eustis

Marjorie D. Greville and Elizabeth S. Eustis

Thomas S. and Karen Thornhill
Gerard B. Townsend and Polly Townsend
Robert H. Traylor
Charity and Thomas Tremblay
U. S. Charitable Gift Trust
Upper Valley Native Plant Conservation Fund at the New Hampshire Charitable Foundation
Vanguard Charitable Endowment Programs
Emily Wade
Tony and Lorraine A. Wain
Carolyn and Sturtevant Waterman
Hartley D. and Benson Webster
Gray H. and Paul M. Wexelblat
Robin E. Wilkerson and Steve Atlas
Tracey Willmott
Ellen Withrow and Robert Noah
Richard Wood
Elizabeth H. Wright
Patty Wylde

$500 - $999
Anonymous
Stephen and Joan B. Andrus
Azimuth Systems, Inc.
Kathleen Lucas Barber
Peter M. and Elaine Brem
Edgar H. Bristol
Aviva and Douglas Brooks
Frederick and Judy Buechner
Capital One Services, LLC
Keena and Chris Clifford
Anne L. Cross
The Echo Charitable Foundation
Michael R. and Barbara Eisenson/Eisenson Family Fund
Elaine W. Fiske and Philip L. Ladd
Walter J. and Anne Gamble
Janet W. and John P. Ganson
Sarah Garland-Hoch and Roland Hoch
George Hall
Jane C. Hallowell
Dena and G. F. Hardymon

New England WILD • Spring/Summer 2014 www.newenglandwild.org
“Having worked for my entire career in the world of nonprofit organizations, I take great pleasure in knowing that New England Wild Flower Society is included in my estate plan. The work this special organization does is always innovative, relevant, and cost-effective. I am very glad to be a part of it. My personal commitment to protecting native plants runs so deep that I would be delighted to offer my complimentary assistance to other friends of the Society who may wish to explore life-income gifts and/or bequest intentions to support its mission. Please contact me through the Philanthropy Department and I will be more than happy to be helpful to you.”

— Peter V. K. Doyle*

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.

Judy A. Artley and Charles T. Moses
Nancy H. August
Patricia Callan and Chuck Crafts
John S. and Jane Chatfield
Terry A. Chvisuk
Robert S. Coburn
Edward H. and Sandy Coburn
Barbara F. Coburn
Frederick and Jeanine Coburn
Virginia and Jay Coburn
Martha Franklin Coburn and Robert W. Carlson
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
Marjorie D. and Nicholas P. Greiville
T. C. Haffrenreffer
Jane C. Hallowell
Dena and G.F. Hardymon
Allyson Hayward and P. H. Kareiva
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
Michelle H. and David R. Mittelman
Monadnock Garden Club
Erhart Muller
Sally McGuire Muspratt
Beverly and Herbert Myers
Ann Dinsmore and Richard Nemrow
May H. and Daniel 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

*Peter V. K. Doyle is a Gift-Planning Specialist at Harvard Business School as well as an Overseer at New England Wild Flower Society. He can be reached via the Society’s Philanthropy Department at gifts@newenglandwild.org or (508) 877-7630 x 3802.
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.

Anonymous
Elizabeth L. Aghajanian
Annemarie Altman and David Cook
Joyce H. Bisson
Lalor Burdick
Frances H. Clark
Paul Cook
Stuart L. Cummings
Rush 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
Carolyn M. Osteen
Jessie B. Panek
Geri and Douglas D. Payne
Karen D. and Matthew V. Pierce
Barbara F. Pyor
Beverly H. Ryburn
Dori Smith
Anita E. Springer
Mary Ann Streeter
Leslie Turek
Martha Wallace
Cheryl K. Wilfong
Patricia Plum and John H. Wylde

Tributes

In 2013 we received honoraria or memorial donations in tribute to the following friends, colleagues, mentors, and loved ones.

In Honor Of
John Armstrong
Molly Beard
Anne L. Cross
Bonnie Drexler
Elizabeth Farnsworth
Marjorie D. Greville
Jane C. Hallowell
Henry Kesner
Katie Kirk
Bert and Dori Reuss
Carolyn Waterman
Gray H. and Paul M. Wexelblat

In Memory Of
Barbara Allison
Bob August
Dutchie August
Calvin H. Belbin
Harry Bowen
Paul Bradley
Sally Gates Cook
Anthony T. Cope
Dorothy Doane
Beverly Fell
Avis Golub
Roberta Garvin
Rob Held
Kay B. McCahan
Helen Nowers
Helen Picariello
Marie Rooney
Mary Ann Tynan
Mary M. Walker

Matching Gift Companies

We extend special thanks to the following businesses for their generous support in 2013.

Bank of America Matching Gifts
The Coca-Cola Foundation
IBM Corporation Matching Gifts Program
Motorola Foundation
Pfizer Inc.
UnumProvident Corporation
Uve Enterprises, Inc.
dba Dalla Terra
Waters Corporation

Conservation Services

In 2013, the following organizations utilized our comprehensive and broad-ranging expertise in plant conservation, restoration, and/or invasive species management.

Appalachian National Scenic Trail (CT, MA)
Aton Forest (CT)
Cambridge Water Department (MA)
Chicago Botanic Garden (IL)
Coastal Maine Botanical Garden (ME)
Connecticut River Watershed Cooperative Invasive Species Management Area (CT, MA)
CT Recreation and Natural Heritage Trust Program (CT)
Maine Natural Areas Program (ME)
Mass Audubon (MA)
Massachusetts Association of Conservation Commissions (MA)
Massachusetts Natural Heritage and Endangered Species Program (MA)
Nantucket Conservation Foundation (MA)
Natural Heritage Inventory (VT)
New Hampshire Natural Heritage Bureau (NH)
Parker River National Wildlife Refuge (MA)
Rhode Island Natural History Survey (RI)
U.S. Fish and Wildlife Service (Northeast Region)
Walden Woods Project (MA)
Westfield River Invasive Species Partnership (MA)
White Mountain National Forest (NH)

Custom Horticulture Services and Partnerships

At our Nasami Farm Native Plant Nursery, we are constantly expanding the list of native species available in production for large-scale landscaping and restoration projects, as well as for individual retail sales through our garden shops. The following organizations either contracted with us for custom grows in 2013 or assisted us in partnerships to provide growing services to clients throughout the region.

Amherst Nurseries (MA)
Garden Club of Dublin (NH)
Groundwork Lawrence, Inc. (MA)
Isabella Stewart Gardner Museum (MA)
Mass Audubon (MA)
Monomoy National Wildlife Refuge (MA)
Project Native (MA)
Rhode Island Natural History Survey (RI)
Town of Braintree (MA)
University of Massachusetts Amherst (MA)
The Campaign to Conserve New England’s Endangered Plants

New England is home to 388 rare or threatened plant species, including the 6 pictured here. We want to collect and store seed from all of them by 2020. It’s an ambitious goal, but in the face of global climate change, we need to act fast. With your help, we can do it.

By sponsoring seed collection in one or more of the New England states, you enable us to preserve seeds from 1,600 locations across the region. Gifts of any size - $25 for protecting a single seed, $500 for a population, and $4,000 for a species – can make a real difference. Working together, we can preserve the genetic material of plants that may otherwise be lost.

Contact newenglandwild.org/seed and pick a state—or donate to the whole program!

Sponsor Seed Collection in CT
Your gift will help protect species such as *Trollius laxus* (American globe-flower).

Sponsor Seed Collection in MA
Your gift will help protect species such as *Sabatia kennedyana* (Plymouth rose-gentian).

Sponsor Seed Collection in ME
Your gift will help protect species such as *Pedicularis furbishiae* (Furbish’s lousewort).

Sponsor Seed Collection in NH
Your gift will help protect species such as *Nabalus boottii* (Boott’s rattlesnake-root).

Sponsor Seed Collection in RI
Your gift will help protect species such as *Hypericum adpressum* (creeping St. John’s-wort).

Sponsor Seed Collection in VT
Your gift will help protect species such as *Polemionium vanbruntiae* (bog Jacob’s-ladder).

Contact philanthropy department at 508-877-7630 x3802 or gifts@newenglandwild.org
We invite you to join us on a 16-day excursion offering an exceptional opportunity to explore the natural heritage and unique flora and wildlife of Madagascar.

Madagascar is the fourth largest island in the world and has been isolated from the African continent for 30 million years. It is home to at least 12,000 plants, a high percentage of which are unique to the country. Ninety-five percent of the lemurs and reptiles, 80 percent of the flowering plants, 98 percent of the palms, and more than 100 birds are found nowhere else.

Leading this tour will be Herilala Jonah, a superb Madagascar naturalist. Representing the Society will be John Burns, our Plant Conservation Volunteer Coordinator, who has extensive knowledge of tropical plants and wildlife.

Travel with us to Madagascar

October 4-19, 2014

We hope you will join us for this adventure and discover the magnificence of Madagascar in 2014!

For more information, visit www.newenglandwild.org/learn/adult/internationaltravel
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Mertensia maritima

*Mertensia maritima*, commonly called seaside bluebells or oysterleaf, is an herbaceous perennial in the borage family (Boraginaceae). Favoring the more northern climes of Canada, in New England *M. maritima* is only common in eastern Maine. It is extirpated in New Hampshire and endangered in Massachusetts.

*Mertensia maritima* grows close to the ground on coastal beaches. It has fleshy, blue-green leaves and bell-shaped flowers that droop in clusters from the end of stems. Each flower has five petals forming a pink-to-red corolla that fades to sky blue later in the season.

The flowers, leaves, and roots of *M. maritima* are all edible, with a flavor some describe as oyster-like—the inspiration for one of its common names.

*M. maritima* is just one of the rare plants that can be found growing in Garden in the Woods’ coastal sand plain.

CLARA CHAISON, INTERN