



New England Wild Flower Society

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Conservation News

News from the Native Plant Conservation Programs of the New England Wild Flower Society

Protecting Native Plants Through Hands-on Fieldwork

by Susan Thompson, Project Manager

For New England plant conservation, there is no substitute for hands-on fieldwork. Although there are many ways to help protect native plants—public education, laboratory research, seedbanking, herbarium curation—nothing takes the place of getting your fingernails dirty out in the field.



PCVs remove invasive *Trapa natans* at Log Pond Cove

The New England Wild Flower Society's conservation team—six staff members, two fellows, and eight regular volunteers—spends a great deal of time indoors. Early in the year, they start contacting landowners

for permission to search for plants on their properties, contact potential volunteers, and write reports of the past season's progress and articles for periodicals. They answer emails from colleagues and the public, give lectures to garden clubs and community groups, and write grant proposals to help fund their activities. In addition, the staff maintains a complex database of rare plant information. Yet, when the snow melts (and sometimes before), they emerge from the office and get down and dirty with the plants they are trying to save.

Every one of the conservation staff members spends most of the spring, summer, and fall out in the field. From the tedious task of clipping *Phragmites* stalks to the exciting opportunity to explore pristine habitats looking for new populations of rare plants, each member contributes directly and actively to the health of New England's native plants and habitats.



Christopher Matrick controls *Phragmites* at Crane Pond

During the 2004 field season, the conservation staff and fellows spent a total of **4,880** hours in the field. They collected seed for NEWFS' seedbank, planted rare species for use in restoration efforts, pruned trees and shrubs to maintain open habitat for woodland edge species, and installed deer fencing to prevent browsing. The conservation volunteers filled out hundreds of field forms with information on their rare plant monitoring activities. Together, staff and volunteers cleared acres of *Phragmites*, Japanese stiltgrass, water chestnut, and other invasive plant species. These various activities take place from March to November, from northern Maine to the shores of Rhode Island. The conservation department registers more than **15,000** miles per year traveling to sites throughout New England.



Volunteers planting *Asclepias* for restoration projects

This issue of Conservation News is all about fieldwork. You will read about the hard work, frustrations, and accomplishments of NEWFS' staff and volunteers while they are away from their desks. Even as it goes to press, the conservation department is empty, the lights are off, and the staff and fellows are out there doing what they like to do best—working hard and having a field day.

2004 Conservation Almanac

Number of NEPCoP Task Force individual collaborators	195
Number of Plant Conservation Volunteers (PCV Corps)	390
Number of IPANE Volunteers	336
Number of conservation volunteers helping at NEWFS headquarters	+8
TOTAL volunteer and collaborator participation	929

Number of conservation field actions accomplished	2,485
Conservation hours volunteered	34,695
Estimated value of volunteered services	\$ 451,035
Value to Native Plant Conservation	Priceless



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A Perfect Day in the Field

Searching for rare plants can be a mixed bag. You can't control the weather or the insects, or the type of habitat where the plant is found (poison sumac swamp anyone?) You may be searching for plants that haven't been seen for several decades or are located within such a large area that they are the proverbial "needle in the haystack." Moreover, some landowners are hesitant to give botanists permission to search for

rare species on their land. Sometimes though, it all just comes together to produce a day that is so successful and so pleasant that you don't really want it to end. Botanist Brett Engstrom and I had just such a day in late June in the hills of southern Vermont.

The main objective of this trip was to find *Sphenopholis nitida* (shining wedge grass), a regionally rare species known from one location in Vermont and a few sites in Massachusetts. Its home, a dry, rocky, shaded summit of a limestone hill, also holds numerous other rare plant species. Despite several searches, it was last seen in 1983. This day began with my leaving home at 6:00 AM to make a 9:00 AM meeting with the landowner who was obviously very proud that so many rare species grew on her property. We left one of our cars in her driveway, drove to the base of the hill, and began our ascent. The day was sunny, cool, (which made the climb easier) and breezy (which kept the mosquitoes from landing). After reaching the top of the hill, we

searched the last area where the plant had been found, but to no avail. We stopped searching and ate lunch in the cool breeze looking out over the beautiful mountains. After lunch, we continued our search, and just as we were ready to give up, we found it. We took a few moments to congratulate ourselves, then recorded detailed notes on the plants, their status, and their location before proceeding to our next survey. This time, the plant was *Arabis lyrata* (lyre-leaved rock cress) another rare Vermont plant located on the same hill. I had stumbled upon four small plants of this species on a previous search for the shining wedge grass, but this time we were amazed to find more than 250 rosettes, many in flower or immature fruit. After copious note-taking and smiles all around, we came down off the hill and drove to our next location, one hill over.

Here we were searching for *Podophyllum peltatum* (mayapple), a plant native to New York and Vermont. We looked at the rough map, took our best guess at where the proper habitat might be (shaded ravines), and headed out across the hill. Soon we ran into *Lespedeza violacea* (violet bush-clover) and several large stands of *Paronychia canadensis* (smooth forked chickweed), both rare in Vermont and known previously from this site, but whose status had not been updated in many years. We continued our search of this hillside, eventually turning up more than a half dozen different patches of mayapple, often located (curiously) in relatively dry locations at the tops of cliffs.

Eventually we made our way off the hill and got back to the car at about 7:30 PM. The landowner had become worried that we'd gotten lost, but we assured her we were just having too much fun to stop. I made it home that night at midnight, but I wish that every field day could be so perfect.



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Holding Back the Flood

What could be better on a hot day than spending a little time in the water? Perhaps spending a workday wading thigh-deep in the Westfield River in Springfield, Massachusetts? This is where the conservation staff and tireless volunteers work many days each year to stem the invasion of Japanese stiltgrass (*Microstegium vimineum*).

This highly invasive, annual grass species is a prolific seed producer, so we work hard to pull the plants before they set seed in late summer. Seeds may be moved by water or by sticking to animals, people, or even automobiles. The Westfield River infestation started in a nearby neighborhood during drainage culvert work. Seeds were brought in either in the soil fill or on the machinery. Japanese stiltgrass has run rampant in the mid-Atlantic up through Connecticut and parts of New York, but the Westfield River is the only location it is known from in Massachusetts. Thus, we concentrate our efforts on keeping the species from moving farther north and hope it does not spring up in new locations.

The stiltgrass is sometimes out in the open, but often it is hiding among other grass species that it closely resembles. It has an unmistakable look once you've become acquainted with it. The alternate leaves spread almost straight out from the stem. Its most distinctive feature is a line of small hairs down the mid-vein of each leaf, which reflect light and appear silver. It still takes a couple of people going over an area from different angles to catch all of the plants, while watching out for the cut-grass (*Leersia* sp.) and tear-thumb (*Polygonum* sp.) aptly named plants that the stiltgrass sometimes hides in!

At the Westfield River, we look for improvements each year: fewer bags of stiltgrass removed because fewer plants are there. Though the size of the project is daunting and the return of Japanese stiltgrass each year can be discouraging, this is one of my favorite projects, especially on hot days. So let the rain and cool weather stay away on Westfield River days while we face the challenge of the slippery river bottom, watching out for nettles, poison ivy, and ground nesting hornets. I'll enjoy the beautiful sunshine and cool water as, like the dam on the Westfield River holds back water, we hold back the flood of invasive plants.

Two stories of *Optimism, Disappointment, and Unexpected Accomplishment*



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In Search of the Little Mermaid...

Searching 30 miles of river shore for a waif of a plant that was glimpsed only once in Massachusetts almost a century ago would seem about as worthwhile as looking for mermaids, or perhaps tilting at windmills. Nevertheless, the false mermaid, whose Latin name (*Floerkea proserpinacoides*) seems longer than its stem, was the subject of an intensive search this past spring. Conservation biologists are, after all, a bit quixotic in their hopeful work: we cultivate unreasoning optimism into a fun and

rewarding career, finding lots of interesting plants along the way—and we tend to *like* getting wet and muddy.

A happy confluence of events made the search possible. A recently published Conservation and Research Plan for the species had recommended searching for populations known from herbarium records. In New England, false mermaid is known only from four populations—all in Connecticut. Back in 1915, however, the esteemed botanist Merritt Lyndon Fernald collected plants along the Green River in Greenfield, Massachusetts. So, with a grant from the Massachusetts Natural Heritage Program, four botanists came together to undertake a new search there. Bill Moorhead and I had authored the Conservation and Research Plan. He's a Connecticut botanist known for his numerous rare plant finds. Joining us were Matt Hickler, a Ph.D. ecologist from the University of Massachusetts, and Tom Feher, a plant enthusiast who had already scouted many miles of the river.

Collectively, we put in more than 100 hours of canoeing, slogging, and looking up hill and down dale for our little mermaid. Along the way, we discovered some of the richest and most intact floodplains any of us had seen in our combined 75 years of botanical foraging. Our searches turned up sixteen new populations of nine plant species that are rare in the region. We documented exemplary occurrences of cobble bar and high-terrace assemblages—two natural community types that are rare in Massachusetts due to extensive river damming. We also found our share of poison ivy and stinging nettle, but I, for one, had the time of my life.

Alas, in the midst of this botanical hotspot, the false mermaid eluded us. If it had once formed a “dense carpet in springy woods by the Green River,” as Fernald's notes indicate, it does no longer. Could it pop up in future searches? Possibly, and at least this quixotic ecologist will take the opportunity to walk *this* stretch of river another spring in hopes of spotting it or other rarities.



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In the Field With Volunteers

On a warm day in August, seven of NEWFS' Plant Conservation Volunteers (PCVs) and conservation department staff members arrived on the banks of the Connecticut River in Westmoreland, New Hampshire. Armed with paddles, GPS units, plant identification keys, and excitement, we set out on a mission to find populations of four rare plants along the river shore. We were hopeful that our search would be fruitful, though the plants we were looking for had not been seen since 1988.

We launched the canoes and began to survey the banks of the river, following cryptic directions to the site where the plants had been observed last. My mind conjured images of a cool streamlet trickling over rock ledges and through alluvial deposits to form the open, moist habitat these rare plants required. The area would be full of the delicate orchid, lobelia, and other species we hoped to rediscover. We canoed upstream, convinced at each bend that we would soon glimpse such an idyllic seep. Instead, we were met with a harsh reality: the length of the river shore was lined with a wide, dense swath of purple loosestrife (*Lythrum salicaria*). This species was introduced to the northeastern United States in the 1800s and has spread aggressively since then. Many of New England's rivers and other wetlands are covered with this weed, which forms monocultures that crowd out native plants, including those we hoped to find. Sadly, the encroachment of purple loosestrife that we observed on the Connecticut River is but one example of the national problem of habitat loss due to invasive plant species.

After hours of fruitless searching, we called it a day, hauled our canoes ashore, and began trekking back to our cars. Despite discouragement, the PCVs remained positive and full of energy. As we walked up the steep hill to the road, they insisted on identifying unknown plants along the way. I managed to maintain their level of enthusiasm for a while, but when they pointed to yet another species with an excited “What's that?” I left them to key it out on their own and waited at the car. A few minutes later, they emerged from the woods triumphantly and announced “*Hackelia virginiana!*” This species, known as Virginia stickseed for its sticky fruits, is listed as Threatened (S2) in New Hampshire. Although we had not found the species we originally sought, the PCVs were successful in finding a new rare plant population. The volunteers proved to me, as they have many times before, that their boundless optimism and infinite curiosity could indeed triumph in the end!

These efforts highlight the need to search historical populations. Ideally, searches will turn up the target species, but if not, they can call attention to some special places that merit exploration and conservation attention. Moreover, time in the field with a motley, good-natured crew of plant geeks is always well spent.

You often hear about the New England Wild Flower Society's conservation projects. We describe the plants we try to protect and why the projects are valuable, but not what it is really like out there on the front lines of conservation management. What follows is a typical day for our conservation staff and volunteers.

Monday 7 AM: Framingham, Massachusetts. We load the truck with herbicide, safety equipment, gloves, and other essential tools. By 7:45 AM we are heading east toward Route 128. Two and a half hours later, we reach Groveland, only 55 miles away. Traffic jams are the beginning of nearly every day in the field.

9:45 AM: It's 70 degrees. We put on knee-high rubber boots and hurry off through the woods to the edge of Crane Pond Marsh, carrying 2.5-gallons of aquatic herbicide and a 15-gallon bin with all of our safety equipment. The project area is in a 10 to 12 acre marsh filled with a great diversity of wetland shrubs. At the edge, we put on long sleeve shirts, elbow length gloves, hats, and safety glasses. We wear long pants to protect us from the herbicide and the clawing thorns of swamp rose.

10 AM: We take our clippers and application bottles and strike off into the marsh. To get to the *Phragmites* we cross a hundred-meter-wide swath of emergent marsh, a floating mat of vegetation beneath which is a soupy mixture of decaying plants and water. At first the mat is firm, but after the tenth trip it is riddled with potholes and very springy. It won't take much for your boot go through and disappear—dragging you along with it.

Volunteers clip the *Phragmites* and staff members—all licensed to apply pesticide—squirt herbicide into the hollow stalks. This method prevents herbicide from reaching non-target species. The *Phragmites* is densely intermingled

A Typical Day ...



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with shrubs, which are anywhere from three to six feet high. The most feared is the swamp rose, *Rosa palustris*. This thorny denizen of the marsh seems to grow at the most inconvenient locations and is always poking and tearing at clothes and skin.

Noon: The temperature has reached the upper 80s and the humidity level is rising. The shrub marsh is made up of hummocks and hollows, and the water level varies greatly. In the hollows you may stand knee deep, while on the hummocks you feel like a giant, towering above the surrounding shrubs. The challenge is to hop from one hummock to the next in an effort to stay as dry as possible. If you miss, and many times we do, you will end up sitting in wet muck, sinking further in with each passing moment.

1 PM: We take a quick lunch break and get back to work. It's over 90 degrees with 90% humidity. There's no shade. Hornets and yellow jackets are constantly buzzing around us.

3:30 PM: Hot, muddy, and tired, we head out. We fight the rush hour traffic and get back to Framingham at 5 PM only to start loading the truck for the next day. We'll do this all week.

We spend two to three weeks a year at Crane Pond. It is a difficult project, but from a conservation perspective it is highly valuable. In the five years we've been working at this site, we have controlled five out of the eight acres of *Phragmites* and found a new population of the regionally rare Long's bulrush. Not all of our projects are quite so physically demanding, but many of them are, so when you read about habitat management projects remember the hardy staff and volunteers who are out there giving it their blood, sweat, and tears.



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SERENDIPITY: A Pleasant Surprise

New England has many rare plant species. Some are well known, while others are less well known and rarely encountered. Most of the latter are grass-like or have tiny, inconspicuous flowers, and are easily overlooked. That is why it was so surprising to find that a species of false bindweed, a vine with large flowers native to the Northeast, was virtually unknown.

Short-stalked false bindweed (*Calystegia silvatica* ssp. *fraterniflora*), a member of the morning-glory family, has been omitted from many floras that cover New England, due to its overlooked status. Its center of distribution is in the Midwest, with only a handful of historical occurrences in western New England. This vine is known to have occurred in Connecticut and Vermont, with a possible historical occurrence in Massachusetts. It has been a target

species of mine for a couple of years now, and I have sought after it in the herbarium and field. Only this year, while conducting research in eastern Vermont for the Society's upcoming new regional flora, did I finally find a living population.

Arthur Gilman, a Vermont resident and president of the New England Botanical Club, and I were driving down Route 5 in Fairlee after a very successful morning relocating a globally rare variety of the Philadelphia fleabane (*Erigeron philadelphicus* var. *provancheri*). Very happy with how the day was going, we noticed a white-flowered false bindweed twining on vegetation in a roadside field and decided to stop and examine it. To our surprise, it proved to be short-stalked false bindweed, last seen in New England in 1903 by verified records. By serendipity, we had discovered what is the only known living population of this plant in New England.

Short-stalked false bindweed reaches its eastern limit in western New England. Based on what is known about this vine, it appears to be much rarer than upright false bindweed (*Calystegia spithamea*), another member of the morning-glory family that is considered very rare in New England. What's exciting is that this discovery may encourage both Connecticut and Vermont to formally list the species as Rare, which would assist with its conservation in New England.



