LONG ISLAND
PINE BARRENS
SOCIETY
Protecting Land & Water

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Wayne Cook

SUBURBAN SPLENDOR: A sailboat awaits a captain at a Pine Barrens lake.

Pine Barrens TV

The Pine Barrens Society's television program airs on Cablevision/Altice Public Access. October 1, 2022 to September 30, 2023.

The program can also be viewed on the Society's YouTube page at www.youtube.com/lipinebarrenssociety.

Towns of Babylon, Brookhaven, Huntington, Islip, Riverhead, Smithtown, Southampton & Southold Channel 20:

Saturdays at 10:30 AM
Wednesdays at 7:00 PM
Thursdays at 12:30 PM

Town of East Hampton:

Wednesdays at 6:30 PM
Thursdays at 9:00 PM
Fridays at 3:30 PM

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LONG ISLAND
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today

CELEBRATING PINE BARRENS PRESERVATION

What's Been Done, What's Next

Thirty years ago, we gathered at Southaven County Park in Yaphank to witness then-Governor Mario Cuomo sign the Pine Barrens Protection Act into law, which had been passed unanimously by the New York State Legislature after a three-year battle. He delivered an eloquent speech that day, memorializing the importance of protecting Long Island's Pine Barrens. Since then, over 106,000 acres of precious Pine Barrens have been preserved. Our drinking water, rare species and their habitats have been safeguarded.

Please join us on June 17, 2023, when we will celebrate this momentous achievement in style, once again at Southaven County Park. Several of the original forces behind the legislation will be present, including Assemblyman Fred Thiele and Steve Englebright.

In addition to the retrospective, the morning celebration will also focus on "The Best of the Rest," a campaign to preserve 3,800 acres adjacent to the lands previously protected, which the Long Island Community Foundation is helping to fund. As reported in Newsday on April 4, 2023, we have achieved initial success with the protection of 152 acres, representing a portion of one of the 15 aggregated parcels that comprise this campaign. These acres are part of the approximately 700 acres of Rose-Breslin land nestled between Brookhaven Airport and the Long Island Expressway. Due to its size, this area supports numerous different natural communities and provides habitat for many plant and animal species, such as great horned owls, screech owls, white-tailed deer, foxes and pink lady slippers. "The Manorville property should be permanently preserved for open space protection," said Richard Amper, the Society's executive director.

Brookhaven Town's acquisition of the parcel, on the northwest corner of Moriches-Middle Island Road and Weeks Avenue, used the transfer of development rights (TDR) process, which was written into the Comprehensive Management Plan that complements the Pine Barrens Protection Act. This process allows for the preservation of environmentally sensitive land while permitting developers to increase activity adjacent to other construction. The TDR process also saves taxpayer dollars since money is not exchanged. It is a win-win process for all.

Rose-Breslin spokesman Brian Ferruggiari said the company never had any plans for this special property, which is in the compatible growth area of the Pine Barrens. Instead, Rose-Breslin will be able to expand their Meadows project. "Our project is a prime example of how responsible development and preservation can coexist," he said.

Suffolk County has also embraced "The Best of the Rest." The Office of Economic Development and Planning has contacted landowners of the identified parcels to determine their interest in selling their land for preservation.

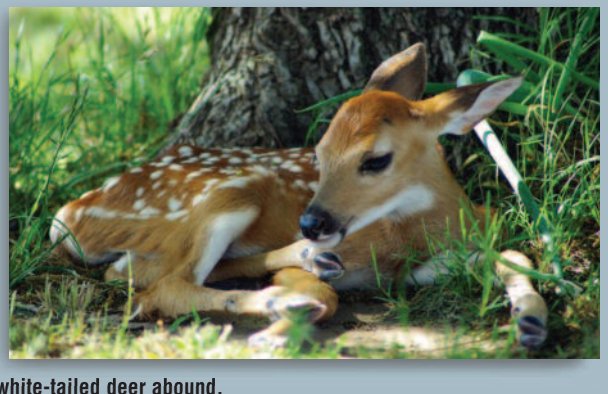
Students representing our Middle School Kids Go to College Program, which is supported by the National Grid Foundation, will demonstrate how the next generation of environmental stewards will protect our water supply. Live music and guided hikes will add to the festivities.

Join us at Southaven on Saturday, June 11, 10:00 am – 1:00 pm, for what is sure to be an exciting time for all!

Tom Casey

A VIEW FROM ROBERT CUSHMAN MURPHY COUNTY PARK IN MANORVILLE: The spectacular Sandy Pond.

Left-John Turner, Right top-Chuck Harris, Right bottom Becky McCray



LIFE IN THE PINE BARRENS: Pink Lady Slipper, great horned owls and white-tailed deer abound.

the thicket

Pinecone Love

By John Turner

Mr. Turner is a member of the Board of Directors of the Long Island Pine Barrens Society.

John Turner

PINECONES AS A FOOD SOURCE: The photograph shows pinecones are an important source of food for a number of wildlife species such as squirrels, chipmunk, and smaller rodents.

In spring, about a decade ago, I decided to hike the 4.5-mile loop trail at the NYSDEC's 2,000-acre David Sarnoff Preserve in Riverhead. I parked my navy-blue Hyundai Excel in the southern end of the eastern parking lot, near a row of mature pitch pines and headed off to enjoy the hike. Upon returning several hours later I was surprised to learn the once dark blue car had become light yellow — a gift from pine pollen — a coating provided by what must have been many millions of tiny pollen spores the pines had released while I hiked the pine-dominated forests of the preserve.

After placing my backpack and walking stick in the car, I watched with interest for a few minutes as diffused clouds of yellow smoke wafted away from the pines, carried on the slightest of breezes. Moving closer to an overhanging branch, I could see thin pollen wisps drifting from the male, or pollen, cones, clustered like little sausages six inches from the branch tip. The purpose of all this abundance? Pollination of the more well-known, reddish-colored female, or flower cones, located higher in nearby trees (female cones are higher than male cones to reduce the likelihood of self-pollination that would be likely if male cones were higher and shed pollen downward to the female cones below it on the same tree). If ever there was a need to illustrate an example of wind pollination at work here it was!

If a pitch pine pollen grain (which, by the way, looks like Mickey Mouse with a face and two rounded ears) pollinates a female cone, the cone begins to enlarge, taking on the familiar wooden pinecone form of an open shape with numerous projecting scales, the tips of which often possess a tiny bristle or thorn to deter animals from feeding on them. The cones take two years to mature with two seeds per scale and at maturity, they begin to shed their seeds. The seeds are elongated, with a flat, winged membrane which aids in dispersal.

The conical-shaped cones of dwarf pines behave differently. Rather than growing and opening after two years, to shed seeds as "normal" or open cones do, the cones on dwarf pitch pines remain resolutely closed, patiently waiting for the lick of flame to melt the resins holding the scales closed. This way, the vulnerable cones on the low stature pines take advantage of the fire rather than being destroyed by it. These cones are referred to as closed or serotinous cones and are found on dwarf pitch pines and on jack pine which grows in highly fire prone environments in the Upper Midwest.

Pitch pinecones have another adaptation that enhances the chances the seeds survive. In wet weather, the scales close, making it more difficult for the seeds to disperse. This is important because a heavier, wet seed won't disperse far, and pine seeds want to spread away from the shade of the parent tree.

While pitch pinecones are generally round and between the size of a golf and tennis ball in size, the cones of some other pines are very different. The cones of the western sugar pine are huge, often more than a foot long, sometimes reaching one and one-half feet in length and four inches wide (Be careful when hiking in sugar pine forests!) Our other native pine — white pine — has elongated cones about four inches long and are one and one-half inches wide.

The pinecones on pitch pine serve an important, if utilitarian, purpose — as a protective structure for the development and dispersal of seeds. And while I've come to appreciate pine cones for this vital function, as the years have gone by, I've come to appreciate even more these cones for their swirling shape, symmetry, and their overall design. I never tire of looking at these objects of natural architectural beauty.

ENVIRONMENTAL NEWS NOTES

By Andrew Wong. Program Coordinator

A NEW HIKING HIGHLIGHT

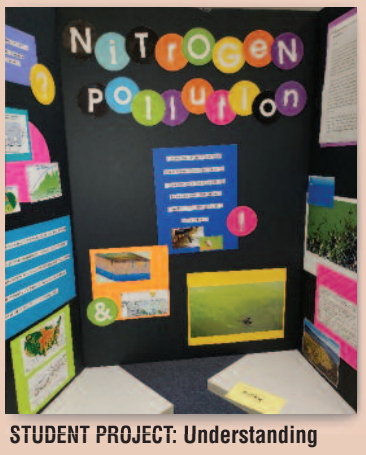
Starting in January, the Long Island Pine Barrens Society launched a social media campaign titled the "12 for 12," a hiking focused campaign meant to highlight trails across Long Island which have not received significant focus from the Society in the past. As of now this campaign has highlighted the Paumanok Trailhead, Setauket Greenway, Wildwood State Park, Blydenburgh County Park and the Ashley Schiff Preserve. We will continue to hike throughout the year.

Each month the Society also invites members of our community to submit their own trail or park highlights, to be featured in a short hiking guide, which will be published at the start of 2024. While the focus of this campaign is on social media, we invite anybody interested in submitting their own park recommendation or highlight to send us an email or letter featuring it. You can find the LIPBS office address and email at the back of the newsletter.

MIDDLE SCHOOL KIDS GO TO COLLEGE RETURNS IN PERSON!

Andrew Wong

ATTENDING STONY BROOK UNIVERSITY: Students learn about the state of water quality on Long Island.



STUDENT PROJECT: Understanding nitrogen pollution.

Supported by the National Grid Foundation, the Long Island Pine Barrens Society has once again been able to provide our Middle School Kids Go To College program to nearly 100 students across both the Patchogue-Medford and Smithtown school districts. This year we had the exciting opportunity to visit schools and go to Stony Brook University in person for the first time since 2019.

On May 25, approximately 70 middle school students from the Patchogue-Medford school district came to Stony Brook University's School of Marine and Atmospheric Sciences for an in-person lecture from Dr. Christopher Gobler, a world-renowned scientist. Students prepared their own projects, based on concerns about Long Island water quality, and presented them at the event to Dr. Gobler as well as to LIPBS staff.

Society staff also attended individual "Water Day" science fairs at each school to discuss the students' projects more in-depth. Students will have another opportunity to showcase their work at our Pine Barrens Protection Act 30th Anniversary celebration on June 17 at Southaven County Park. Those students whose projects went above and beyond will be honored at the event.

SOCIETY TALKS

In the first half of the year, Society staff has been busy travelling all across the Island to give talks in a number of communities. While the LIPBS has always made trips to give educational talks regarding our work, this year has been especially busy.

In February, Board members travelled to Mt. Sinai for a talk at the Rose Caracappa Senior Center. Just over a month afterwards, our Program Coordinator made the trip out to the Quogue Library for a talk on the Southern Pine Beetle. In June, board member John Turner will be at the Longwood Library for another of many talks he's given this year.

If you're a member of a group or community and would like to host a talk from the Long Island Pine Barrens Society, feel free to reach out via email or phone to set something up!

2022 WATER QUALITY SURVEY: WHY WE WORRY

On Thursday, March 23, Dr. Christopher Gobler, endowed chair of coastal ecology and conservation in the School of Marine and Atmospheric Sciences at Stony Brook University, presented his annual talk, "State of the Bays, 2023: Love Where You Live. to Long Island environmental leaders. Scientists at Stony Brook University spent last summer assessing bodies of water surrounding Long Island for measures of water quality. Unfortunately, every major bay, inlet and estuary continues to be affected by nitrogen from wastewater. Nitrogen levels in groundwater have risen 60% in recent decades and coastal ecosystems have continued to degrade. Since the 1990's, critical marine habitats such as eel grass and salt marshes have declined by up to 90%. Climate change is exacerbating the nitrogen problem. To make matters worse, there are emerging contaminants that are used in industrial and consumer products, such as PFAS and 1,4 dioxane, that are negatively affecting our drinking water supply.

Dr. Gobler cited the numerous fish kills in area waters that occurred last summer as evidence of climate change. He described a new study that revealed that combinations of high temperatures, heat waves and low oxygen have contributed to the collapse of New York's bay scallop industry. And once again, excessive nitrogen loading was shown to significantly increase the intensity of algal blooms, harmful algal blooms and low oxygen conditions across more than 25 locations on Long Island.

Nitrogen from household sewage enters poorly performing home septic systems and then seeps into groundwater and ultimately, into Long Island's bays, harbors, and estuaries or, in some cases, is directly discharged into surface waters. This nitrogen loading is a root cause of algal blooms and dead zones, that are exacerbated when a tropical storm delivers more precipitation than supersaturated ground conditions can handle.

ZONES OF DISCONTENT: The Gobler map identifies algal blooms and low oxygen locations.

Obviously, action is needed to mitigate these problems. Suffolk County now requires innovative alternative septic systems for all new residential construction and for major renovations. These systems reduce the amount of wastewater nitrogen that enters our drinking and surface waters. In addition, Dr. Gobler reported on "in the water" remediation approaches involving seaweeds and bivalves that can locally reduce nitrogen loads, algal blooms, and ocean acidification.

founder's corner

The Genesis and Meaning of *Moths of the Past*

By John Cryan

Mr. Cryan is one of the founders of the Long Island Pine Barrens Society.

I was forced to retire early in mid-2015. My wife, Christina, had had open-chest surgery the year before, and though she made it through that, she was never the same afterwards. I moved upstate full-time to care for her in the cabin we'd built together over the previous decades, up in what we called 'The Land of Manitou', otherwise known as the Catskill High Peaks. She wanted to stay there.

John Cryan

THE BUCK STOPS HERE: An adult buck moth in the Pine Barrens.

During the years that followed, Christina's condition declined further. She developed several serious autoimmune disorders which compounded her pain and suffering. I did the best I could in a very remote location, and luckily had a sympathetic and competent general practitioner and pharmacist within a few miles willing to make house calls when necessary. For her last five years, Christina was bedbound on oxygen 24/7.

Before that happened, in the evenings I spent small amounts of time starting to organize the results of a project I had begun in my teen years, which morphed after college into a lifetime pursuit, a single, 50-year-long 'life experiment' – crossing various populations of Buck Moths from across the US in an attempt to figure out who was related to whom, and what unknown force had created a new kind of Buck Moth my best college friend Bob Dirig and I had discovered in 1977, my senior year at Cornell.

By the end of 2016 I hadn't progressed far. Christina had gotten worse and worse. I managed with her permission to sneak off to the tiny local library for a half hour every now and then in a desperate attempt to speed-read online science papers from the last half-century hoping to find some sort of clue.

That effort came up empty, though I caught up with a lot of science.

A tiny bookstore opened in the local village. With no internet at home, that became my last resort.

I couldn't afford to be away from Christina, but I could afford to buy books, especially paperbacks.

Chaos became my mantra and my business. I made a study of it.

What I found out was nobody knew much about it. There was a new thing in science called 'Chaos Theory', but it wasn't really about chaos. It was about randomness, a totally different thing, and it included some kind of new bullshit called 'Complexity Theory', or, if you will, 'Emergent Complexity.'

There were popular bestsellers over the past few decades about this malarkey. But on actual chaos? Nothing. Neither scientific nor popular writing. A huge void. An empty space big as the Universe.

"Why was that," I asked myself. Something's seriously amiss here. Scientists are usually not afraid to study anything. What makes chaos such a no-no?

What I found in pretty short order was that scientists weren't avoiding chaos; they had no ability to study it. That's because chaos is not amenable to math. Math can't model it. And since math is the language of scientists, scientists just ignored chaos. They studied order only, because that's what math can do – model order. Not chaos. Randomness was the closest to chaos math could come. But randomness is a form of order. It has rules. Chaos doesn't. That's why it's called chaos.

So, I was stuck. As the country went haywire, I contemplated chaos and what it meant to have such a huge gap in science. After all, chaos is everywhere. The newspapers I brought to Christina to read in bed every day were full of chaos.

Somewhere in 2017, I had an epiphany. The epiphany turned into a brainstorm. I started scribbling.

The epiphany centered around something in one of Darwin's notebooks, which had been lost awhile but recently found again. It was a simple question: 'Why is life short'. Darwin had scribbled it so fast he forgot the question mark at the end. But a question it was anyway, and a really big one at that.

When I read about the lost and found notebook containing the really big (big because neither Darwin nor anyone else had ever found a satisfactory answer to it) question, I realized this was the key to my dilemma. Solve that question, and I will solve the Buck Moth mystery, and probably much more.

And chaos certainly lay at the center of any solution. It was the biggest thing I knew that science couldn't touch.

So I took one last quick trip to the library to get a list of the biggest gaps in science. The unanswered questions scientists were dying to answer, but didn't know how or have the tools yet to study. At the heart of just about all of them lay more than a bit of chaos.

I also found out about interlibrary loans. This tiny branch had access to the entire Hudson Valley. Now I was in business.

I made a map of all the gaps in science, and determined to fill them, realizing chaos was what was missing. And I bought, and took out, a ton of books. Each night, I read whenever I couldn't sleep.

One by one, the brainstorms came over the next three years, like a pinball game lighting up. Bing-bang-boom! Before I knew it, one thing had led to the next to the next and I had two interlinked, brand-new scientific theories, one in physics, the other in biology, specifically evolution. Chaos lay at the heart of all of it. The Chaos-Convolution Theory was born.

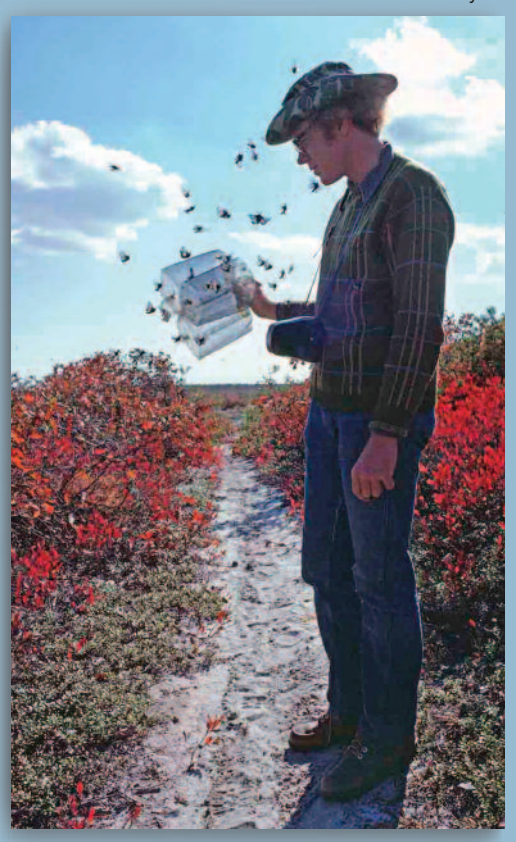
I kept my friend Bob, who is a polymath in the arts and sciences, totally in the loop. He got all my ravings, all my scribblings. All he said was "when you're done, send it all to me and I'll turn it into a science zine. This is your life thesis." Thus was born Moths of the Past.

It was published by our longtime mutual friend Don Rittner, who himself has authored and edited over 30 books. It came out three years ago, just as the pandemic hit full force. Don had to coax the hard copies out of the last print house still running in America, down in South Carolina. But out it went, into a world in agony. We sent out several hundred author copies to select people and institutions around the country and world. Because of its enormous scope, and Bob's creation of a work that truly blended art and science, we deliberately went for as wide an audience as possible, knowing scientists would probably be the last to embrace it, or even deal with it at all. After a year, we went to free internet distribution, and Moths of the Past went viral. It has been read by millions around the world, and its audience is constantly expanding.

Somehow, over the last few years, I was able, again working in bits in the middle of the night, to complete and distribute 14 additional implications white papers, supplements to the original concepts in Moths of the Past, both expanding and extending them. I'm working on more now.

But in that same period, my beloved Christina slowly weakened. She never lost her mind, her love or her fighting spirit. On the early morning of February 16th, at sunrise, she left this world. I miss her.

John Cryan



JOHN CRYAN: At home in the field.