

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

### Elections

Long Island Botanical Society officers were elected at the November meeting. The following officers will serve for a two year term:

President: Eric Lamont  
Vice President: Skip Blanchard  
Treasurer: Carol Johnston  
Recording Secretary: Barbara Conolly  
Corresponding Secretary: John Potente

### Treasurer's Report: 1999

Opening Balance (Jan.1, 1999):	6,944.49
Unrestricted Funds:	
Income Total	2,077.44
Expenses Total	2,968.68
Net Loss	891.24
Restricted Funds:	
Income total	12,210.00
Expenses Total	5,998.65
Net Gain	6,211.35
Closing Balance (Dec. 31, 1999):	12,264.60

Respectfully Submitted:  
Carol Johnston,  
Treasurer

## Programs

**April 11, 2000** Tuesday, 7:30 PM

**Frank Hurley:** Frank Hurley, of the Muttontown Preserve will give a stinging presentation; **"Life of the Drones"** divulging his fascination as a beekeeper.  
Muttontown Preserve, East Norwich\*

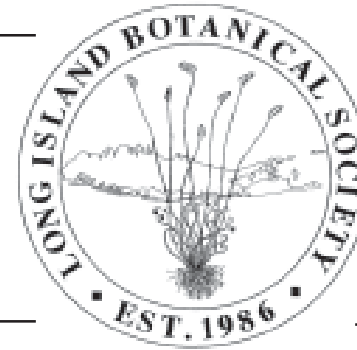
**May 9, 2000** Tuesday, 7:30 PM

**Jessica Gurevich:** Jessica Gurevich, Professor of Ecology at the State University of New York at Stony Brook will show slides of some unpopular immigrants and stowaways in her presentation: **"Invasive Plant species in the Long Island Forest"**  
Earth Science Center, SUNY Stony Brook\*

**June 13, 2000** Tuesday, 7:30 PM

**Annual Bar-B-Que:** Come treat your palate to the exceptional open charcoal cooking of Eric Lamont. Eric has had years of experience turning hot dogs and flipping hamburgers at this once a year affair. He is expected to courteously dazzle your appetite once again by personally overseeing your grillside orders. And let's not forget to mention the long table of home prepared salads concocted by well-seasoned botanists that awaits you.  
Location: Bill Patterson Nature Center, Muttontown Preserve, East Norwich\*

\*Refreshments and informal talk begins at 7:30.  
Formal meeting starts at 8:00 PM.  
For directions call: 516-571-8500



# LONG ISLAND BOTANICAL SOCIETY

Vol. 10, No.2  
2000

The Quarterly Newsletter

Apr.-Jun.

## The Status of Sweetbay Magnolia on Long Island, New York

Daniel Karpen

Sweetbay Magnolia (*Magnolia virginiana*) is near the northern limit of its range on Long Island, New York. It is a smooth barked magnolia commonly found growing in swamps and along the borders of ponds from Essex County, Massachusetts, Long Island, and New Jersey south along the coastal plain to Florida and west to Texas. It is a slender tree or low bush 20 to 30 feet high, with a trunk rarely more than 15 to 20 inches in diameter, with slender bright green branchlets marked by narrow horizontal pale lenticels, gradually turning bright red-brown in their second summer (Sargent, 1961).

In New York State, Sweetbay Magnolia is currently known to occur naturally on Long Island and on Staten Island. Extant populations from Long Island occur in Nassau and Suffolk counties; historical populations from Brooklyn, Queens, and the Bronx have been destroyed, although individuals escaped from cultivation have been reported from the vicinity of the Bronx Zoo. Sweetbay Magnolia is currently listed as "critically imperiled" in New York State because of its extreme rarity; less than 5 naturally occurring populations are known from the state and very few individuals remain (Young, 1998).

In *The Trees of Long Island*, George Peters states that it is "a southern tree that originally was found in deep swamps along the lower ends of streams from New Utrecht (Miller, 1889) to Speonk (NYSM), (NYBG), (BBG). According to H. Hicks, it was systematically dug out from each stream by

nurserymen seeking plant material suitable for landscaping. It may still (1972) persist in the Speonk swamps. There is one North Shore record at Flushing (BBG)" (Peters, 1973). According to Eric Lamont, the population at Speonk is still thriving and is probably the largest population in the state.

I have lived in Lloyd Harbor for the past 43 years. The largest population of Sweetbay Magnolia was known to me about 40 years ago as a youngster near several ponds along West Neck Road just north of Mill Road about 2.3 to 2.5 miles north of Route 25A. The trees are best developed on a small island about 60 feet in diameter in a pond at 394 West Neck Road now belonging to Tintle. The trees can be easily seen from the shore of the pond which borders West Neck Road. In June, one can smell the fragrance of the blossoms by standing there. (Continued on Page 3)



Sweetbay Magnolia (*Magnolia virginiana*)  
Illustration: Deborah Morrison  
From: Mitchell & Beale, 1979

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.

#### Executive Board of Directors

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Eric Lamont	(631) 722-5542
Vice President	
Skip Blanchard	(631) 421-5619
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Carol Johnston	(516) 676-6648
Recording Secretary	
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Betty Lotowycz	(516) 676-2047
Jane Blanchard	(631) 421-5619
Editor	
John E. Potente	(631) 361-6756

#### Membership

Annual Dues of \$15 payable to:  
Long Island Botanical Society

Mail to:

Lois Lindberg, Membership Chairperson  
45 Sandy Hill Road  
Oyster Bay, New York 11771-3111

#### Article & News Submissions

Long Island Botanical Society  
P.O. Box 5001  
Hauppauge, New York 11788  
LIBS@nativeamerica.org

## Society News

**Grants for plants:** LIBS wishes to thank Steven Englebright, a New York State Assemblyman, for helping procure a \$2,500 grant that will be used to help construct an atlas for Long Island plants. This will enable an intern to begin cumulative studies. Informing LIBS of the grant Assemblyman Englebright wrote: “Your organization’s work is important to our community and deserves the support and recognition of New York State. Thank you for your interest in requesting the assistance of my office on this important project to benefit our community.”

**LIBS lights the “Big Screen”:** LIBS botanists Eric Lamont and Skip Blanchard will be appearing on national television. The PBS program “Nature” will be featuring “Obsession with Orchids” on channel 13, April 16 at 8:00 PM. The program will delve into the secret life of orchids with photography never before captured on film. After 25 minutes of spectacular videography, the attention goes to the eastern tip of Long Island where Eric and Skip, along with Jim Ash (Director of SOFO) and David Taff (Ranger at Jamaica Bay NWR) guide the filmmakers through the Walking Dunes.

**Conserving coastal contour:** Three parcels comprising 105 acres about the Corey and Cranberry Ponds in Wading River are the focus of a preservation effort. There exists a rare coastal plain pond ecosystem and LIBS has provided input and information on rare plants to interested parties. The North Fork Environmental Council, The Long Island Pine Barrens Society, The Nature Conservancy, and others are in favor of seeing the area protected.

**Keeping it together:** The Center for Biodiversity and Conservation of The Museum of Natural History and the Wildlife Conservation Society’s Metropolitan Conservation Alliance are co-sponsoring a two day program on land use called “Nature in Fragments”. For info call: 212-769-5200

**Talmage trashes the Sandhills:** On February 1, the new town board of Riverhead overrode the islandwide pleas from the environmental and scientific community and expeditiously passed a zone change and concurrently a site plan approval for a game of golf that is to be sandwiched onto the rare and beautiful Grandifolia Sandhills. The board cited justification from the testimony of Les Sirken, a former teacher from Adelphi U., who cooperated on behalf of the developer.

Owner Bill Talmage promptly began creating multiple extensive swaths through the last large unprotected forest land on the north fork of Long Island. The Oak-beech forest that acted as a buffer zone for the rare dwarf beech trees has been severely fragmented and the broken oak and beech trees are being piled up as “waste debris”.

The Long Island Pine Barrens Society, along with the North Fork Environmental Council, has filed a lawsuit against the Riverhead Town Board for making “an arbitrary and capricious decision”.

## Field Trips

### April 15 @ 10:00 AM, (Saturday) Caumsett State Park, Lloyd Neck, NY Hike Leader: Ray Welch

The hike will lead us to one of the few, perhaps only, remaining native populations of bloodroot (*Sanguinaria canadensis*): a spring wildflower once common along the north shore. Slippery Elm is another species likely to be found along the way. This roughly 3 mile ramble will take us from fields and upland woods to damp hollows and, perhaps, to a saltmarsh or the beach. Bring lunch and liquids.

**Directions:** Take Route 110 north to Main Street, Huntington (Route 25A). Turn left (west) and go 3 blocks to light at West Neck Road. Go right (north) and continue a couple of miles to the causeway (water on both sides) leading to Lloyd Neck. Once over, continue approximately 1/4 mile to the park entrance (large sign and gatehouse) on the left. Meet in parking lot.

### May 20 @ 10:00 AM, (Saturday) Wicks/Froelich Farm, Huntington, NY Hike Leader: Tom Stock

This 30 acre meadow has lain fallow for 25 years and makes for a good study of field succession. We will identify and list a baseline of plants found on the property. An additional 400 acres is preserved; part of which will become an organic farm. Involved in the co-op are the Town of Huntington, Huntington Audubon and The Nature Conservancy.

**Directions:** Take Route 110 north from the Long Island Expressway or Northern State Parkway to Jericho Turnpike (Route 25). Go left (west) on Route 25 for a little more than a mile until you see a McDonalds and a diner on the left. Make a right at the light onto Oakwood Road and continue north over the railroad tracks. At the 2nd light make a left onto Pulaski Road and go 1/2 mile to dirt parking lot on the left (next to large greenhouse which is easily visible from the road).

### June 3 @ 9:30 AM ((Saturday) Walking Dunes Bog Community, Nauppeague, NY Hike Leaders: Tom Meoli, Skip Blanchard

We will study the unique plants of a cranberry bog community including the insectivorous sundew plant. If our timing is right, we may view a couple of rare, native orchids in full bloom. We may also visit another site further east if time permits. Lunch not necessary, but liquids are recommended. Please take necessary precautions for ticks.

**Directions:** Take Long Island Expressway east to exit #70. Go south to Sunrise Highway (Route 27). Go east over the Shinnecock canal. Continue east toward Montauk. After Amagansett, Route 27 runs straight toward Montauk. Look for a tall radio tower on the left and make the next left turn onto Napeague Harbor Road. Cross railroad tracks and follow road north all the way to the end.

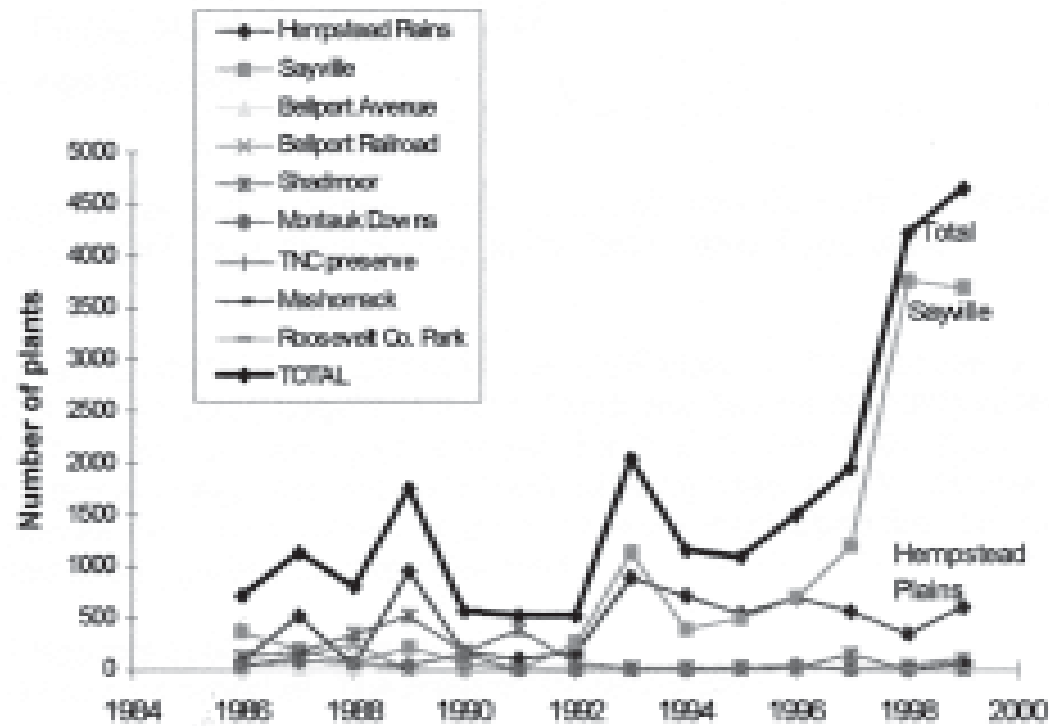
### June 24 @ 9:00 AM, (Saturday) Paulins Kill Trail, Andover, NJ Hike Leader: Otto Heck

Don’t miss what promises to be another wonderful hike with Otto along an old railroad right-of-way. Again this year, we will see too many fern varieties to list. Also, many wildflowers and, undoubtedly, many indigenous invertebrates as well. Bring along lunch and liquids. A long hike in a beautiful, natural area.

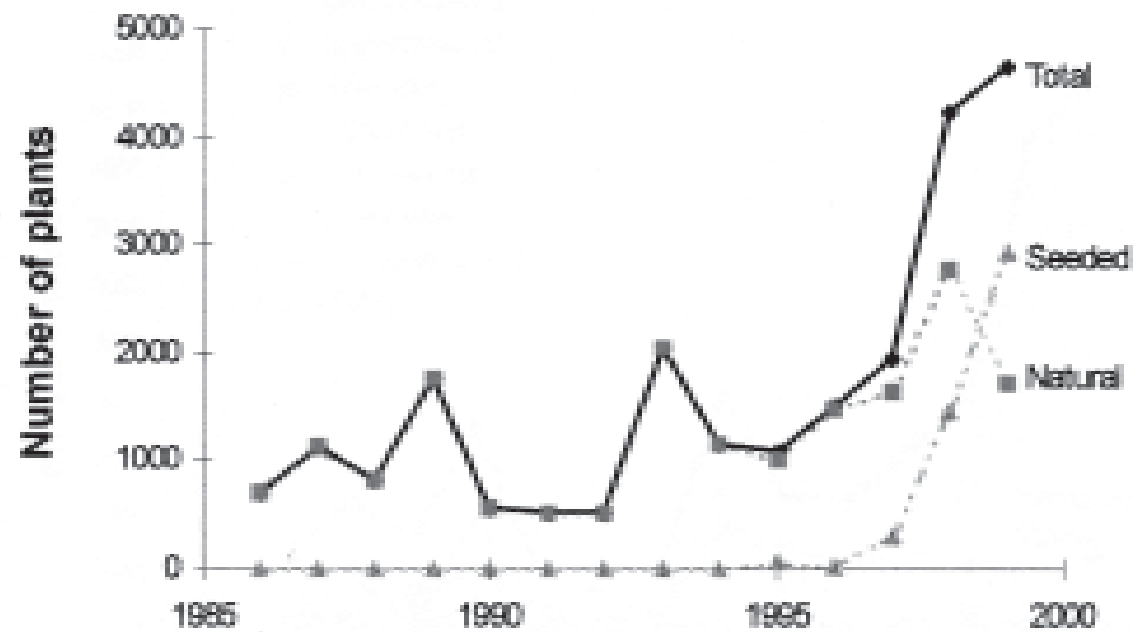
**Directions:** From Long Island take Throgs Neck Bridge (\$3.50 toll). After toll, bear left onto I-95 south (Cross Bronx Expressway) to George Washington Bridge (\$3.50). On New Jersey side, follow Route I-80 West. Take exit 25, which is Route 206 North, to Andover. We will meet in the parking lot of the Holiday Motel which is on the left side, approximately 8 miles north of Route I-80. From there, we will carpool to the trail. Plan on approximately 2 hours travel time from the Nassau/Suffolk line. (Holiday Motel: 973-786-5260).



Size of *Agalinis acuta* populations on LI, New York



Natural and experimentally seeded *Agalinis acuta* on LI, NY



Special thanks to Marilyn Jordon of TNC for providing these graphs.

Letters to the Editor

“Seven broad tracts have been cut through mature hardwood forest destroying the integrity of the Grandifolia Sandhills. Bill Talmage has wasted no time making his initial mark on the landscape after the February first Riverhead Town Board approval to allow the construction of a golf course on his ancestors’ farmland and forest.

Just seven days after this approval, the bulldozer began toppling trees. Why so fast? One reason could be that the owner and developer both know in their deep conscience that the destruction of forested moraine for fairways is likely to be met with disapproval. But they also know that this destruction is removed from public view by its remoteness as well as how quickly the public forgets that the forest was ever there. They quickly come to accept the fairways as part of the landscape. So, too, they figure that they’d better start right away lest the Town board reverse their decision. Fat chance of that happening. Riverhead is fast turning into a Levittown. But alas, we will soon forget what the lovely open farm fields looked like. We will soon forget what the vistas of open space did to our deep psychological beings.

The sooner the golf course is completed, the sooner the cash register drawers will open and close.

Well the children lament? No. They will not even have the opportunity to forget, not having even known or experienced a quiet walk in a mature oak, beech, birch forest land.

What we need is some balance, some compromise, so we can show the children those dwarf, globally rare beech trees and explain to them how the environment influences not only trees, but each of us as well.

This is the sad outcome, that we will not be able to use the Grandifolia Sandhills to teach this lesson to our children.

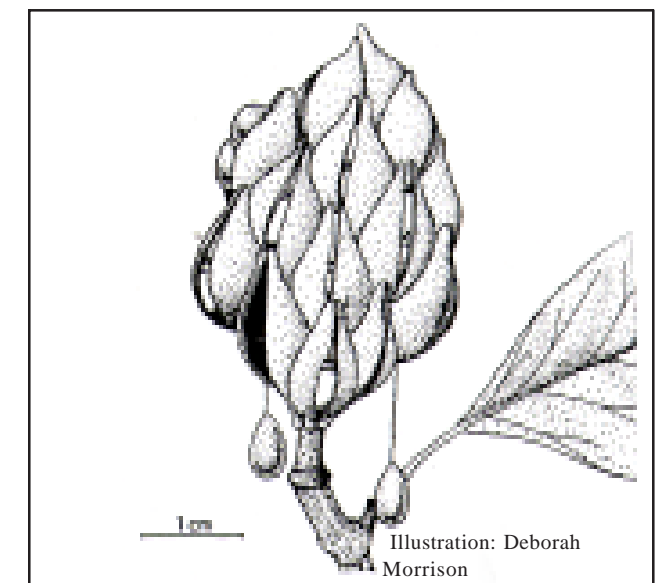
Sincerely,  
Tom Stock”

Sweetbay Magnolia (continued)

There are several clumps of Sweetbay Magnolias on the island and along the shore of the pond; these clumps of trees have a circumference of about 8 feet at the base. Under these clumps of trees, there are large numbers of seedlings and saplings, perhaps 300 to 500 individuals in total. The larger trees drop prodigious amounts of seeds and seed pods; the seeds scatter or are carried by birds. There is another large clump of trees just 400 feet up West Neck Road. Seedlings and saplings also occur at the rear of the pond in the Red Maple swamps.

The stream empties from the pond, with a small number of seedlings along the side of stream on the other side of the grass. The stream then flows under Harbor Hill Drive, and flows into another pond. Again, a small number of seedlings can be found along the north bank of the pond. The stream from the pond at Harbor Hill Drive flows through the Fiske bird sanctuary owned by the Village of Lloyd Harbor; several seedlings occur in the woods along the path running from the far corner of the pond back to the Lloyd Harbor Police Station.

The trees on the Tintle property may have been planted by Savage when he owned the property in the 1920’s. I suspect the trees are not native, although they could be, as the pond is an artificial pond dug to water cattle, and there are also east



From: Mitchell & Beale, **Fruiting Cone of Sweetbay Magnolia**

ern larch planted on the island that Savage may have brought down from the Adirondacks., I showed these trees to Steve Young from the NYS Heritage Program in the summer of 1998.

I always suspected that there were additional possible sites for Sweetbay Magnolia on the north shore of Long Island. About three years ago, I found a group of about 10 to 15 trees at the head of Northport Harbor, on the north side of Route 25A, opposite the intersection with Stony Hollow Road. There is a possibility that these trees could be native.

I found a clump of trees at the Cold Spring Harbor Laboratory, about 800 feet north of Route 25A, near a spring that flows down from the hillside. These trees are about 30 feet high, and about 5 to 8 inches in diameter.

Norman Soule, director of the Cold Spring Harbor Fish Hatchery, planted several Sweetbay Magnolias on the grounds. One tree is found to the south of the main building; several others were planted in the artificial freshwater wetlands just south of the lower fish pools. He transplanted his trees from the Chelsea estate, which has a number of sapling sized trees around the main estate building. The Chelsea estate is owned by Nassau County, and is located on the south side of Route 25A in East Norwich, just west of the Muttontown Preserve.

An unreported discovery is a single seedling, in fair condition, on the east side of the stream that winds north from Valentines Lane to Wishing Well Lane in Old Brookville. Valentines Lane is opposite the entrance to the New York Institute of Technology on Route 25A. I have been told that there may be a number of Sweetbay Magnolias in the wetlands along the south side of Route 25A just west of the entrance to the New York Institute of Technology

Steve Young was kind enough to send me a copy of the occurrences of Sweetbay Magnolia in the Heritage Program data base. The trees at Speonk are still there. There are more than 25 multi-stemmed individuals.

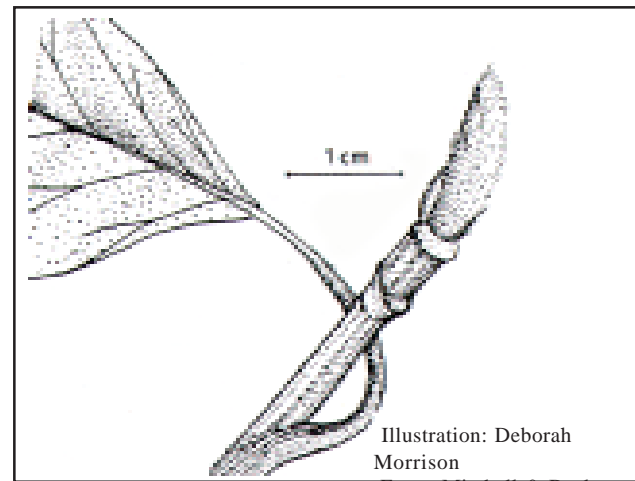
There is a small population at Belmont Lake; this population may have been planted but it is now naturalized and it is not in a landscaped area. The 1984 report has 2 large trees and 5 young trees.

Shu Swamp Preserve in Mill Neck has some easily accessible trees. You can find them along the sides of the trail leading along the railroad tracks down to the pond; the seedlings can be seen in the woods just before one reaches the pond; there are probably 25 individuals there. When you reach the pond, there is a nice specimen about 25 feet tall; it is about 40 to 60 years old. There are about 40 seedlings and saplings at the south end of Shu Swamp; these trees also can be found around a private pond adjoining the preserve; the connecting street is Frost Mill Road. Steve Young and I verified this occurrence in the summer of 1998.

There is also a small population along Tanbark Creek in the township of Hampton, according to Eric Lamont.

There are a few sites on Staten Island: two trees at Salong South Avenue. This site was recorded first in 1896. There is also about 10 trees at Hyland Boulevard and Bedell Avenue. Richard Stalter has also reported a small population from the Gateway National Recreation Unit on Staten Island.

The Large Tree Survey of Long Island, conducted by the NYSDEC, reported one tree at Kings Point Road in Kings Point on the former Brickman estate. It was 5'2" in circumference in 1995.



Sweetbay Magnolia (*Magnolia virginiana*) bud

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- SARGENT, C. S. 1961. [Dover Reprint]. Manual of the Trees of North America. Volume 1, page 346.
- YOUNG, S. 1998. New York Rare Plant Status List. New York Natural Heritage Program, N.Y.S. Dept. of Environmental Conservation. Latham, NY. 72p.

## Sandplain Gerardia rebounds to record levels

Marilyn Jordan, Ph.D.

Stewardship Ecologist, The Nature Conservancy

Sandplain gerardia (*Agalinis acuta*) is a small annual plant with delicate pink blossoms in the figwort family (aka snapdragon family) (*Scrophulariaceae*), and is the only Federally listed endangered species on Long Island. Sandplain gerardia is found in coastal grasslands at only 12 natural sites in the world, six of them on Long Island. *Agalinis acuta* is known to have occurred at over a dozen sites on Long Island in the early 1900's, based on herbarium specimens. By the late 1980's only six sites could be found: two on the Montauk peninsula, two in Bellport, one in Sayville and one at the Hempstead Plains in Nassau County. Sandplain gerardia needs open native grasslands on loamy soils, and disappears if its habitat is invaded by brush and trees. In the past grasslands were maintained by fire, cutting, and grazing, but these practices declined as the human population on Long Island grew.

Most of the early discoveries of Sandplain gerardia on Long Island were made by LIBS member Dr. Robert Zaremba, who worked for The Nature Conservancy on Long Island from 1984 to 1987, and continued his involvement for several more years. Bob found the gerardia sites at the Hempstead Plains (1984), Bellport Ave. (1985), and Montauk Downs (1985). Bob won the American Horticultural Society Plant Rediscovery Award in 1985 for the find at the Hempstead Plains. Also in 1985 Bob and LIBS member Robert Laskowski found the Sayville gerardia site. Bob found the Bellport Ave. site in 1984 based on a lead from LIBS member Betty Lotowycz. The Bellport railroad site was found by the late Joseph Beitel in 1984. Larry Penny found and Richard Mitchell (NYS botanist) identified a population of 500 gerardia plants at Shadmoor in 1981.

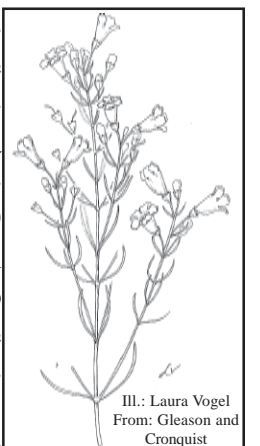
Bob Zaremba began the first efforts to collect and move gerardia seed to establish new subpopulations in 1989. He and other TNC employees

began cutting and mowing to remove invading pines and shrubs at the Sayville grasslands in 1990, an effort that rescued the Sayville *Agalinis acuta* population from near extinction (there were only 3 plants in 1991). The conservancy is still maintaining grassland habitat at several gerardia sites, along with the US Fish & Wildlife Service, which has cleared many acres at Sayville grasslands over the last three years.

After arriving on Long Island as a new Conservancy employee in 1992, I carried on Bob's efforts to establish new populations. I carried out experiments to determine the best methods for preparing new reintroduction sites, and for collecting and sowing *Agalinis* seed. These efforts were funded by grants from the US Fish & Wildlife Service. I established several new subpopulations at Sayville Grasslands in previously unoccupied areas. Also, new populations have been established at two Nature Conservancy preserves. Perhaps most important, seed from three of the four small gerardi populations on the verge of extinction have been "rescued" and planted in secure locations at the Sayville grasslands. Thus, their genotypes will not be lost, and are available for reintroduction to new sites.

Due to these efforts, numbers of Sandplain gerardia have been gradually increasing. In 1998 a record-breaking 4,200 plants were counted, more than double the highest number recorded within the last 12 years. In 1999 numbers increased to 4,650 plants despite severe drought, due in part to selective watering by the US Fish & Wildlife Service and The Nature Conservancy. For the first time ever, there were more plants growing from seeds

planted in augmentation or reintroduction plots than there were in natural populations. Populations of Sandplain gerardia planted at two Nature Conservancy preserves tripled in 1999 compared to initial numbers in 1998. It may take at least five to ten more years of work before Sandplain gerardia can be considered secure on Long Island, but these results are very encouraging.



Sandplain Gerardia



Swamp Forest by the dominance of Flowering Dogwood in a sub-canopy tree layer of the former, whereas the latter has an understory dominated by “Spicebush (*Lindera benzoin*), Arrowwood (*Viburnum dentatum*), and/or Sweet Pepperbush (*Clethra alnifolia*).” The understory has been removed on the rolling uplands of Lake Success, so that no evaluation can be made. At Lake success, the relatively minor contribution of Flowering Dogwood suggests that the name Mixed Hardwood Swamp Forest is appropriate.

The surprising occurrence of Mixed Hardwood Swamp on rolling uplands may be explained by the presence of a perched water table above impervious glacial drift throughout the Lake Success area. The capillary fringe of the perched water table frequently approaches the land surface and creates the hydrological conditions that enable certain water-tolerant trees like Sweet Gum, Red Maple, White Ash, and Northern Red Oak to occupy large areas. Mottling of soil was observed 6.5 inches (16+ cm.) below the surface at Grace Forest, where the high water table was associated with a Mixed Mesophytic Forest (Greller et al 1978, Table 2). With increasing depth and the absence of a perched water table a variety of oak-dominated forests are present on Long Island (Greller 1977).



White Ash in Flower

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Editor's Note:  
The complete table of field data upon which this study was based is available upon request.

## Sweetbay Magnolia

### Historical Notes

“**Magnolia glauca, L., on Long Island.**-This tree, reported in the N.Y. state flora as occurring on Long Island, and which has hitherto eluded the search of recent explorers, including the authors of the *Catalogue of the Plants of Suffolk Co.*, has been found by Mr. Robert W. Newbery, of this city, growing spontaneously on both sides of the L.I. Railroad culvert at Tuttle’s Pond, a short distance east of Speonk Station, Suffolk Co. Brooklyn, N.Y. W.H. Rudkin.”

Published in 1883 in the  
*Bull. of the Torrey Botanical Club*, Vol. 10, p. 95

“**The Long Island Station for Magnolia glauca.**- Near the end of last June, Mr. E. S. Miller, of Wading River, and I went in search of the locality at which the *Magnolia glauca* had been detected. There was no difficulty whatever in finding the place, as it is clearly described in Mr. W. H. Rudkin’s note in the *BULLETIN* for August, 1883, (p. 95) “Tuttle’s Pond”, a long, narrow mill-pond, formed by damming a brook, has, at its northern end, a swamp of several acres, through which passes the Long Island Railroad, which has here a culvert through which the brook enters the swamp. This is about two miles east of Speonk Station.

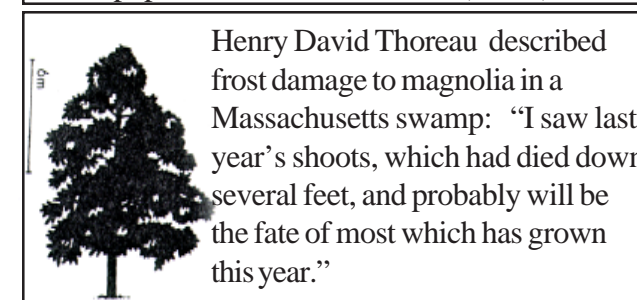
There were a few red maples and swamp laurels (*Kalmia angustifolia*), and scattered amongst these, in large numbers, were the magnolias, many of them from 15 to 20 feet in height and of remarkably vigorous growth. We were a few days too early to find the flowers fully out, and had to content ourselves with buds only.  
G. M. Wilber”

Published in 1885 in the  
*Bull. of the Torrey Botanical Club*, Vol. 12, p. 87

Editor's Note: *Magnolia glauca* is an older (now incorrect) term for *Magnolia virginiana*



**US Range Map for Sweetbay Magnolia**  
Long Island is actually at or near the northern limit of its range. There is only one reported disjunct population in Massachusetts (arrow).



Henry David Thoreau described frost damage to magnolia in a Massachusetts swamp: “I saw last year’s shoots, which had died down several feet, and probably will be the fate of most which has grown this year.”



**Long Island Range Map for Sweetbay Magnolia**

## Mixed Hardwood Swamp Forest on Rolling Uplands Near Lake Success on Long Island, New York

Andrew M. Greller

Dept. of Biology, Queens College  
of the City University of New York

Rolling uplands near Lake Success are dominated by Sweet Gum (*Liquidambar styraciflua*), Red Maple (*Acer rubrum*), Northern Red Oak (*Quercus rubra*), and White Ash (*Fraxinus americana*). All but the Northern Red Oak form pure stands on low, periodically wet sites on Long Island. Their dominance on rolling morainal uplands is probably due to the presence of a perched water table, which is also responsible for the maintenance of the water level in Lake Success. This report presents the largest set of data on trees for any Mixed Hardwood Swamp stand on Long Island.

Much of the fresh water used on Long Island is withdrawn from aquifers at varying depths and in different geological formations beneath the land surface. Swamp forests indicate a near-surface fresh water source. Swamp forests are a conspicuous feature of the vegetation throughout Long Island. They are especially well developed along the river margins that drain the morainal hills and follow south and east on the outwash plains. Swamp forests are also found around the many ponds that occupy depressions on the surface of the moraines and outwash plains. Detailed descriptions have previously been presented for Red Maple swamps (Cain and Penfound 1938) and Coastal White Cedar swamps (Harper 1907, Taylor 1916). Greller (1977) compiled references to other descriptions of swamp forests and proposed a system of classification for all Long Island forests. He noted that many tree species, besides Red Oak and Atlantic White Cedar form nearly pure stands in wet soils. Greller proposed that varied swamp forests composed of two or more codominant species be classified under the name Mixed Hardwood Swamp. The present study presents the first documentation of a Long Island Mixed Hardwood Swamp that is dominated by Sweet Gum, Red Maple, Northern Red Oak, and White Ash. It constitutes the most thorough documentation of tree composition of any Mixed Hardwood Swamp on Long Island.

### Site Description

Lake Success is located on the terminal moraine complex of Nassau County, just east of the Queens County border, on western Long Island (40°45'45"N lat., 73°42'55"W long.). The lake marks the merger point of the older Ronkonkoma Moraine with the younger and overlapping Harbor Hill Moraine. Topography in the vicinity of the lake ranged from hilly to gently rolling. Isolated or coalescing kames and interspersed kettle holes account for the irregular surface (Swarzenski 1963). Lake Success is the largest kettle lake in till or mixed moraine on Long Island (Fuller 1914, p. 186). Altitude near the lake ranged from 260 feet (80 meters) above sea level (asl) to about 190 feet (59 m.) at the surface of Lake Success. Well N 8038, which was drilled in 1966 from an elevation of 208 feet (64 m.) reached the principal water table 165 feet (51 m.) below the land surface in the Magothy (Cretaceous) Formation (Kilburn 1979). Walter S. Newman (unpubl. data) et. al. sounded Lake Success in the fall of 1963 and recorded a maximum depth of about 78 feet (24 m.). Thus, the lake is high above the main water table. Water is maintained by a "perched water table" (Veatch and others 1906). Perched water tables are common within the morainal area. They usually occur close to the land surface in depressions that are underlain by impervious clayey till (Swarzenski 1963, p. 29). The few boring logs reported from the vicinity of Lake Success record considerable clayey and silty glacial drift at and near the surface (Veatch and others, 1906; Swarzenski, 1963).

The land on the north side of the lake is occupied by Lake Success Golf Course. No vegetation there remains unmodified by humans. Tall, occasionally massive, relict trees of the original forest remain standing in patches around the lake and in strips between fairways. Those trees are the object of the present study.



- Photograph by Andrew Greller/ February, 2000

**Mixed Hardwood Swamp Forest near Lake Success, New York.**

### Methods

On the slightly hilly to rolling land of Lake Success Golf Course, patches and long strips of original forest trees were censused by species for individuals with diameters (dbh) greater than 8 inches (20 centimeters). Species with lesser diameters were listed, but not tallied. Cultivated trees were ignored. Nomenclature follows Gleason and Cronquist (1991).

### Results and Discussion

The dominant tree species of the rolling uplands at Lake Success are Sweet Gum, Red Maple, Northern Red Oak, and White Ash. Also present are Black Walnut (*Juglans nigra*), Tulip Tree (*Liriodendron tulipifera*), Tupelo (*Nyssa sylvatica*), and Pin Oak (*Quercus palustris*). All of these species, with the exception of the Northern Red Oak, are dominant or

co-dominant species on poorly-drained soils of Long Island. Various local combinations of these species were recognized collectively as the "Mixed Hardwood Swamp" forest type by Greller (1977, p. 379, 380), and this name is herewith proposed for the forest of rolling uplands at Lake Success. Grace Forest, a Mixed Mesophytic stand (Greller, Calhoun, and Mansky 1978) is approximately 1.25 miles (2 kilometers) east of Lake Success.

Northern Red Oak and Red Maple are common in both stands, but Sweet Gum and White Ash are dominant species only at Lake Success. The dominants at Grace Forest, Tulip Tree, American Beech (*Fagus grandifolia*), and Flowering Dogwood (*Cornus florida*) are relatively uncommon at Lake Success. Greller (1977, p. 381) suggested that Mixed Mesophytic forest be distinguished from Mixed Hardwood