Long Island Botanical Society

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CAN WE SAVE OUR PITCH PINES?

By MaryLaura Lamont, Education Committee Chair, Long Island Botanical Society

It has now been two years since the southern pine beetle (*Dendroctonus frontalis*) was confirmed on Long Island (Lamont 2015). A few people speculate that Hurricane Sandy brought the insect to our shores but biologists and naturalists noticed pitch pines (*Pinus rigida*) dying quickly in various locations on the south shore in Suffolk County at least 1 to 2 years before Sandy hit.

Figure 1. Healthy pitch pines are felled. These healthy pitch pines were sacrificed in an area surrounding trees infected by southern pine beetle. When adult beetles emerge from infected trees, looking for new trees to infect, they are less likely to find healthy trees nearby to infect and the life cycle is broken. [Photo by M. Lamont.]

The question we now face is what is to be done about it? Without a doubt the beetle is here to stay. This appears to be a natural northward expansion of a native southern insect following warmer winters caused by climate change.

In 2015, state, county and federal agencies coordinated efforts to stop the insect from spreading from specific areas, or at least to control outbreaks and numbers of the beetles. It has been a daunting task. The majority of infected pines are in the Long Island Central Pine Barrens Core. Some of the island's most severely affected areas include Wertheim National Wildlife Refuge, Connetquot River State Park Preserve, Fire Island National Seashores' lands along the Atlantic Ocean and at the William Floyd Estate, Henry's Hollow Pine Barrens State Forest, and Hubbard Creek County Preserve. Many pitch pines have been killed by the insects and thousands of trees have been felled to stop the insects from spreading, but will it work? Can we save our pines?

The goal is to control beetle numbers and break their life cycle so that some pines can be saved. Current management practices on Long Island are modified from methods used by foresters for decades in the south. The traditional approach has been to cut the trees, pile them up, and burn the infected areas. Burning is not practical here on Long Island so current practice has been to cut infected trees at the right time of year before the beetles emerge to attack new trees. A perimeter of living non-infected pines is cut around the infected trees (Fig. 1); the height of the affected trees determines the diameter of the area to be cut. For example, if the affected trees are about 50 ft high, then all living pines within 50 ft are cut. This interrupts the insects' life cycle by making it harder for them to find new living pines. To date, over 15,000 pines have been cut on the combined agencies' lands on Long Island. Wertheim National Wildlife Refuge alone took down 7,000 trees (personal communication with Wertheim staff).

Some trees already dead from infestations are not cut but are left standing because they then become hosts for clerid beetles, predators on southern pine beetles. Other insects benefit from decaying wood as well. Dead trees also become houses for all types of birds, including various species of woodpeckers and other hole-nesting birds such as tufted titmouse, black-capped chickadee, and white-breasted nuthatch. Mammals live in them too, such as flying squirrels, chipmunks and bats.

When cut trees are left on the forest floor they are usually "bucked." A chain-sawed cut is made the length of the prostrate tree (Fig. 2). As a result of bucking, the bark should fall or flake off, thereby exposing beetles to predators and the elements of hot sun and desiccation in summer and cold temperatures, snow and ice in winter.

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Society News

In Memoriam. This year has seen the passing of four dear LIBS members. **Grace "Betty" Lotowycz** was a charter member of LIBS and the first recipient of the society's "Distinguished Service Award" (see LIBS newsletter, 2004, vol. 14, no. 3). See also the related story on the bottom of page 25 of this issue. **Elsa l'Hommedieu** and her husband Dick were active members during the 1990s and were regulars on all field trips. **Helen McClure** was also an active member of the society. **Max Wheat** was a poet and freelance nature writer and a frequent contributor to this newsletter. A sample of his work appears in this issue on page 26.

Margaret Conover, LIBS cofounder and newsletter editor, is moving to Eugene, Oregon with her husband David. LIBS will miss Margaret but we are pleased to announce that she will stay in touch by continuing as editor of the newsletter. Thank you so much, Margaret, for your 30 years of service to LIBS. See related story on page 26.

LIBS Archives. Thirty years of papers documenting the history and activities of LIBS are being gathered to be deposited in the archives of the LuEsther T. Mertz Library, The New York Botanical Garden; afterwards, papers will be added every five years according to a recent arrangement between LIBS and Susan Fraser, director of the library. Documents include a complete set of minutes from meetings, newsletters, official papers, correspondence, field trip albums, field trip reports, Flora Committee records of Long Island's flora, and other documents.

Plant Sightings. Al Lindberg found a 20-foot-tall individual of *Kalopanax septemlobus* (castor aralia) growing in Coffin Woods, Nassau County, in the spring of 2016 approximately 0.3 mi from the site of two smaller specimens that he and Lois Lindberg had found and removed several years ago (see LIBS newsletter, 2014, vol. 24, no. 3). The tall *Kalopanax* may be the source of the smaller plants that they found. It will be removed later this year.

Save Plum Island. An important step in preserving Plum Island was taken on 16 May 2016 when the U.S. House of Representatives approved Congressman Lee Zeldin's "Don't Sell Plum Island Bill" (HR 1887) that would require the Government Accountability Office to prepare a report on options for the disposition of the island, including turning it into a wildlife refuge or national park. The fight is not close to being over but passage of the bill is considered to be a key victory by environmental groups. Similar legislation is proposed but has not yet moved through the Senate. Among those who expressed interest in purchasing the island is Donald Trump, the real estate developer and Republican presidential nominee; "It would be a really beautiful, world-class golf course," he told Newsday in 2013. LIBS is a member of the Preserve Plum Island Coalition (http://www.preserveplumisland.org), and John Turner (co-chair of the LIBS Conservation Committee) has been very involved in the effort.

(Pitch Pines continued from cover)

Figure 2, left. This infected tree has been bucked. It shows a longitudinal chain-sawed cut lengthwise along the trunk. This helps the bark to flake or fall off exposing live beetles and larvae to the elements. [Photo by M. Lamont.]

Figure 3, below. Infected and live-cut trees remain on the forest floor. Pitch pine wood is not commercially valuable so there is no market for it. So they lie on the forest floor decaying for years. You can see living green pines behind this cut-over infected area. These pines are still alive today and do not seem to be infected. Hopefully the cutting last year of this infected spot stopped the beetles from advancing, at least at this area. [Photo by M. Lamont.]

Ideally, salvage removal of cut trees should be done on Long Island but there is no market for pitch pine wood. At the annual Pine Barrens Conference held at Brookhaven National Labs in Upton, N.Y. in 2015, a state official stated that at the Rocky Point Pine Barrens State Forest they would consider allowing interested lumber companies to come in and cut commercially valuable oaks (*Quercus* spp.) if the company would also agree to hauling out all the cut pitch pine. In March of 2016, another state official at the Long Island Natural History Conference said that this arrangement did not happen since no one bid on the project. Seeing thousands of pines lying dead on the forest floor is not esthetically pleasing (Fig. 3). The cut trees also add much fuel wood to an area, and if a fire went through it would make for an intensely hot and deep-burning fire.

Another strategy that seems to be having some success in infected areas here on Long Island involves thinning pitch pine stands. It gives certain pines an advantage of space, sunlight, nutrients and water without having to compete for these resources. The stronger the tree is the better it can fight off an attack of southern pine beetles. Thinning the pine stands makes it harder for beetles to find remaining pines. State officials say that this tactic has worked in certain areas and that in Henry's Hollow there has been excellent pine regeneration (http://www.dec.ny.gov/press/102635.html). However, beetles can and do overwhelm even healthy, vigorous trees by their sheer numbers.

Long Island had a prolonged, cold winter in 2014-15 and state officials estimated that 90% of the beetles were killed. This past winter, 2015-16, was unusually warm so most likely many beetles survived. Beetle numbers are cyclic like other insects. Some years there are serious outbreaks while other years you hardly notice them. It remains to be seen what this year will bring.

While other Long Island conifers are not preferred host trees, beetles can also attack white pine (*Pinus strobus*) and Norway spruce (*Picea abies*). It is devastating to lose significant plantings in cultural landscapes. Extreme care must be exercised by competent people before claims are made that a cultural planting is infected with southern pine beetles.

What else can be done to try to stop or curtail the southern pine beetle? About 80% of all pitch pines were killed in Connetquot River State Park Preserve by the insect. The insect has now been found in upstate New York, Connecticut and Massachusetts. In upstate New York, the beetles have not been found in living trees, but they have been captured in traps, proving that the insect is present. If the trees undergo stress and weaken, the insects will get the foothold they need. So what can we do? Thinning and cutting hopefully will have advantages, and so far these methods seem to be working here on Long Island. Cultural landscapers and homeowners have sprays, albeit environmentally risky and expensive, to use. Even though people never want to hear this, we should all hope for the return of colder winters that have preserved our pine barrens for thousands of years. Can this happen in the new, fast-moving world of climate change?

Literature Cited

Lamont, M. 2015. The Southern Pine Beetle on Long Island. Quart. Newslett. Long Island Bot. Soc. 25:1, 7.

A New Pest of Pines on Long Island: Southern Pine Beetle Finally Arrives

Dan Gilrein
Extension Entomologist
Cornell Cooperative Extension of Suffolk County

In fall 2014 I was notified that many pitch pines (*Pinus rigida*) were dead or dying at Connetquot River State Park Preserve on Long Island (Fig. 1), and I visited the site in early October with NYS DEC and Central Pine Barrens Commission representatives. We found hundreds of trees with numerous dime-sized masses of pine pitch distributed from the base of the tree to very high in the canopy (Fig. 2), and winding galleries in the cambium zone beneath the bark (Fig. 3).

Figure 1. Pitch pines at Connetquot River State Park killed by southern pine beetle. [Photo by D. Gilrein.]

I identified specimens collected from the park and two other sites in Hampton Bays as southern pine beetle (SPB, *Dendroctonus frontalis*), a native pest of pines in the southeastern United States (Fig. 4), and this was confirmed by entomologist Dr. Robert Rabaglia, Forest Health Protection, USDA Forest Service. NYS DEC staff also identified SPB from Wertheim samples submitted to them following Carissa Aoki's presentation on SPB at the Pine Barrens Forum in 2014. SPB was also found in Oyster Bay traps earlier in the year. It had not been previously reported from New York State.

Figure 2. Small pitch tubes are characteristic of southern pine beetle attack. They can be found from the base to 60 ft. [Photo by D. Gilrein.]

Southern pine beetle (SPB) has been expanding its range northwards, and in 2010 was responsible for killing pines on 14,000 acres in southern New Jersey. I had been warning arborists to expect it on Long Island but hoping for a less dramatic introduction. We do not know how or when it first arrived but the extent of infestation suggests it has been established for at least several years. Last year SPB was found in traps in two areas in the lower Hudson Valley, northwestern and eastern Massachusetts, Rhode Island, and Connecticut. In most areas no infested trees have been found.

SPB almost always kills its hosts, including both healthy and weakened trees. Most available information suggests that all pines are at risk as well as some spruces. In Long Island landscapes I have seen or had reports of attacks to pitch, eastern white (*P. strobus*), and Japanese black pines (*P. thunbergii*) and Norway spruce (*Picea abies*). In Connecticut, Scots (*P. sylvestris*), red (*P. resinosa*), and pitch pines have been affected. Red spruce (*Picea rubens*), Japanese red pine (*P. densiflora*) and many native southern pine hosts are noted in Thatcher, et al. (1980). Foresters in New Jersey reported seeing one eastern hemlock (*Tsuga canadensis*) attacked, situated among heavily attacked pitch pines.

Our agriculture and landscape horticulture industries in Suffolk County are highly interconnected with forests and other unmanaged sites where pests are concerned. Invasive arthropods, weeds, and pathogens can be introduced on plant material or vehicles. Outbreaks of gypsy moth in forest areas often spill over into residential landscapes. In early 2015 we noticed southern pine beetle attacks in a public garden that appear to have originated in the forest nearby. Colleagues in the southeast reported SPB was rarely a problem there, but Florida has seen several periods where SPB populations killed many trees in the 'urban forest.'

At a special meeting in February 2015 I arranged for Dr. Matt Ayres from Dartmouth to speak to Long Island arborists on SPB where I also presented information on protecting landscape trees. Dr. Ayres's research showed that record cold conditions during that month would be only a

temporary setback for the population and confirmed all host trees to be potentially at risk.

Since then dozens of valued landscape trees have been affected here on Long Island. We are unfortunately unable to predict whether any particular specimen will be attacked and how long the current 'outbreak' will last. However, I am coordinating some trap monitoring with Pine Barrens Commission staff and NYS DEC Forest Health's larger effort, to discern population trends, prospective areas for surveys and mitigation, and when spring dispersal begins (beetles were first detected in traps on 4/20). In addition to presentations to industry, Master Gardeners and others, we have information for homeowners posted at NYS DEC's SPB page (http://www.dec.ny.gov/animals/99331.html) and at Cornell Cooperative Extension's Home Horticulture website (http://ccesuffolk.org/gardening/horticulture-factsheets/tree-and-shrub-insect-pests). Unfortunately, there are no organic or cultural controls that protect trees, though further research might suggest new strategies.

Reference

Thatcher, R. C. et al. (eds.). 1980. The Southern Pine Beetle. U.S. Department of Agriculture, Expanded Southern Pine Beetle Research and Applications Program, Forest Service, Science and Education Administration, Technical Bulletin 1631. Accessed April 4, 2016 at http://www.barkbeetles.org/spb/spbbook/Index.html

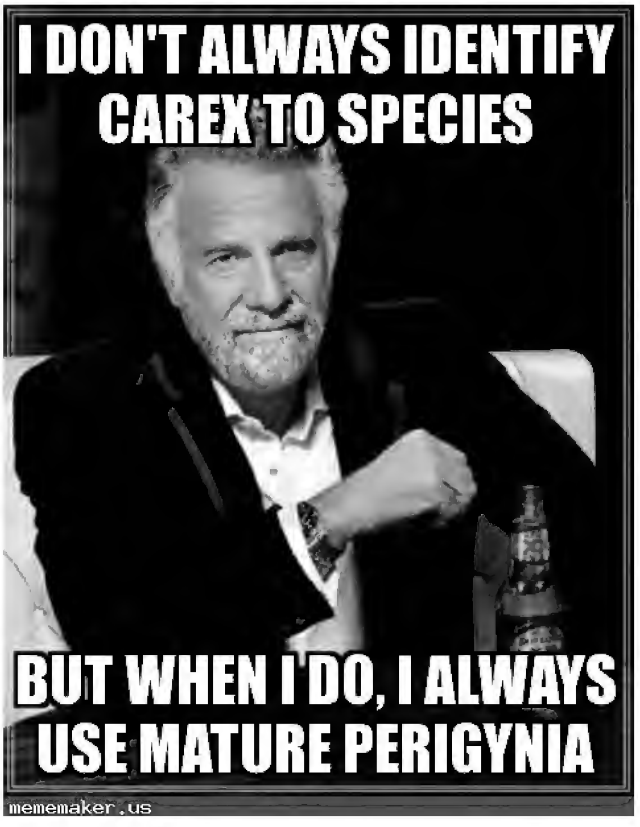

Figure 3. Southern pine beetle gallery in underside of eastern white pine bark. Larvae are visible in some niches: all were killed by record cold of February 2015. [Photo by D. Gilrein.]

Figure 4. Southern pine beetles, approx. 3.5mm long (slightly larger than 1/8"). [Photo by D. Gilrein.]

On June 15, the New York Botanical Garden hosted a Wikipedia Edit-A-Thon with the goal of increasing the number of Wikipedia entries for New York botanists. A biography of Betty Lotowycz was created that day. (See https://en.wikipedia.org/wiki/Grace_Lotowycz) LIBS members contributing to her page include David Papayanopulos (information source), Barbara Conolly (photographer) and Margaret Conover (Wikipedia editor).

WIKIPEDIA
The Free Encyclopedia

Trillium

In the April woods at dusk,
amphibian music over the pond,
whip-poor-will music in the trees,
trillium dance
and a child watches.

Like stars she can not see them revolve
but they are in threes
their fans of leaves and sepals
hues of green,
tapering petals: magenta, maroon, white.

The child believes
and in the cool darkness
hears the plants call down motions of stars.

--- Maxwell Corydon Wheat, Jr.
(2003) Quart. Newslett. Long Island Bot. Soc. 13(2):34

Painted trillium (*Trillium undulatum*). [Photo by B. Conolly.]

From the Editor: At the Annual LIBS Barbecue on June 14th, I was surprised to be honored with LIBS' Distinguished Service Award for 12 years as newsletter editor and for my role as LIBS co-founder, with Bob Zaremba, in 1986. I was deeply moved by Barbara Conolly's presentation speech and by all of your words of congratulations. Thank you from the bottom of my heart! In August I'll be leaving Long Island for a new home in Eugene, Oregon, but I'll continue to edit the newsletter from there, with help from Skip and Jane Blanchard in Gainesville, Florida. I will certainly miss all of you, including some who have been friends for 30 years! ---Margaret

Field Trips

August 27, 2016 (Saturday) 10:00 AM
Bayard Cutting Arboretum State Park
Great River, NY
Trip leader: Rich Kelly
Cell phone 516-509-1094

We will look for interesting weeds around the community garden and at the maintenance/dump area. Then on to the Paradise Island Native Woodland trail which has a pine-barrens type wet woods as well as a variety of sandy soil species. We will walk along the bulkheaded Connetquot River, but there are many interesting plants along the way. There is also a series of small wooded ponds which we will explore.

Sunscreen, insect repellent, and water to carry are all recommended. I will carry a lunch/snack to eat on the go. There is a café, but this may be crowded if the weather is nice.

Directions: We will meet just after 10AM (the gate opens at 10:00) in the southern (far) end of the main parking lot. This is closest to the main building. Take the Southern State Parkway east and continue south on the Heckscher Spur. Get off at Exit 45E and head east on Montauk Highway. Travel about ¾ mile and the entrance will be on the right. The address is 440 Montauk Highway, Great River. There is an $8 Vehicle Use Fee unless you have an Empire Pass. This walk is co-listed with the Torrey Botanical Society. Please call to register.

September 10, 2016 (Saturday) 10:00 AM
Sagamore Hill National Historic Site
Oyster Bay, NY
Trip Leader: Lois Lindberg
Email: lalindberg3@optonline.net

Sagamore Hill includes a variety of habitats on its 80+ acres. We will explore an old carriage road, fields, woodlands, and Eel Creek marsh on the shoreline of Cold Spring Harbor. One species of note here is *Vernonia gigantea* (tall ironweed), endangered in New York State. Theodore Roosevelt was an avid naturalist who loved his Oyster Bay home, and this trip is a follow-up to an article in the Fall 2014 LIBS Newsletter.

For those interested, we may visit the Roosevelt Museum at Old Orchard, and we have also secured a reservation for a guided house tour of TR's home at 2:30 PM.

Bring lunch. *Space is limited for the house tour, so registration is required.*

Directions: From Northern State Parkway, Long Island Expressway (I-495), or Route 25A (Northern Blvd.), take Route 106 North into downtown Oyster Bay. Following the brown-and-white signs, turn right onto East Main Street (at Nobman's Hardware Store) and travel 2 miles. Turn left onto Cove Neck Road and drive 1.5 miles to Sagamore Hill. For GPS navigation use the address 12 Sagamore Hill Road, Oyster Bay, NY 11771, which is the Visitor Center, located at the entrance of the park.

2016 Torrey Botanical Society field trips to be co-listed with LIBS:

Further information on these co-listed field trips may be found at the Torrey website http://www.torreybotanical.org/field-trips/

Saturday, July 30 - Marine Park, Brooklyn NY, Trip leader: Helen Forgione, helen.forgione@parks.nyc.gov, 917-304-7185

Sunday, August 7 - Clay Pit Ponds State Park Pres., Staten Island, NY, Trip leaders: Staten Island Museum Research Associate, Ray Matarazzo, and Brooklyn Botanic Garden Assistant Gardener, Will Lenihan, wlenihan@bbg.org, 929-423-0129

Saturday, September 10 - NYBG, Bronx, NY,
Trip leader: Daniel Atha, datha@nybg.org, 718-514-3922

Saturday, October 1 - Hempstead Plains, Hempstead, Contact: Betsy Gulotta, betsy.gulotta@ncc.edu, 516-317-7267

LIBS Volunteer Trip to Great Gull Island.

MaryLaura Lamont is coordinating a work-day trip to Great Gull Island (in eastern Long Island Sound) with Helen Hayes of the American Museum of Natural History, tentatively on Saturday, September 17, 2016 with a rain date on Monday the 19th (or possibly both days). The island is a nesting sanctuary for terns that require bare sand for nest sites, and LIBS volunteers will remove vegetation from overgrown areas after the terns have fledged their young and left the island. Vegetation to be removed includes non-native herbs like *Raphanus raphanistrum* (wild radish), *Melilotus albus* (white sweet-clover), *M. officinalis* (yellow sweet-clover), and other species. A boat from Orient will be provided by the museum. If interested in volunteering please contact MaryLaura (woodpink59@gmail.com) for details.

Long Island Botanical Society
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Upcoming Programs

September 13, 2016* **Tuesday, 7:30 PM**

Andrew Greller: "Mayan Natural History in Belize." Annual visits to Belize over the past few years have allowed Andy to explore the connection between the long-lived Mayan civilization and the landscapes the Maya modified to sustain themselves. Here are the plants and animals that thrived within the Mayan World, and a peek into what remains of that once-mighty civilization. Andy is Vice President of LIBS and Professor Emeritus in the Biology Department of Queens College. He has published many articles in peer-reviewed journals on the flora and vegetation of Long Island. He still leads field trips, and presents talks on various botanical subjects.

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

October 11, 2016* **Tuesday, 7:30 PM**

Jessica Enzmann: "Seatuck Environmental Association Efforts to Restore the American Chestnut on Long Island." The American chestnut was once a dominant tree in the forests of the Eastern United States, accounting for one out of every two trees in some woods. But an Asian chestnut tree, imported into New York in the late 1800s, carried a fungus that would change everything. Since the arrival of the fungus, billions of trees have died, and now organizations such as Seatuck Environmental are working to preserve the few remaining trees and restore the population. Jessica is a recent graduate of Stony Brook University with a Bachelor of Science degree in Biology, with a concentration in ecology and evolution. She plans to further her studies in wildlife science, and pursue a career in conservation.

Location: Earth and Space Science Building,
Gil Hanson Room (Room 123),
Stony Brook University, Stony Brook

* Refreshments and informal talk begin at 7:30 p.m. Formal meeting starts at 8:00 p.m. Directions to Muttontown or Stony Brook: 516-354-6506