

Long Island Botanical Society
Muttontown Preserve
Muttontown Lane
East Norwich, New York 11732

New Members

The Long Island Botanical Society wishes to welcome the following new members:.

Karen Gluth, Holbrook, NY
David Lombardi, Cutchogue, NY
Joseph Tighe, Westbury, NY
Mary Ann Vaclavik, Mastic Beach, NY

Programs

September 11, 2001* Tuesday, 8:00 PM

Karen Blumer: The ever-illustrious Karen Blumer will present us with a pot pourri of current aspects of botanical enigmas in her talk **“Controversial Aspects of Nature”**.

Location: Bill Paterson Nature Center, Muttontown Preserve, East Norwich

*Refreshments and informal talk begin at 7:30.

Formal meeting starts at 8:00 PM.

Directions: 516-571-8500; TNC: 631-367-3225

Field Trips

July 28, 2001 @ 10:00 AM (Saturday)

Brookside Preserve, Sayville, NY

Hike Leaders: Jenny Ulsheimer & Kathleen O'Connor

The Great South Bay Audubon Society has been designated the stewards of the Suffolk County Brookside Preserve. The Long Island Botanical Society will help inventory the summer plants of this 5.9 acre preserve.

Directions: Take Sunrise Highway to Lakeland Avenue South. Turn right at first traffic light, then left at 1st corner. Go south across the tracks to flashing light. Take right on Brook Avenue. Brookside Preserve is on the right.

August 18, 2001 @ 10:00 AM (Saturday)

Wicks Farm, Huntington, NY

Hike Leader: Barbara Conolly

Once again, the Long Island Botanical Society will inventory the plants of this Suffolk County Preserve. Last year, the Huntington Audubon Society, the stewards of the preserve, asked LIBS to inventory the spring plants. This field trip will entail the inventory of the late summer plants.

Directions: Take Jericho Turnpike to Woodbury Road. Continue north and bear right onto Pulaski Road. Park on the south side of Pulaski Road in front of a large greenhouse. The entrance to the Wicks/Froelich farm is across the street.

Sept. 15, 2001 @ 10:00 AM (Saturday)

Hauppauge Springs, Hauppauge, NY

Hike Leader: John Potente

Come walk the land of the Hauppauge Springs: the headwaters of the Nissequogue. The Hauppauge Springs Coalition (of which LIBS is a member) is striving to have it become a preserve.

Directions: Meet at the southeast corner of Old Willets Path and Veterans Memorial Highway in Hauppauge in the parking lot of the State Bank of New York (not the European American Bank!)

Sept. 22, 2001 @ 9:00 AM (Saturday)

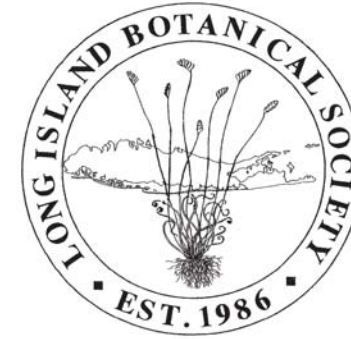
Rain date: October 13 @ 9:00 AM

Dunnfield Creek, Del. Nat. Park, DE

Hike Leader: Otto Heck

Once again, world-class hike leader, Otto Heck will lead LIBS through a forest of ferns. Among the ferns will be Rusty Woodsia (*Woodsia ilvensis*). Be sure to wear hiking shoes. Bring a picnic lunch. Due to Park rules, there should be no handling of wildlife or lifting of rocks (that host the reptiles).

Directions: Take the George Washington Bridge to Route 80. Take it to the Delaware Water Gap. Stay to the right. There are two turnouts in the Delaware National Park.: the 1st is a rest stop, the 2nd is the entrance for Dunnfield Creek. There are two parking lots. If you miss both turnouts, get off at the last exit in New Jersey (Old Mine Road). Bear left under the parkway to the Main Visitors Center. Continue on service road, go back under the parkway and make the 2nd right.



LONG ISLAND BOTANICAL SOCIETY

Vol. 11, No.3
2001

The Quarterly Newsletter

July-September

The Last Stand of Long Island's Native Plants

John E. Potente

Long Island has had some of the greatest wealth and variety of plant life in the northeastern United States. Long Island has provided bedding for the exquisite, intricate flowers of orchids, the tall sea of grasses across Hempstead waving with wildflowers, and rich forests full of hickories, walnuts, acorns, chestnuts and viburnum berries. The scores of unique and globally rare shoreline habitats were a welcome home to a myriad of plant wonders.

The breadth of plant diversity of Long Island is due to its strategic geographic positioning at the base of the Hudson in the north temperate zone. The descending waters of the Hudson River have forever soaked and misted the western shores of Long Island with estuarine flow rich in mountain minerals and northern organic nutrition. Reaching out from the New England shoreline, Long Island has had its southern beaches bathed in the salted Atlantic, teeming with oceanic flora and warm gulf stream plankton.

The diversity of Long Island plants may also give thanks to the historic onslaughts of crushing glaciers. Periodically, Long Island would receive gifts of an assortment of ground up geological goods from its northern neighbors. As powerful as the glaciers were, they carefully laid down organized sheets of fine clay and coarse sand and then topped them off with a munificence of soil preparations ready for the advent of plants. Each of the soil types strewn about Long Island provided a unique growing substrate. Many of these different microhabitats are very close to one another along this hundred and twenty mile long island.

From its early beginnings of bare soil, some of the plants descended to Long Island from the north and as the climate warmed others migrated north to Long Island from southern reaches. Currently hosting plants at the northern and southern limits of their ranges, Long Island has species that had to adapt to conditions that tested their tolerance. This encouraged subtle variations in their character and hidden genetic code.

The species of plants that found their way to Long Island also adapted to a wide range of regional microhabitats. Soil aberrations, aging freshwater wetlands, saline and briny marshes, and a full complement of the four seasons segregated unique populations within the different plant species. Over the millennia, the plants tailored their genes to their home on Long Island.

A few thousand years ago, men with torches set foot on Long Island from the west. The island was later visited by sailors from the east bearing hammers and hoes. (Continued on page 28)



Little Bluestem (*Schizachyrium scoparium*)

Ill.: Laura Vogel
From: Ill. Comp. to Gleason & Cronquist

Long Island Botanical Society
Founded: 1986 Incorporated: 1989

The Long Island Botanical Society is dedicated to the promotion of field botany and a greater understanding of the plants that grow wild on Long Island, New York.

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Long Island Botanical Society

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Article & News Submissions

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Printed by Native America

Society News

Ordaining Orient Beach: Orient Beach State Park is one of the natural jewels of the Gardiner's Bay Estuary System. While the eastern half of the park is developed for the visiting public and has many recreational facilities available, the western half, known as Long Beach, remains pristine. This area stretches for 2 miles west into the bay. Access is gained only by hiking. There are 18 species of rare plants found in the park in addition to an excellent globally and state rare ecosystem known as a Maritime Red Cedar Forest. One can also find federally endangered Piping Plovers and Roseate Terns. Threatened species, such as Least Terns, Common Terns, Osprey and Marsh Hawk, either nest or forage there. This area is so special, it was proclaimed a National Natural Landmark in 1980. Currently, the State continues to ban boaters from landing in this fragile ecosystem. Recently, intense pressure from a select few has been brought upon the State to permit boats to land in this delicate habitat. Please show your support to continue to protect and preserve this national landmark as a last haven for rare and wild plants and animals. Let the State know that access to the Long Beach section of Orient Beach State Park should continue only by foot. You may contact Commissioner Bernadette Castro at: New York State Office of Parks, Recreation & Historic Preservation, Empire State Plaza Agency Building, Albany, New York 11238.

Society Slate: The standing committees of the LIBS, whose chairpersons are appointed, not elected, are coming due for fulfillment in November. As Zu Proly has completed her two-year term as program chairperson, that position is open and the society welcomes an interested member.

In Memory

Dennis Puleston: On Friday, June 8, Dennis Puleston died quietly in his sleep at the age of 95. Dennis Puleston was a long time member of the Long Island Botanical Society and gave many talks and slide presentations of his worldwide expeditions. Dennis led a full life of travel, nature photography, art, environmental activism, lecturing, and sailing. He made Bellport, Long Island his final home. Dennis attained somewhat of a



legendary status among naturalists as an accomplished birder and an expert on plants of the tundra. He supported and donated generously to the effort to save the Grandifolia Sandhills of Baiting Hollow (which ended in disappointment). He was most notably known for his role in helping to ban the use of DDT and will be remembered as a great naturalist for a long, long time.

Aeolus

Aeolus, God of wind
Visited Long Island
In earnest 2,000 decades ago.
In the wasting wake of
The Wisconsin glacier,
Long Island dried out.
Loess and silt were
Lofted into dust clouds
That rivaled the dust bowl,
Laying dirt down on
North Fork plains,
Hempstead Plains,
Terryville out washes,
These soils held water...
Potatoes followed.
And finally...
Stark 3,000 square foot
Vinyl-sided monoliths,
Each reminding us
Of Wisconsin's Grand Visit.

-Tom Allen Stock
July 1999



Photo: Stephen Zimic

- E. Hickory Series (Hickory dominant or co-dominant)
 - 14. Sweet Pignut Hickory-Red Maple Association
example: Suffolk: Greenport Nature Center (Moore's Woods)
 - 15. Bitternut Hickory-Sourgum Association
example: Suffolk: Hither Woods, Montauk Point
 - 16. Shagbark Hickory-Red Maple Association
example: Suffolk: Ridge/Whiskey Road
- F. Beech Series (Beech dominant or co-dominant)
 - 17. Beech-Sweetgum Association
example: Nassau: Wantagh Creek, North Bellmore
 - 18. Beech-Sourgum-Red Maple Association
example: Suffolk: Point Woods, Montauk
- G. Sourgum Series
 - 19. Sourgum Association
example: Suffolk: Heckscher State Park, Great River
- H. Pin Oak Series
 - 20. Pin Oak Association
example: Queens: Fresh Meadows at 164th Street (extirpated); Cunningham Park, kettle ponds
- I. Black Walnut Series
 - 21. Black Walnut Association
example Nassau: Grace Forest, North Hills, kettle pond
- J. Willow Series (Willow dominant or co-dominant)
 - 22. Black Willow-Silver Maple Association
examples: Queens: Oakland Ravine, Bayside; Gabler's Creek, Douglaston
- K. American Elm Series
 - 23. American Elm Association
example: Queens: Train's Meadow, Kew Gardens (extirpated)
- L. Swamp Cottonwood Series
 - 24. Swamp Cottonwood Association
example: Nassau: North Hills Golf Course (extirpated?)
- ii. Conifer Swamps
 - M. Atlantic White Cedar Series
 - 25. Atlantic White Cedar bog forest Association
examples: Nassau: Tackapausha Preserve, Seaford; Carmans River, West Amityville (extirpated?);
Suffolk: Cranberry Bog Preserve, Cedar Ponds, Sears-Bellows Park, Riverhead
 - 26. Atlantic White Cedar-Red Maple transition forest Association
examples: Suffolk: Cedar Pond, Riverhead
 - 27. Dwarfed Atlantic White Cedar shrubland Association
examples: Suffolk: Sears-Bellows Park, Riverhead

Editor's Note: The author considers this a work in progress and seeks comments from the many field botanists on Long Island. Contact: agreller2@erols.com

The final portion of the classification will be published in the next issue of the LIBS newsletter.

Letters to the Editor

The Marine Program of Cornell Cooperative Extension of Suffolk County (CCE) needs a few good volunteers to be our eyes and ears along local beaches. Anyone who regularly walks the bay beaches is asked to contact CCE to serve as a monitor for the presence of floating or stranded live Eelgrass shoots.

Eelgrass, which serves as a shelter for marine creatures, was largely wiped out by the brown tide plague of the 1980's in the Peconics. Many spots remain bare today. In response, the Peconic Estuary Program began funding small-scale transplanting efforts from existing beds on the South Fork. Data gathered by volunteers will help in the creation of a model to be used in charting future restoration efforts.

Chris Pickerell
Cornell Cooperative Extension
(631) 852-8660



From: III. Companion to Gleason & Cronquist

Eelgrass (*Zostera marina*)

Plant Sightings

Persimmon: Steve Clemants noted a solitary Persimmon (*Diospyros virginiana*) at Heckscher Park near the Administration Building. Another single species is at Planting Fields Arboretum and a circle of them exist at Persimmon Pond in Muttontown Preserve. Andrew Greller has sighted ca. 6-8" dbh (diameter of trunk at breast height) specimens of Persimmon that appear to have seeded into a secondary woodland from a larger, older tree cultivated nearby. The habitat is a hillside seep and accompanying trees are ash, tuliptree and sweetgum.

Goldenrod: Rich Kelly noted that the rare *Solidago rigida*, which Eric Lamont reported, is being sold in nurseries as a horticultural plant.

Chestnut: Unfortunately, the American Chestnut (*Castanea dentata*) tree bearing fertile chestnuts found along the road in Manorville by Norman Soule has been severely cut back by roadside trimming. Fortunately, however, one of the nuts retrieved from it last fall has sprouted this spring on the private preserve of Native America.

Pussy Willow: Betty Lotowycz noted that while Christian churches in this country generally give out palm leaves for Palm Sunday, it is the custom in the Ukraine to use Pussy Willows instead. She mentioned that at Saint Josephat's Monastery in Lattingtown, Pussy Willows are still used as they are in the Ukraine.

Creeping Shadblow: The observing eye of Philip Marshall has discovered a low creeping form of Shadblow (*Amelanchier stolonifera*) in the Pine Barrens of Manorville. Nestled among the blueberry one might easily walk right past it.



Amelanchier stolonifera in the Pine Barrens

The Last Stand of Long Island's Native Plants (continued from page 13)

The Native Americans burned off swaths of field and forest for agriculture. The consequences of their local fire clearings were probably minimal. They amounted to some displacement and minor shuffling of plant species. As the tribes relocated, the woody plant species were free to return and reassert themselves over time. Blueberries and huckleberries would creep in, soon to be followed by pioneering Black Cherry (*Prunus serotina*), Pitch Pine (*Pinus rigida*) and Sassafras (*Sassafras albidum*). Before long, the oaks and hickories would resprout and resume their dominance. The land healed over and all was forgotten.

The next generation of house guests was a little more serious about its habitat alterations. The European lumberjacks and tillers became progressively more aggressive with the land. In the early 1600's, Long Island was pilfered and the choice, large White Oaks (*Quercus alba*), along with their genetic material, were cut and cargoed off the island. Stranded trees were left to continue the oak family.

Subsequent settlement of Long Island entailed utilization of oak and chestnut wood for housing construction. By the late 1800's most of Long Island had been stripped of its remaining forestland for cordwood that was sent west to fuel the furnaces of Manhattan. The settlers went on to uproot remaining trees, digging deeper into the soil and mixing up the fine layers of clay, sand and silt. Deserted fields and furrows left fallow took longer to recompose themselves into organized forest. These disruptions altered the outcome of the succeeding habitats.

Man's initial interplay with the native plants of Long Island merely involved temporary rearrangement. But with each boatload of cargo from abroad came bouquets of foreign flowers, novel species of potted plants, new agricultural breeds for the farm fields, exotic garden delights, forage grasses for livestock, and turf grasses for sterile front lawns. Along with the plants brought in for food and amusement came the invasives: the newly introduced plants that knew no boundaries and trespassed onto virgin native habitats.

While the clearing of land for agriculture, housing and commerce has eliminated most of the native plant biomass of Long Island, the invasive

plants have invited themselves onto the remaining plant enclaves. Oriental Bittersweet (*Celastrus orbiculatus*), an Asiatic woody vine brought to North America in the mid-1800's, is gaining ground, sending its woody tendrils to the treetops where it monopolizes the canopies. It is depriving the forest edge trees of sunlight and they are collapsing under the weight of these powerful vines.

Moreover, the orange roots of Oriental Bittersweet spread wide distances forming comprehensive underground mats that periodically resprout. They are highly efficient absorbents and soak up available water. The native trees in the proximity of these "floor mats" are often seen defoliated due to the stress of dehydration. Clonal growth, coupled with prolific seed production, makes Oriental Bittersweet a formidable menace. As the tangled trees give way, the interior of the forest is opened up and the choking vines penetrate further. Oriental Bittersweet can be seen forming walls of invasion along our parkways, within our preserves and throughout yards of Long Island.



Oriental Bittersweet can become quite a large vine. Removing it is not always easy.

Classification for Mature Forests and Related Woody Vegetation on Long Island: Second Approximation, By Andrew M. Greller, Ph. D., Research Associate, Brooklyn Botanic Garden

(Continued from LIBS Newsletter Volume 11, Number 2, page 17)

iii. Pitch Pine Dominant

F. Pitch Pine Series

17. Pitch Pine Association

a. Pitch Pine/Heaths Facies

examples: Suffolk: Cedar Pond, Riverhead

b. Pitch Pine/Bear Oak Facies

examples: Suffolk: Holbrook; Medford; Islip; Patchogue

c. Pitch Pine/early Sedge Facies

example: Suffolk: Napeague Dunes

d. Pitch Pine/Dwarf Chinquapin Oak facies

examples: Suffolk: Deer Park, Brentwood

II. Swamp Forests and Related Shrubland (Edaphic Forests of Flooded Soil)

i. Hardwood Swamps

A. Tuliptree Series (Tuliptree dominant or codominant)

1. Tuliptree Association

examples: Nassau: Welwyn Preserve, Glen Cove; Theodore Roosevelt Natural History Park, Oyster Bay

2. Tuliptree-white ash-red maple Sweetgum Association

examples: Nassau: Lake Success Golf Course; Shu Swamp, Mill Neck

3. Tuliptree-Black Birch-Sweetgum Association

examples: Nassau: Kings point Park, Great Neck

B. Red Maple Series

4. Red maple Association

example: Suffolk: Blydenburgh Park, Hauppauge

5. Red Maple Association

examples: Queens: Cunningham Park, Alley Park kettle ponds; Nassau: Meadowbrook Park (north)

6. Red Maple-Black Birch Association

example: Nassau: Fox Hollow Preserve, Syosset

7. Red Maple-Persimmon Association

example: Nassau: Muttontown Preserve

8. Red Maple-mixed hardwoods Association

a. Red Maple-Sourgum Facies example: Nassau: Meroke Preserve, Merrick

b. Red Maple-Hackberry Facies example: Nassau: Meroke Preserve, Merrick

c. Red Maple-Sassafras-Black Birch-Sourgum Facies example: Nassau: Kings Point Park, Great Neck

C. Sweetgum Series (Sweetgum dominant or co-dominant)

9. Sweetgum Association

example: Nassau: Roosevelt Park South

10. Sweetgum-Sourgum Association

example: Nassau: Roosevelt Park south

11. Sweetgum-Sourgum-Mixed hardwoods Association (Black Birch-Red Maple)

example: Nassau: Kings Point Park, Great Neck

D. White Ash Series (White Ash (White Ash dominant or co-dominant)

12. White Ash-Wild Black Cherry Association

example: Queens: Alley Creek

13. White Ash-Black Walnut Association

example: Suffolk: Cold Spring Harbor, 2nd lake

(Continued on next page)

There are already some projects in progress that accommodate the Long Island lineage native plants. USFWS has become involved in the FAA site at the Sayville grasslands. The goal is to expand the existing grasslands to 70% of the site. The forested area is cut and existing grasses and wildflowers are simply allowed to regenerate. As there is ample native flora existent, no grass or wildflower introductions are done.

Native America was inspired by the surprising selection of native grasses and wildflowers that sprouted on their own accord, from wind and bird dispersals in places where the ornamental and invasives were removed. In 1998 Native America began removing the native plants it obtained, early on in its restoration, that were from sources outside of Long Island.

Another extremely successful restoration has taken place by the Nassau County Department of Parks at the Flagg Meadow portion of Tiffany Creek Preserve. Beginning in 1993, under the direction of Allan Lindberg, clearing saws, field mowers, hand shears and stump treatments with herbicides were utilized to treat a 6 acre phragmites-infested wet meadow. He has witnessed the proliferation of Turk's-Cap Lily (*Lilium superbum*), Cardinal Flower (*Lobelia cardinalis*) and the recovery of a surprising bonus... Northern Tubercled Orchid (*Platanthera flava* var. *herbiola*) which has not been seen on Long Island since 1927. One must wonder if the delicate orchid would have reappeared if a more aggressive approach of turning over soil had been done.



The low tech field restoration at Tiffany Creek has yielded high botanical reward. Selective removal of unwanted plants entails laborious hours out in the field. Here, Phragmites is bundled and Round-up is applied. Fine-tuned targeting like this avoids collateral loss of desired plant species.

All Lindberg

The most current project is the 100 acre Wick's Farm in Huntington: eight acres of fields, overgrown with Autumn Olive, Japanese Honeysuckle and Mugwort to be converted to a grassland. SCDP is willing to assist in the restoration. However, the plan underwritten by the USDA requires 20 pounds of grass seed per acre, which, at this time, is only available as off-Long Island stock. As stewards of the property, the Huntington Audubon Society will be the jury. Planting non-locals may be expeditious, but patience with long-term expectations may yield superior gains.

The key question in native plant restoration is what is our goal? If it is to enhance habitat for indigenous wildlife, then shouldn't we strive to be as accurate as possible with the indigenous flora? Or does it even matter? It may depend upon the species. Some plant species may have little or no genetic variation, whereby continental exchanges are inconsequential. On the other hand, some subspecies may have become highly specialized with manifestations that we don't yet understand. Many of the native plants of Long Island may be a breed unto themselves and the corruption of their genotypes with outside plant stock may be, ultimately, detrimental. If that is the case, the introduction of non-local genotypes may be undermining our efforts trying to help restore the ecosystem. We may be, inadvertently, compromising five to ten thousand years worth of precision natural selection that has taken place on Long Island. In any event, until we obtain the genetic breakdown along with the ecological implications, it would seem wise to go to great lengths to protect the integrity of the last stand of Long Island's native plants.

The author wishes to thank the following for their time and assistance in preparation for this article:

- Allan Connell, Natural Resources Conservation Service
- Nick Gibbons, Suffolk County Parks & Recreation
- Jean Held, South Fork Natural History Society
- Eric Lamont, Long Island Botanical Society
- Allan Lindberg, Nassau County Department of Parks
- Bob Parris, United States Fish and Wildlife Service

References

- HUANG, H., DANE, F., KUBISIAK, T. 1998. Allozyme and RAPD Analysis of the Genetic Diversity and Geographic Variation in Wild Populations of the American Chestnut. *American Journal of Botany*, 85: 1013-1021
- KARTESZ, J. 1994 A Synonymized Checklist of the Vascular Flora of the U.S., Canada, and Greenland. *Biota of the American Program of the North Carolina Botanical Garden*

While Oriental Bittersweet, along with Japanese Knotweed (*Polygonum cuspidatum*), Japanese Honeysuckle (*Lonicera japonica*) and a host of other invasives are overcoming the forested preserves, Mugwort (*Artemisia vulgaris*) is having a field day in the meadows. Once in place, it forms a dense core of tightly bound vegetation smothering native plant growth. Monocultures of mugwort are on the march and Long Island's native plants are reacting by withering and dying back.

The list of introduced weeds grows every year on Long Island and the native plants are retreating. Preserve managers on Long Island must now do battle with the invasive plants to protect the remains of the native plants. Unfortunately, the contest can become overwhelming. Approaches include cutting away at the invasives with bow saws, chain saws, axes, brush hogs, gang mowers, tractors, payloaders and even the bane of the environmentalist: bulldozers. Much manpower is needed and herbicides must often be resorted to.

Americans spent the last five hundred years removing Long Island's native plants. In the 1900's many Old World and Asiatic wild plants were shoveled in. Japanese Rose (*Rosa rugosa*) and Japanese Black Pine (*Pinus thunbergii*) were brought in to prevent soil and beach erosion. As we watched, fields and meadows became overrun by Asiatic Multiflora Rose (*Rosa multiflora*) and Asiatic Autumn Olive (*Elaeagnus umbellata*) introduced in the name of conservation.

Finally, in the 1990's, Long Islanders began to appreciate and promote the value of the native plants. Native bird life and other endangered animal life depended upon them, medicinals were extracted from them, and rare habitats needed them. And so, the native plants that remained were rediscovered and elevated in stature, no longer being called weeds.

Long Island nurseries were happy to display pots of "native" plants shipped in from growing fields in the sunbelt, the deep south and the great plains. Mail order catalogs were quick to include glossy photos of the "native" plants and homeowners hooked on to the fad. Any plant growing wild in the United States was fair game and would now be shipped across state lines in the native trade. This initial flurry of "native" plant swapping did much to disperse native plants out of their natural ranges. Purple Coneflower (*E c h i n a c e a*

purpurea) and Black-Eyed Susan (*Rudbeckia hirta*) cultivars from the west appeared in yards on Long Island. Wildflower mixes gathered from different regions of the United States were gleefully spread amongst the Long Island native plants along traffic medians, garden rows, fields and meadows. As long as they were from the same country, plants were considered "native".

Unfortunately, naturalists pointed to invasive aspect of some of the native plant transports. Black Locust from the Appalachian Mountains, originally introduced to Long Island during colonial times, has become a rampant "weed tree" on Long Island. Salt Marsh Grass (*Spartina alterniflora*) from the east coast has become an invasive in the west coast. Newer thinking then sought to limit native plantings to only those species of plants that originally existed in the given habitat.

Some land managers began looking to reclaim lost habitats. These are the restorationists. They sought to retrieve land and bring it back into the realm of a native habitat.

In 1990, Native America (a Long Island-based environmental organization dedicated to habitat rehabilitation) began a plant restoration on a private preserve of three acres in Hauppauge, Long Island. Ornamental and invasive plants were removed manually and plants native to the area were purchased and reintroduced. However, small rewards would continually appear as token native plants would sprout, unexpectedly, perhaps after years of dormancy or after relief from suppression of the exotic plants. Encouraged by this natural healing of the land, Native America ceased purchasing plants from outside sources in 1995 and allowed the habitat to steer its own course.



Butterfly Weed (*Asclepias tuberosa*) that germinated, spontaneously, at the restoration on the Native America Preserve.

John E. Potente

While the restoration on the Native America Preserve is proving rewarding and successful, it is a small project entailing three acres, is labor intensive and is time consuming. Larger scale projects tempt heavier, expensive equipment and often demand quicker results for financial justification. Perhaps the biggest obstacle in this endeavor is not the will, but the means.

With the loss of grasslands in New York, the State has placed a high priority on recreating grassland habitat for prairie birds such as bluebirds, meadowlarks, and bobolinks. Grassland habitat on Long Island occurred historically as the Hempstead Plains. Other extensive stretches of grassland were most likely created through atmospheric lightning, forest fires, or instigations of man. Given natural succession, most of Long Island's grasslands ultimately revert to forest. Therefore, most grasslands on Long Island warrant persistent intervention.

The United States Fish and Wildlife Service (USFWS) has been conducting wetland restoration projects in National Wildlife Refuges on Long Island and began off-refuge grassland restorations in 1996. They possess a disc amphibious excavator for wetland restoration, a low ground pressure dozer for upland forest openings and a low ground pressure ATV for herbaceous clearings. Their tractor pulls a grass seed drill that is useful for inserting the feathery seeds of the warm season grasses. Their seed suppliers are either out of state or local Long Island dealers who have purchased seed from out of state.



Tractor with discs attached at rear. The discs are effective in breaking up soil and inhibiting existing vegetation. While discing is a useful method of starting from scratch, its effectiveness on Mugwort remains questionable. It also poses a risk of eliminating the constituent native v e g e t a t i o n .

The USFWS has served the Hoffman Center in Muttontown (a former golf course), the Avalon Preserve in Stony Brook, and various state lands. These sites were seeded with warm season grasses, which cannot simply be broadcast but require a seed drill to secure them into the ground. The source of these seeds is **the midwest**.

The United States Department of Agriculture (USDA) offers a Wildlife Habitat Incentive Program. The USDA shares the cost of grassland restoration providing the landowner abides by the project protocol. To date, the USDA has assisting in seeding over 20 acres on private properties on Long Island with over a hundred pounds of warm season grasses. The general seed mix includes Switchgrass (*Panicum virgatum*), Big Bluestem (*Andropogon gerardii*), Little Bluestem (*Schizachyrium scoparius*), Indian Grass (*Sorghastrum nutans*), Eastern Gamagrass (*Tripsacum dactyloides*), and Side Oats Grama (*Bouteloua curtipendula*). The source of the grasses are from **Nebraska**.

Suffolk County Department of Parks (SCDP) has recently become active in grassland restorations. Pine Meadows, a 650 acre county holding just east of County Road 51, NE of the "Stargazer" sculpture on County Road 111, contains a 60 acre grassland. SCDP has burned a western tract to foster native grass growth. A ten acre eastern tract was unreceptive to a burn, was cut with a flail mower, the ground broken with a scalloped disc, and seeded with grass seed supplied by the USDA. The seed source was **Pennsylvania**.



Suffolk County's Pine Meadows grassland restoration after one year. The area on the left was burned and allowed to reseed with resident native grasses. The area on the right was mowed, disced, and seeded with 200 pounds of grass seed that was trucked in. This is an ideal invitation f o r a s t u d y .

Private ventures into land restorations have also gained momentum. The Atlantic Golf Course in Southampton contains landscape designed with Hairgrass (*Deschampsia flexuosa*). The availability of a Long Island seed source was insufficient and so a supply from **Denmark** was used. After the Pine Barrens fire of 1995, local volunteer groups planted Pitch Pine from **upstate New York** (a different genotype) and **New Jersey**.

Evolution is an ongoing process and even though a plant native to this continent may survive here, plant populations of local origin would be expected to fare better and serve the local habitat better. The importation of non-local "native" plants and the substitution of them for local native plants, even though they may be of the same species, may present drawbacks. To encourage the use of the native plants and seeds that have been derived from Long Island soil and not from hundreds of miles away, the notion of "local genotype" has been advanced. The reasoning is that over the past five to ten thousand years local plant species have become acclimated to the local conditions of Long Island and have further evolved unique traits within their species. The time has come to evaluate the effect of displacement of our local Long Island native plants with non-locals.

Simple observations often clue us in on differences of the same species that are derived from different locales. Jean Held, editor of the SOFO newsletter, noticed that Pennsylvania Sedge (*Carex pennsylvanica*), that she mail ordered from a midwest grower, grew better in the sun. On Long Island, Pennsylvania Sedge, accustomed to a deciduous forest, ordinarily grows in shady areas. In the midwest, Pennsylvania Sedge, which evolved in open prairie, fares better in the sun.

Same species plants from different latitudes may be programmed for seasonal dates in which they set their buds, leaf out in spring, set flower and release pollen. Howard Bright, of Ion Exchange in Iowa, points out that "Big Bluestem from Florida and Iowa don't exchange effectively. They appear the same, but growth will be stunted in the non-native environment and they have different seasons for flowering." These critical events are orchestrated with the migration of birds and butterflies up and down the Atlantic flyway. Uncoordinated clockwork can be dangerously disruptive to hungry migrators.

Research on American Chestnut (*Castanea dentata*), has focused on regional differences in genetic composition and the existence of local alleles to help understand the course necessary for a proper recovery of the species. Should a tree from a warmer latitude be subjected to earlier frost than that for which it is programmed or a tree from a northern latitude subjected to unfamiliar drought or a heat spell, it may become debilitated. Worse yet, once non-local "natives" begin breeding with the local natives, the reliable genotypes of Long Island heritage will be no more. They will all be hybrids.

(Continued on next page)

Historical Classification of Little Bluestem showing a wide genetic variation

- Schizachyrium scoparium**
- ssp. divergens
- SY=*Andropogon divergens*
- SY=*Andropogon scoparius* var. *divergens*
- SY=*Andropogon scoparius* var. *virilis*
- SY=*Schizachyrium scoparium* var. *divergens*
- SY=*Schizachyrium scoparium* var. *virile*
- ssp. littorale
- SY=*Andropogon littoralis* Nash
- SY=*Andropogon scoparius* var. *littoralis*
- SY=*Schizachyrium littorale*
- SY=*Schizachyrium scoparium* var. *littorale*
- ssp. neomexicanum
- SY=*Andropogon scoparius* var. *neomexicanus*
- SY=*Schizachyrium scoparium* var. *neomexicanum*
- ssp. scoparium
- SY=*Andropogon praematurus*
- SY=*Andropogon scoparius*
- SY=*Andropogon scoparius* var. *ducis*
- SY=*Andropogon scoparius* var. *frequens*
- SY=*Andropogon scoparius* var. *polycladus*
- SY=*Andropogon scoparius* var. *septentrionalis*
- SY=*Schizachyrium praematurum*
- SY=*Schizachyrium scoparium* var. *frequens*
- SY=*Schizachyrium scoparium* var. *polycladum*

Note: ssp. indicates subspecies

The above table shows that Little Bluestem (*Schizachyrium scoparium*) was historically "split" into 4 different species and 8 different varieties. Extensive seeding of one particular seed source may lead to a generic plant stock that disregards the native Long Island varieties.