Long Island Botanical Society

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Old Growth Black Tupelo on Long Island

Daniel Karpen, Bruce Kershner, Peter Kelly, David Hunt

Abstract

After more than 350 years of settlement, pockets of old growth forest remain on Long Island. Among the trees commonly found on Long Island, Black Tupelo (*Nyssa sylvatica*) obtains ages associated with old growth. Descriptions are provided on the ecology of the sites, along with directions to them. Black Tupelo trees up to 363 years old have been documented on Long Island.

Growing up in central Nassau County and northeast Suffolk County in the 1950s, I often wondered whether old growth forests remained on Long Island. I was always told that they were all "cut down." However, this is not the case.

Pockets of old growth forest remain on Long Island, despite over 350 years of settlement. The varied topography of Long Island—with its shoreline, North Shore rolling hills, and freshwater wetlands—protected these old growth forests since the land was not suitable for agricultural purposes, and the freshwater wetlands forests were considered too difficult to log.

Altogether I have identified 10 sites, including four that I investigated in 2003. Most of the sites are in town, county, state, and federal ownership, where they are permanently protected as nature preserves and public parks. Several sites were discovered accidentally.

SOUTHAVEN COUNTY PARK

Southaven County Park is located in Yaphank in central Suffolk County. A key attraction to the park is the Carmens River, which runs south through the park. Much of the park is upland Scarlet Oak-Pitch Pine forest with some Red Maple and White Oak.

The old growth portion of the park consists of freshwater wetlands forests along the Carmens River. In the northern portion of the park, the Long Island Rail Road constructed a bridge over the Carmens River in 1844. To the south of the railroad trestle, there are scattered Black Tupelo trees about 150 to 200 years old. Just to the north of the trestle, on the east side of the Carmens River, there is a strip of Black Tupelo trees up to about 32 inches diameter.

The bark on Black Tupelo trees progresses from a thin scaly and ridged bark ¼ to ½ inch thick on young trees up to 80 years old, to a deeply ridged bark 1 to 1 ½ inches thick on trees 175 to 200 years old. When trees get to over 200 years old, the ridges fall off the bark, forming a balding bark type. In trees 300 to 400 years old, the bark thickens again, with a new formation of ridges on the bark, or in some trees, a platy bark with long plates that separate along the sides from the main trunk of the tree.

Such a bark type was observed on Black Tupelo trees 350 years old in Bear Swamp West in southern New Jersey. The trees along the Carmens River looked exactly like the old growth Black Tupelo trees in New Jersey. These trees were cored by Bruce Kershner and were between 300 and 375 years old. I therefore concluded that the oldest Black Tupelo trees along the Carmens River, just north of the LIRR tracks, were between 325 and 375 years old.

Directions to Southaven County Park. Main Entrance: Take Sunrise Highway to Exit 57. Go north to Victory Avenue, then go east on Victory Avenue about one mile to main entrance of park. For a shorter way to the northern section, take the Long Island Expressway to Exit 67, go south along Yaphank Avenue to the Yaphank LIRR station. Walk about ½ mile east to railroad trestle.

WERTHEIM NATIONAL WILDLIFE REFUGE

Having accidentally discovered the old growth Black Tupelo in Southaven County Park, at the north end of the Carmens River, I guessed (correctly) that one

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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.

Article & News Submissions Welcome!
Mail to:
Long Island Botanical Society
PO 507
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Membership News

With this issue, Margaret Conover becomes editor of the Society's newsletter. Margaret is one of the founders of LIBS.

She has a Ph.D. in Botany from UMass, Amherst and conducted field work in Australia. Her dissertation is on the morphology of reticulate-veined monocots. This spring she'll begin teaching plant anatomy at the New York Botanical Garden. Her "day job" is Director of Three Village Historical Society in Setauket.

Also part of the editorial team, Bill Krol will oversee design, layout, and copyediting. Bill also serves as editor of the *Seatuck Sentinel*, the Seatuck Environmental Association's newsletter. Ray Welch has volunteered to contribute a regular column of observations.

At the regular Society meeting on November 11, election of officers was held (see list on this page).

On November 30, the Flora Committee was featured in a Newsday article by Laura Mann. She reports that this "...dedicated group of eight volunteers is compiling an updated atlas of native and non-native plant species found in our wilds." Skip Blanchard, Steve Clemants, Andy Greller, and Carol Johnston are quoted. This article should increase public awareness of the work of the society.

Mary Laura Lamont, as Education Chairman, has given talks and field trips for several groups including Great South Bay Audubon Society, the New England Wildflower Society, Keyspan walkovers and several high school groups. She has also arranged for a new batch of LIBS T-shirts to be produced. (See below.)

Now available:

Newly produced T-shirts and sweatshirts in shades of green with white lettering.

Sweatshirts: $20
Long Sleeved t-shirts: $15
Short sleeved t-shirts: $10

They will be available for sale at each meeting, or phone Mary Laura Lamont.

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would be able to find it at the south end of the river in Wertheim National Wildlife Refuge. With Peter Kelly, we drove around the 2,000-acre refuge, and in 90 minutes located seven stands of Black Tupelo trees along the river and the rivulets feeding into it. The trees in all of these stands were at least 150 years old. On a subsequent investigation, two of the oldest trees on the refuge, located on the east side of the Carmens River, were cored to determine ages. A Black Tupelo tree 20.7 inches in diameter was determined to be 260 years old; this tree had ridged bark about 1½ inches thick. Another tree was cored; it was 22.4 inches in diameter and was determined to be 363 years old. Clearly this section of the refuge—a freshwater wetland of approximately one acre—appears never to have been disturbed in the European history of Long Island.

The cores from the trees were mounted on a piece of plywood and given to the refuge office to show visitors. This discovery, of previously unknown old growth forests, was just made in June 2003. There is a total of approximately 10 acres of old growth Black Tupelo forests in Wertheim NWR.

The upper portion of the 363-year-old Black Tupelo in Wertheim National Wildlife Refuge. Note the knobs at branch stems.

Directions to Wertheim NWR. Take Sunrise Highway in Suffolk County to Exit 57. Go south ¼ mile to Montauk Highway. Go east about one mile to Old River Road in Shirley. Go south on Old River Road about ¼ mile to refuge entrance.

MONTAUK – CAMP HERO

There are approximately 100 acres of old growth forest at Montauk, at the easternmost end of Long Island. It is a maritime forest consisting of American Holly, Scarlet Oak, White Oak, various hickories, Red Maple, American Beech, Yellow Birch, and Black Tupelo. Camp Hero was a U. S. Military Reservation for the better part of the 20th century and was recently turned over to New York State as a state park.

Black Tupelo occurs at Camp Hero in the freshwater wetlands and in the nearby upland forest. Of special interest is its association with Yellow Birch, a more northern species, as Black Tupelo reaches the northern portion of its range where it overlaps with the southern portion of the range of the Yellow Birch.

David Hunt cored a Black Tupelo at Camp Hero, and told me it had 365 rings. The balding nature of the oldest trees, with the stag-headed appearance, confirms the ages of the trees. Black Tupelo trees are up to about 28 inches diameter at Camp Hero.

Directions to Camp Hero, Montauk. Take Montauk Highway (Route 27) east to Montauk Point. About one mile before the Montauk Lighthouse, you will see a sign for Camp Hero. Turn south, and look for a trail in the woods on the right side of the road. It leads down into the freshwater wetland area where the best stands at Montauk may be seen.

WEST HILLS NATURE PRESERVE

For a long time, a key priority in the purchase of open space by Suffolk County was a 20-acre parcel of woodlands and fresh water wetlands in the West Hills section of Huntington in Suffolk County. This discovery of old growth Black Tupelo was another accidental discovery.

Once Suffolk County purchased the land, it put a sign on the side of the parcel, "West Hills Nature Preserve." It pays to be very curious, so on a lark I decided to check out the property in the spring of 2003. The lower portion of the parcel, on the eastern side, consists of a flood plain forest of Pin Oak and young Black Tupelo 50 to 90 years old. I hiked up the slope, and came to a series of small spring-fed ponds. Surrounding the

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edges of the ponds was a grove of eight Black Tupelo trees in a Red Maple forest. The Black Tupelo trees were up to about 30 inches in diameter, and I estimated their ages at between 175 and 250 years old. After I made my discovery, I brought a local newspaper reporter to show him the trees, which I believe are the oldest trees in the Town of Huntington, and a full-page story appeared in the local papers.

Directions to West Hills Nature Preserve. Take Jericho Turnpike (Route 25) west from Route 110 about 1.2 miles, and turn south on Sweet Hollow Road. Go south about ½ mile, and park on the edge of the road near Downs Road. The West Hills Nature Preserve is on the west side of the road. Hike in about 200 yards.

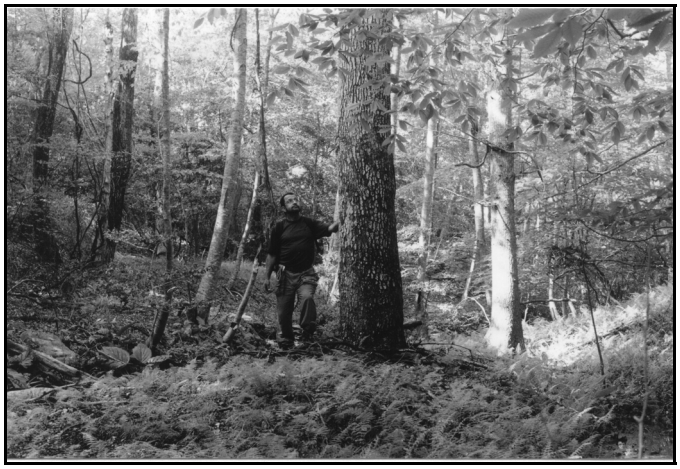
SWEET HOLLOW ROAD

This area is a very small pond and associated freshwater wetlands. Black Tupelo trees up to 24 inches in diameter and 150 to 250 years old are in the pond, surrounded by oak-forested steep hills. I had known about the area for about 30 years, while driving along Sweet Hollow Road, and was able in the spring of 2003 to investigate the forest.

Directions to Sweet Hollow Road. Walk south along Sweet Hollow Road about ½ mile south of Downs Road. Sweet Hollow Road is very narrow near this small pond and there is no parking along the road. The pond is adjacent to the road. This parcel is privately owned.

LLOYD HARBOR

This is a parcel of woods that I have walked in for the past 48 years while living in Huntington. It is less than ¼ mile from my house. The woods look the same, year after year.



Bruce Kershner standing next to a mature Black Tupelo along a small stream in Camp Hero, at Montauk, New York

A farm pond was constructed during colonial times to water cattle. Apparently, the farmer did not want the pond contaminated with run off and cattle manure, so the woods where the springs feed the pond were left undisturbed. There are about two acres of old growth forest consisting of White Ash, Red Maple, Black Oak, Tulip Trees, Chestnut Oak, Swamp White Oak, American Beech, and Black Birch. One Black Tupelo tree about 12 inches in diameter was cut down about 10 years ago, and I counted about 200 rings on the logs. Most of the Black Tupelo trees are between six and 12 inches in diameter. The largest tree is about 28 inches in diameter, and has balding bark. I have concluded that this tree is between 225 and 250 years old.

Directions to Lloyd Harbor. Take West Neck Road north from Route 25A in downtown Huntington 2.2 miles to 394 West Neck Road. The site is privately owned among three landowners. The forest is at the back of the pond as viewed from the road.

TIFFANY CREEK PRESERVE

Tiffany Creek Preserve is a 232-acre preserve of upland North Shore hardwood forests and a freshwater wetland area draining into Tiffany Creek in the Town of Oyster Bay in Nassau County.

I had known about the preserve for about 30 years since the local Audubon Society led a bird walk in the area just after I left college. However, it was not until 2002 that Bruce Kershner and I, leading a group of people through the area to look at the old growth Tulip trees up to 54 inches diameter, realized that there was truly some original forest, believed to have never been logged, in the preserve.

There is a pond at the eastern end of the preserve that is fed by the springs above it. The one-acre pond is believed to have been constructed in colonial times. On the south side of the pond, Bruce counted 295 rings on a cut Chestnut Oak stump of a tree that died from gypsy moths about 10 or 15 years ago. The surrounding Chestnut Oak forest on the hill to the south of the pond, comprising about one acre of Chestnut Oak trees up to 36 inches in diameter, looks exactly like old growth Chestnut Oak in the southern Appalachian mountains of western North Carolina. I have therefore concluded that this Chestnut Oak forest is as close to true virgin forest that one might see on Long Island.

Between the pond and the slopes, there is a lone Black Tupelo mixed in with the Chestnut Oaks. Bruce Kershner cored the tree, but he told me he did not go all the way to the center of the trunk. The ring count on the partial core was over 200 rings.

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Directions to Tiffany Creek Preserve. Take Cove Road north from Route 25A in Oyster Bay approximately 1.2 miles to Shutter Lane. Go west on Shutter Lane to the end, approximately ½ mile. Park at the end of the road, and the trail on the north side of the road leads into Tiffany Creek Preserve. Walk approximately 1/3 mile downhill to Tiffany Creek Pond. Cross through the wetlands, or cross the dam to reach the trees on the south side of the pond.

MILL POND - OYSTER BAY

A difficulty with forests on Long Island is that secondary old growth forests have grown back, with trees as old as 225 years, following cutting in the Revolutionary War. Such might be the case with the Mill Pond in Oyster Bay.

This pond is believed to have been built about 1670 to power a mill in downtown Oyster Bay. The west side of the pond, between the water's edge and Lake Avenue, comprises a mixed Tulip Tree, Red Maple, and Black Tupelo forest. The Black Tupelo in this area is believed to be over 200 years old. The pond is now owned by the U. S. Fish & Wildlife Service as part of the Oyster Bay National WildlifeRefuge.

Directions to Mill Pond Road. Take West Main Street in downtown Oyster Bay west .6 miles to Lake Avenue. Go south on Lake Avenue. The forest is between the pond and the road.

SHU SWAMP – MILL NECK

Shu Swamp Preserve in Mill Neck contains some of the finest old growth freshwater wetlands forest in the Northeast. Although the preserve is small—only about 40 acres total—it makes it up in the quality of the area. It is a privately owned preserve, open to the public for visitation.

The northern portion of the preserve contains well-preserved Red Maple Black Tupelo forests, with the Black Tupelo reaching 24 inches in diameter and the oldest trees about 200 to 225 years old, especially in the northwest corner. A stream runs through the center of the preserve from south to north. By following the trail south, one reaches a pair of Black Tupelo trees each about 30 inches in diameter on the west side of the trail which follows along the west side of the creek.

It was these two Black Tupelo trees that convinced me that the tree does reach great age on Long Island. The bark on the underside of the trunks, which lean slightly, has ridges three to four inches high. That is extremely thick, and on an 80-year-old cross section that I have, the bark is only 3/8 inch thick. On the other side of the trees, the ridged bark has fallen off.

Both of these trees are hollow. I was able to take a very small section of rotting wood from the inside of one tree, and it had 30 to 40 rings to the inch. As the distance from the inside of the bark to the center of the tree is about 13 inches, I estimated that the tree could be 350 to 400 years old.

Directions to Shu Swamp. Starting at the intersection of Lake Road and West Main Street in Oyster Bay, proceed west along Mill Hill Road approximately 1.4 miles. Turn north onto Frost Mill Road, and proceed north .8 miles to preserve entrance.

WELWYN PRESERVE

Welwyn Preserve is a former estate belonging to the Pratt family associated with Standard Oil. It is now owned by Nassau County in the City of Glen Cove.

This preserve contains approximately 40 acres of mature Tulip Forest, with Yellow Birch, Red Maple, Black Tupelo, American Beech, Black Birch, Northern Red Oak, and White Oak as associated species.

Alan Lindberg from the Nassau County Department of Parks and Recreation cored one of the large White Oak trees about 25 years ago, and found over 300 rings on it. These trees could have been pasture trees when the area was pastured in the 1700s and possibly early 1800s.

Black Tupelo is found at the northern portion of the forest along the creek. Trees reach 26 inches in diameter and ages are estimated from 175 to 250 years old.

Directions to Welwyn Preserve. From downtown Glen Cove, take School Street north to Forest Avenue. Go north on Dosoris Lane .7 miles to New Woods Road. Go west on New Woods Road .6 miles to Crescent Beach Road. Go north on Crescent Beach Road to park entrance at about .1 miles.

SUNKEN FOREST — FIRE ISLAND NATIONAL SEASHORE

The Sunken Forest on Fire Island is an American Holly- Black Tupelo-dominated maritime forest, with some Eastern Red Cedar, Sassafras, Black Oak, Pitch Pine, and Black Cherry as associated species.

Black Tupelo trees are up to 16 inches in diameter and reach ages of 150 to 175 years. The American Holly are the same age. Ecological studies of the area have been done by the National Park Service.

Directions to Sunken Forest – Fire Island National Seashore. Directions: Take the Fire Island Ferry from Sayville. Follow the signs to the ferry from Montauk Highway, Route 27A.

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A Whiter Shade of Pale

Ray Welch

Even at this season some trees are as easy to identify as they are when in full leaf. No one fails to notice the mottled, white bark of the American Sycamore, or the more warmly-colored patchy trunk of its relative, the too-common London Plane. The deciduous woodlands of Long Island are not, however, full of sycamores or birches. What we have most commonly are several species of oak, most of them nearly anonymously dark-barked now. One oak is different. White Oak, scattered among its darker congenerics, has platy, pale-gray, almost ash-colored bark that reflects the low winter sun, which warms at least the eye on chilly afternoons of mid-winter walks in our local woods.

We cherish our White Oaks for their majesty and longevity, and White Oaks, some known to be over four hundred years old, are among the longest-lived species of non-coniferous trees in the United States. Foresters, naturalists and scientists have long seen our many kinds of oaks as important elements of our eastern forests, and the White Oak has prominently featured among them. Yet there is some recent work that implies that the White Oak in the East may be in trouble--and other oak species as well.

Photo by Ray Welch

White Oak Trunk

The prevalence of oak species in the Long Island woodlands is undeniable and is long-standing. I reviewed the literature (Welch, 1996), where pollen records show us that "oak" has been abundant with us for at least 5000 years, yet these data don't tell us what particular species of oak the pollen records imply. Oak pollen is apparently lumped just as "oak" pollen by the palynologist. The earliest written records are not much help either. These are reviewed in Russell (1983), and when the earliest print records of observers happened to mention any trees by type, oaks are invariably listed as merely "oak." So a question comes up. Yes, oak has been around for a long time, but have there been the same species *abundance*s of oaks all along?

There is an answer to this. There are some qualitative data for the species composition of the pre-settlement forests of the East, data based on records of "witness trees." These were the trees used by surveyors, who would blaze a prominent tree at property corners and at any changes in the direction of the survey lines. The tree species were noted, and since property rights depend on proper records being preserved, the data on tree species was fortuitously saved as well. And so we have a window, somewhat blurry admittedly, on the forest composition of the past.

These data, retrieved and analyzed by various authors, were reviewed in a recent article by M. D. Abrams (2003). They show widespread decline in abundance of White Oak at many sites throughout the East since pre-settlement times. One set of data in Abrams' article is from "Eastern New York" (Glitzenstein et. al., 1990), and has the following percentages:

> Pre-settlement: **White Oak (36%)**, Black Oak (15%), Hickory (10%), Elm (6%)
> Contemporary: Maple (30%), Chestnut Oak (14%), Red Oak (10%), **White Oak (9%)**

While these percentages don't actually reflect Long Island data, being from the Hudson Valley, the general pattern of all the data sets implies that a decline on Long Island of White Oak from its pre-settlement abundance is likely.

The question is then: what happened to the White Oak? The various points, reviewed by Abrams, point to several linked factors. White Oak was (and is) a prized timber tree, and was selectively logged over less valuable species. Clear-cutting and post-settlement fires allowed more fire-resistant oaks, like Chestnut Oak, or faster-growing oak species, like Red Oak, to occupy the

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logged or burned over land more quickly than White Oak could manage. I have often wondered if the noticeably later leafing out of the White Oak on Long Island puts them at a competitive disadvantage with those species, like Scarlet Oak and Black Oak, that come into full leaf at least ten days before White Oaks do, and this may be implied by the competitive data discussed in Abram's review.

Photo by Ray Welch

White Oak Leaves

Abrams says that White Oak "does best in a regime of recurring low-intensity fire," and that in pre-settlement forests, White Oak "grew successfully in uneven-aged forests. Periodic fires kept populations of fire-sensitive, later-successional species at a minimum and allowed adequate oak regeneration." Until only recently, forest fires have been seen as entirely negative, and fire suppression was the common response of forest managers. But if it were not for these fires, the prediction is that oak woods would become dominated by the more fire-sensitive Red Maple, Sugar Maple and American Beech, which is what is observed today on many former White Oak sites. The fire history of Long Island is long-standing, but the timing and intensity of the fires have surely changed since pre-settlement times. All of these factors have upset a former equilibrium that favored White Oak, and other oaks, on many wooded sites in the East.

And what of the future? Abrams says that White Oak recruitment has been nearly nil on "upland sites" for at least fifty years, and other upland oaks are in trouble too. Is this the case for Long Island? We appear to have many oaks, but a great number of them are the relatively trashy Scarlet Oak. White Oak seems a small proportion on many oak-dominated sites I visit, and these trees are often old and mature ones only. I note that there are dozens of thriving Scarlet and Black Oaks, mature ones and thrifty saplings, in a one-third hectare pocket woodland next to my own office building in Selden. The site was cleared in the mid-1930s, and has been left on its own, unburned, since then. There is only a handful of maturing White Oak among the many Scarlet and Black, and no apparent cohort of well-grown saplings coming on. The few White Oak trunks here still stand out in the winter sun, but their paleness may be a token of their coming presence here only as phantoms.

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Welch, R. 1996. "Ancient Flame." Fire, history, and the Long Island Pine Barrens. Long Island Botanical Society Newsletter Vol 6. No. 4: 25-28.

An extensive bibliography on oaks in the eastern United States is at:
http://www.brooklynborohall.org/search/refquery.asp?Quercus

***Ray Welch** has been a professor in the biology department at Suffolk County Community College since January of 1968.*

Old Growth Black Tupelo

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***Daniel Karpen** has a BS in Forest Resources from the University of Washington and is a consulting professional engineer.*

***Bruce Kershner** has an MS in Biology from the University of Connecticut in Storrs, CT, and is adjunct faculty at SUNY Buffalo.*

***Peter Kelly** is a biologist with the US Fish and Wildlife Service, Upton, NY 11973.*

***David Hunt** has a PhD in Botany from the University of George, and is a consulting ecologist.*

Plant Sightings

Steve Young reported the following:
Rumex hastatulus was not found at its former location in Napeague
Plantago maritima ssp. *juncoides* was found at a new station at Napeague
Spiranthes vernalis was found at Robert Moses State Park
Potentilla anserina ssp. *egedii* was found at Three Mile Harbor
The swales at Jones Beach have become unproductive because of *Phragmites* invasion.
The *Liatris borealis* colony at Montauk has been decapitated for its seed by some unknown party.

Dwarf Huckleberry, *Gaylussacia dumosa* var. *bigeloviana,* was found under the Riverhead power line by Laura Schwanoff, and on Red Creek Road by Skip Blanchard. Although seen at Carmens River and Quogue in the past, Barbara Conolly and Betty Lotowycz could not find it at Quogue recently.

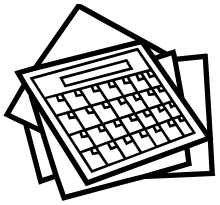
Eric Lamont reports *Platanthera blephariglottis, Platanthera clavellata, and Utricularia striata* under the Riverhead power line.

John Potente reported that *Agalinis setacea* appeared on his property in Hauppauge, evidently hidden in the seed bank for 40 years.

Vince Puglisi reported that removal of Mugwort has resulted in a banner year for *Agalinis acuta* on the property managed by Friends of Hempstead Plains.

Bob McGrath, Skip Blanchard, Sal Battaglia observed and discussed possible reasons for early leaf loss and shriveled berries in Black Huckleberry.

Skip Blanchard found 42,000 individuals of Bigelow's Glasswort, *Salicornia bigelovii,* at Orient this fall, 6000 of them at the edge of a proposed ditch. As a result, Ducks Unlimited appears to have abandoned their plan of creating an Open Water Marsh Management area at this location.



Upcoming Events

January 13, 2004 * Tuesday, 7:30 p.m.
MEMBERS NIGHT
Members are welcome to bring slides, stories, specimens, and tales of peculiar sightings of favorite plants. A great opportunity to show what you have found while exploring on Long Island or elsewhere. Please call Rich Kelly in advance to advise as to the approximate number of slides that you would like to show. Thanks.
Location: Bill Paterson Nature Center, Muttontown Preserve, East Norwich

February 10, 2004 * Tuesday, 7:30 p.m.
ANNE BURNS: "MATHEMATICAL MODELS OF BOTANICAL FORMS."
This will be an expanded live action version of the cover article from our July-August 2003 Quarterly Newsletter. Anne is a Mathematics professor at Long Island University at C.W. Post. Her interests include art, math, chaos, and Rocky Mountain wildflowers.
Location: Bill Paterson Nature Center, Muttontown Preserve, East Norwich

March 9, 2004 * Tuesday, 7:30 p.m.
RICH KELLY: "DOWN EAST PLANTS"
See a bunch of Bunchberries, a couple of Twinflowers, and more from the flora of coastal Maine. Rich is the LIBS Programs Chairperson and a member of the Local Flora Committee.
Location: Bill Paterson Nature Center, Muttontown Preserve, East Norwich

* Refreshments and informal talk begin at 7:30. Formal meeting starts at 8:00 PM.

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Membership Chairperson