


Long Island Conservation News Inside

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'Tis the Season to Give and Receive



Last Christmas, Noa, Miles, Alex, and Anna teamed up to raise \$169 for The Nature Conservancy on Long Island.

Please consider a gift to the Conservancy this holiday season. Visit nature.org/longisland or call 631-329-7689 ext. 10.

READ INSIDE!

JUMPING GENES, MIGRATING MARSHES

The Nature
Conservancy



Protecting nature. Preserving life.®

NATURE LONG ISLAND

CONSERVATION NEWS FROM THE NATURE CONSERVANCY

FALL/WINTER 2015

A Letter from The Director



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“There’s magic in it,” Herman Melville wrote of water, and with three major estuaries surrounding us, residents of Long Island feel the magic in many ways: in moonlit kayak rides or walks along the shore, boat rides in the wind and sunshine, fishing, surfing, swimming or watching birds scoot across a shimmering bay.

Proximity to water is often cited as the primary reason why people like living on Long Island.

Yet a majority of Long Islanders have concerns about water quality – rightly so. This past summer our bays were once again beset by algae blooms fueled by excess nutrients from wastewater and fertilizer – similar to Lake Erie’s problems except that the predominant harmful nutrient in our coastal systems is nitrogen, and our drinking water comes from an underground aquifer, not a lake.

In 2015, Suffolk County is expected to approve new kinds of treatment systems that remove far more nitrogen from human waste water than the obsolete septic systems and cesspools currently in use. We’ve heard from a number of residents anxious to use the new technology, and the Conservancy will be monitoring the process and pressing for a financing mechanism to allow for widespread use of these more effective systems.

Ask a Scientist

What animals on Long Island are considered endangered or threatened?

According to Conservation Lands Director Joe Jannsen, besides marine mammals and sea turtles off our coasts, the piping plover and roseate tern are the Long Island animals on the federal endangered species list. Under the Endangered Species Act (ESA), piping plovers are considered “threatened” and roseate terns are “endangered.” Plovers arrive on Long Island in the spring to lay eggs in sandy areas and raise their young. They depart in late summer for southern climates. Because of the plovers’ threatened status, their habitat receives special protection, and breeding areas are fenced to keep out predators and reduce the chances of nest disturbance. Although there has been some decline in recent years, Long Island’s plover population (approximately 300

This is one of several promising developments regarding Long Island water quality. Another is the public recognition by Governor Cuomo that the 4,500 south shore homes to be elevated by the Army Corps should be hooked up to sewers. We have long been urging that Sandy funds be used to achieve a holistic outcome on the south shore – protecting people, property and water quality by not leaving 4,500 septic systems in the ground percolating nitrogen and pathogens into Great South Bay.

Increasingly, the issues of water quality and coastal resilience are merging into one larger issue: healthy coastal communities. We see this in the growing public willingness to invest in saltmarsh restoration, not only for fish and birds, but also for people – because of the role marshes can play in reducing wave energy during storms.

It was John Muir who said “When we try to pick out anything by itself, we find it hitched to everything else in the Universe.”

In the universe of Long Island, water quality and healthy coastal communities are definitely hitched – to each other, and to our magical quality of life.

Nancy N. Kelley

Executive Director

The Nature Conservancy on Long Island

pairs) is still nearly triple what it was when the species was first listed under the ESA in 1986. Nearly all of New York’s roseate terns nest on Great Gull Island in the Town of Southold. A number of other animals are categorized as threatened or endangered under New York State law, including the least tern, short-eared owl, and tiger salamander.



Joe Jannsen with Bluejay.

© Derek Rogers/TNC

Please send your question for a Nature Conservancy terrestrial or marine scientist to longisland@tnc.org.

Annual Gala Raised Funds and Awareness



The Nature Conservancy of Long Island hosted Nature Inspires! The Beaches and Bays Gala on June 28 at the Center for Conservation in East Hampton. Co-Chairs Fred and Bettina Stelle joined 350 other supporters to raise \$750,000 as well as honor artist and philanthropist Bobbie Braun and the generosity of her family's Neuwirth Foundation.

Ms. Braun collaborated with Silas Marder on a spectacular art show, which featured Ms. Braun's landscape paintings, as well as works by Long Island artists Terry Elkins, Jim Gingerich, Jill Musnicki and the Wednesday Group: En Plein Air Painters of the East End (see pages 6 & 7).

The event also honored The Andy Warhol Foundation for the Visual Arts for its longtime support of art programs at the Conservancy's Warhol Preserve in Montauk.

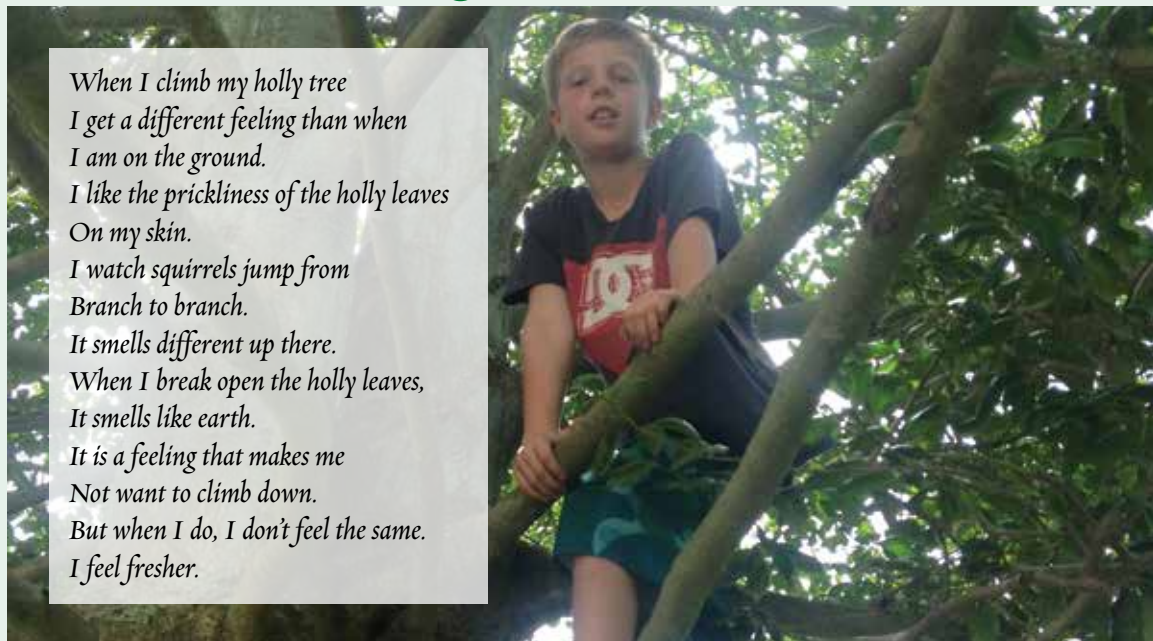
We thank all our guests and corporate sponsors ITG and Bloomberg.

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Co-Chair and Trustee Fred Stelle, Long Island Executive Director Nancy Kelley, New York Director Bill Ulfelder and Co-Chair Bettina Stelle.

Climbing Trees by Noah Topliff

*When I climb my holly tree
I get a different feeling than when
I am on the ground.
I like the prickliness of the holly leaves
On my skin.
I watch squirrels jump from
Branch to branch.
It smells different up there.
When I break open the holly leaves,
It smells like earth.
It is a feeling that makes me
Not want to climb down.
But when I do, I don't feel the same.
I feel fresher.*



© Kate Topliff

Noah Topliff in Sag Harbor climbing his favorite holly tree.

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26.3 trees preserved for the future

1233.9 lbs. solid waste not generated

75.8 lbs. waterborne waste not produced

2,430 lbs. net greenhouse gases prevented

Toledo Turns Algae Into National Front Page News

“Could it happen here?” was a question some Long Islanders asked when 400,000 people in Toledo, Ohio, lost their drinking water in August due to a toxic algae bloom.



© Marian Lindberg/TNC

Blue-green algae caused a pond closure in East Hampton.

In fact, Long Island confronts a similar water quality challenge, as toxins of the sort that contaminated Toledo's water supply have been found in a growing number of Long Island water bodies. Various beaches, ponds and shellfish beds were closed across Long Island this past summer, or covered in macro algae.

The key difference between Toledo and Long Island is that our drinking water doesn't come from a lake or reservoirs. Underground aquifers supply water to the 2.8 million residents of Nassau and Suffolk Counties by means of public and private wells. Yet the source of Toledo's water woes – an excessive amount of nutrients – does pose a threat to Long Island drinking water. According to the Suffolk County Water Authority, nearly 70% of the County's community supply wells are rated high, or very high, for susceptibility to nitrate, the reactive form of nitrogen, the nutrient found in human waste and in much of the fertilizer used on Long Island. In high quantities, nitrate causes blue baby syndrome and other health problems. As nitrogen levels in the aquifers increase, it will become harder and more expensive to maintain the safety of our drinking water.

In Suffolk and along Nassau's north shore, the biggest local source of nitrogen is waste from septic systems, which is why The Nature Conservancy and other groups have been advocating for wastewater treatment modernizations, including advanced nitrogen-reducing onsite disposal systems. Suffolk County officials have vowed to approve such systems for residential use in 2015. In Nassau County, local officials met with scientists in October to learn more about the extent and impacts of nitrogen pollution, as well as solutions.

Nassau officials have also embraced nitrogen reduction technology at the Bay Park Sewage Treatment Plant and are seeking funding for an outfall pipe that would discharge treated effluent to the ocean, rather than the western bays, where excess nutrients have harmed marshes and other marine systems.

Much of the progress to date is the result of a strategic communications campaign based on sound science promoted by the Conservancy and other founding members of the Long Island Clean Water Partnership.

To learn more or become a member, please visit longislandcleanwaterpartnership.org.



© Carl LoBue

Macro algae at Point Lookout.

Conservation Updates

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Sunken Meadow Marsh

We previously reported on one of Sandy's silver linings: removal of a man-made dam that since the 1950s had restricted the flow of salt water from Long Island Sound to the tidal marsh at the end of Sunken Meadow Creek in Kings Park. In June, the U.S. Department of the Interior announced that \$2.5 million in Sandy recovery funds will be used to restore the 135-acre marsh, which has lost much of its native vegetation primarily because of the lack of salt water and regular tides. The Conservancy's senior coastal scientist helped design the restoration project.

Engineers capitalized on Sandy's creation of a channel by building a bridge rather than reconstructing the dam that previously connected the two sides of Sunken Meadow Creek. Now the salt marsh downstream will be restored.

Studying Mercury in Salt Marsh Birds

The Conservancy once again teamed up with the Biodiversity Research Institute to test salt marsh birds for mercury levels. On July 1, New York's new Mercury Thermostat Collection Act took effect, requiring thermostat manufacturers to establish a recycling program for out-of-service mercury thermostats. Of all birds tested in New York and New England, the highest mercury levels have been found in birds that feed and breed in a marsh in Hempstead, located near two incinerators. It is hoped that future research will show a decline in the Hempstead mercury readings as a result of more thermostats being recycled rather than burned.

Nikki Egna releases a salt marsh sparrow in East Creek marsh in Sands Point following extraction of blood from the bird to determine mercury levels. Birds were tested in July throughout Long Island.



© Joe Janssen/TNC



© Randy Parsons/TNC

Plum Island Protection

Senators and Congressmen from New York and Connecticut have introduced a bill that, if passed, would pave the way for Plum Island to be conserved rather than sold for development. An independent appraisal commissioned recently by The Nature Conservancy found that a sale would not net the federal government nearly as much money as proponents of a sale have been maintaining.

The 19th century Plum Island lighthouse sits on the southwest side of the island, one of the most diverse regions in the state for rare plants.

Jumping Genes, Migrating Marshes

© Cold Spring Harbor Laboratory



Nobel Prize winner Barbara McClintock at Cold Spring Harbor Laboratory circa 1950.

© The Nature Conservancy 2014



Senior Coastal Scientist Nicole Maher carries the lab's repurposed pipe.

that the Lab had upgraded its irrigation system and removed the pipe, meaning the pipe had likely been used in the ground-breaking genetic investigations of Barbara McClintock, who received The Nobel Prize in Physiology or Medicine in 1983. Studying maize plants grown at CSHL, Dr. McClintock discovered that not all genes are fixed. Some can change places, causing mutations and even undoing mutations. These “transposable elements” became known as jumping genes.

Dr. Maher jumped at the chance to repurpose the pipe.

The Lab agreed and now sections of the pipe are sitting in salt marshes from East Hampton to Lawrence, an integral part of the Conservancy's Climate Adaptation Research.

“I learned about Dr. McClintock and her work in school,” notes Dr. Maher. “She is one of the most highly regarded women in science in this country. It's exciting for me to think that I am using some of the equipment she used. In a way, we are both investigating how living things grow and change.”

So what do jumping genes and migrating marshes have in common? Curious women, science, and aluminum pipe.

Off Lawrence Hill Road in Cold Spring Harbor, you might hear scientists discussing jumping genes on one property and migrating marshes next door. It's an intellectual hot spot – leading DNA researchers at the Cold Spring Harbor Laboratory (CSHL) working adjacent to The Nature Conservancy's marine and environmental scientists.

Yet even scientists need mundane materials such as aluminum pipe, and the pipe Dr. Nicole Maher wound up using for her climate change field experiments connect jumping genes to migrating marshes in an unusual way.

Dr. Maher, Senior Coastal Scientist at the Conservancy, needed 3” aluminum irrigation pipe to insert into salt marshes around Long Island as part of her monitoring effort to determine how well salt marshes are accumulating sediment and keeping up with sea level rise.

Working next to CSHL's Uplands Farm Agriculture Center, Dr. Maher's colleague Adam Starke happened to notice a trailer piled high with a dozen lengthy pipes just the right size. Upon investigation, Dr. Maher learned

Watching the Waters Rise in Two States

© Marian Lindberg/TNC



Sheryl Gold sees the future – and wishes more people did.

According to experts in decision science, humans tend to underestimate future risks and therefore undervalue the benefits of taking steps to reduce future risks. Accordingly, people are not naturally inclined to change their

behavior now in order to reduce the likelihood of future droughts and other climate change impacts.

That's not true for Sheryl. She spends a lot of time thinking about rising seas and what they will mean for the two places she calls home: Miami Beach and Long Island. It concerns her that more citizens and elected officials are not planning for a future with increasing stretches of land under water.

“The amount of new development in Miami Beach is shocking,” says Sheryl. “Buildings are going up in places that will experience greater flooding in the coming years.”

Miami Beach is a barrier island with porous limestone underneath, which soaks up water. Flooding already occurs near Sheryl's neighborhood seasonally and during high tides. Seas around Miami have risen more than the global average of 8 inches since 1900, and the rate is expected to accelerate because water expands as it warms.

Seas around Long Island have also risen more than the global average. The land mass of the northeastern United States has been sinking due to movement of the earth's shell, in addition to climate-driven changes.

Through her support of the Long Island Chapter of The Nature Conservancy, Ms. Gold learned about an interactive tool that models how the coastline will change in 2020, 2050 and 2080 based on sea level rise and the surge from different categories of storms. She was so impressed she made a donation to the Florida Chapter to support a similar project – a pilot study to develop a spatial database to help identify good locations for coastal restoration that will benefit human and natural communities.

“If people can see what is projected to happen and how it will directly impact them and their community, they will be more likely to advocate for better planning,” Sheryl explained.

For Sheryl, thinking about the future has also meant planning her estate. She recently worked with staff at The Nature Conservancy to make a bequest to be divided between the Long Island and Florida Chapters.

“Given the immediacy of our work, outright gifts are essential, but deferred gifts, like bequests and gift annuities, underwrite the long-term health of the organization,” explains Long Island Director of Philanthropy Lucy Cutler.

“Sheryl is an amazing volunteer and we are extremely grateful for her confidence in and support of our work,” says Julie Rosenfeld of the Conservancy's Florida Chapter. “She is knowledgeable and believes in action, not just talk.”

More information about joining The Nature Conservancy's Legacy Club is available at nature.org/bequest, by calling 631-329-7689 ext. 14, or by emailing Lucy Cutler at lcutler@tnc.org.

\$16.5 Million for Coastal “Undevelopment” on Long Island

One way communities are adapting to rising seas is by removing structures prone to flooding after purchasing the homes from willing sellers. This has the added benefit of creating more vacant waterfront land for the public to enjoy. In September, Senator Charles Schumer announced that \$16.5 million from Congress's Sandy relief appropriation has been awarded to two Long Island communities for this purpose. Sixty parcels in Mastic Beach in the Town of Brookhaven on Great South Bay and sixteen parcels at Lazy Point in the Town of East Hampton on Gardiners Bay will be acquired and restored to natural floodplain. These two communities are especially vulnerable to flooding because of their low elevation. The Nature Conservancy brought this program to the attention of Suffolk County and East Hampton Town and assisted with both grant applications.

A Conversation with Nate Woiwode

Ask Nate Woiwode how much sea level rise has increased around Long Island, and he answers quickly: one foot since 1900, according to the National Climate Assessment released in May. Nate, a native of the Great Lakes state of Michigan, has been the Conservancy's point person on Long Island dealing with the impacts of climate change on our coasts. We spoke to him about the legacy of Superstorm Sandy.

Sandy changed many lives. Two years later, how does Sandy continue to affect your work?

NW: Pre-Sandy, my work focused on educating citizens and elected officials about the importance of healthy coastal habitats. After Sandy, "resilience" – the ability of something to bounce back after a major disturbance – became a buzzword, and stories about the role that dunes and wetlands played in making communities more resilient were everywhere you looked. That shift in public perception, combined with the way that recovery funding is being applied, has set the stage for a significant investment in protecting and restoring the vital natural assets that make Long Island's coastal communities such incredible places.

Has New York responded to Sandy in ways that are different from other hurricane – affected places?

NW: In New York, officials have begun to embrace the idea that nature has a starring role in making our coastal communities healthier, safer, and more resilient. To move from words to actions will require



New York to address the underlying problems threatening the health of many coastal communities – excess nitrogen, and accelerating rates of sea level rise. We are now seeing Sandy recovery funds being directed toward dealing with these problems through such measures as voluntary buy-outs of storm-damaged and vulnerable homes, wetlands restoration, and upgrades to sewage treatment plants. The Nature Conservancy has played a significant role in making this happen.

Describe an average day.

NW: I work with officials and agency staff to identify ways government can better protect, restore, and invest in the health of coastal systems. On Long Island, we are at the forefront of demonstrating the Conservancy's global Risk Reduction and Resilience strategy – how healthy natural systems can help communities recover from extreme weather events. I work with colleagues from around the globe – benefitting from their expertise and sharing the lessons we're learning on Long Island.

What do you most hope to accomplish in the coming year?

NW: In September Governor Cuomo signed the Community Risk and Resiliency Act – legislation spearheaded by the Conservancy – which will require New York to begin accounting for future sea levels in many of its permitting and infrastructure investment decisions. That law will give us a great opportunity to work with state and local governments to plan for and adapt to the impacts of sea level rise and lay out a road map for coastal communities of the future. At the same time, the Army Corps is undertaking a project that could reshape the nature of many of our south shore communities. I'll be working to ensure that this and other investments in storm recovery protect and restore coastal habitats for the benefit of both people and nature. We look to a future where communities are less vulnerable, enjoy clean water, and benefit from a vibrant coastal economy.

Why did you choose environmental conservation as a profession?

NW: As the child of two environmental professionals, I often tell people that I was born into it, but the truth is I've always been fascinated and inspired by the challenge of making human communities more compatible and integrated with their natural surroundings. All of us rely on things the natural world provides each and every day. That is what makes the challenges and opportunities of my work so exciting. Sandy has pushed us to recognize additional ways in which we rely on a healthy environment. Now we have new impetus for making meaningful changes to protect that environment.

Restoring A Lake In Nassau County, Fish By Fish



© Marian Lindberg/TNC

The existing fish ladder connecting Long Island Sound to Beaver Lake is too short to be useful.

Can a metal trough bring more birds to a lake? That's one of the goals of a fish passage project at Beaver Lake on the north shore of Nassau County in the Village of Mill Neck, Town of Oyster Bay.

"In the 1960s, we used to catch shad here by the bucket," recalls Rob Deans, head of the North Shore Wildlife Sanctuary, which owns most of Beaver Lake and the adjacent Shu Swamp Preserve. "There were eels, too. I'd bring them home to my father. He liked to eat them."

Since then, the number of migratory fish (especially alewife) has been in serious decline, not only at Beaver Lake, but throughout their range in the northeast. These fish must reach freshwater spawning grounds to reproduce. In the 1980s, a local resident installed a fish ladder at Beaver Lake, but it only works when the tide is extremely high, according to Sally Harold of The Nature Conservancy's Connecticut Chapter.

"Most of the time, the fish can't use the existing ladder," she explained to a group of interested people who came to the site for a kick-off meeting. Harold, who has worked on numerous fish passage projects in Connecticut, is leading the effort to install a longer steep pass fish ladder, a specially designed metal trough that will extend under the bridge on Cleft Road, which separates the tidal waters

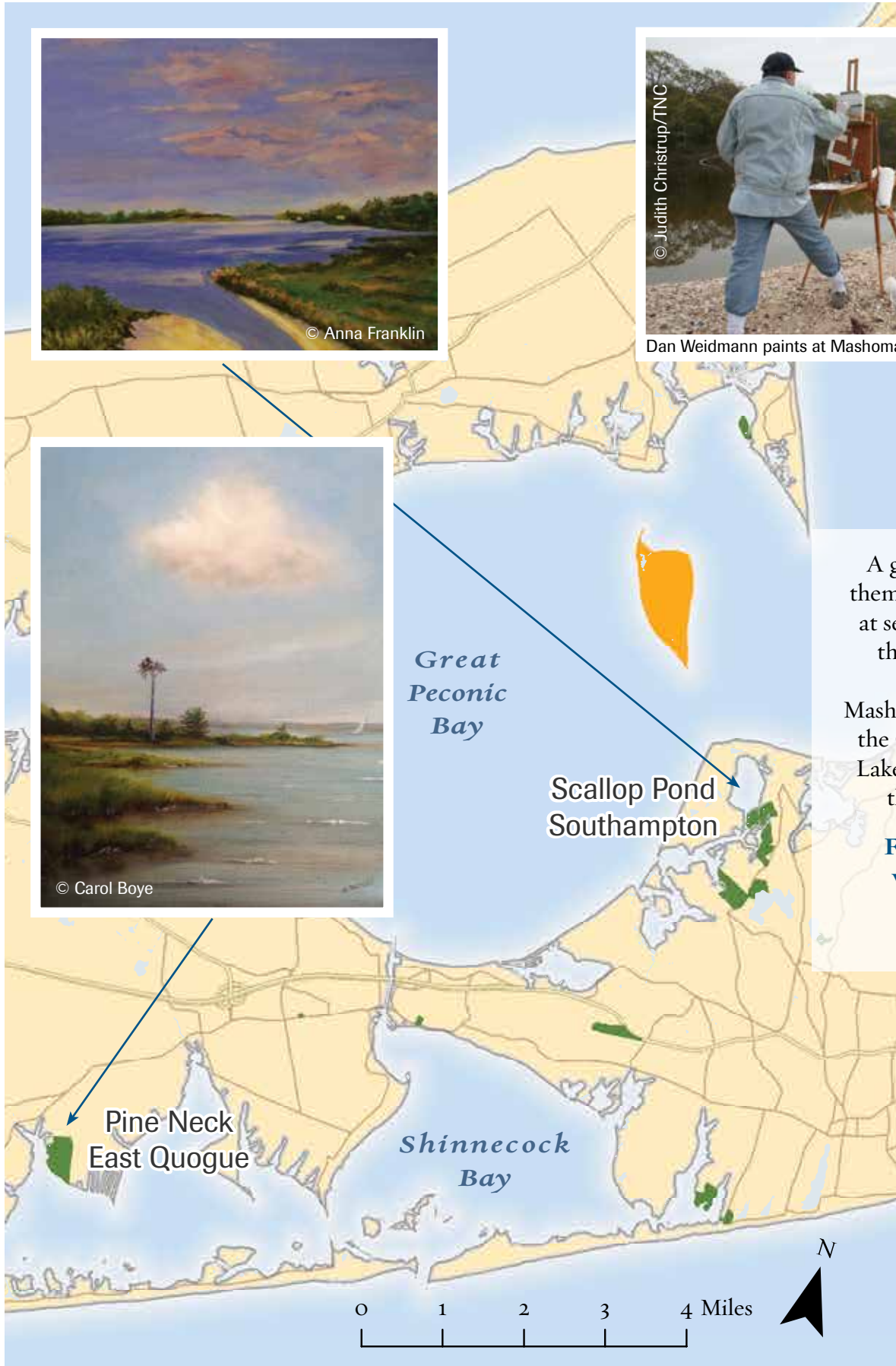
of Long Island Sound from the lake. The new ladder will be designed to slow the water's velocity, allowing fish to pass between the salt water and fresh water.

Harold says greater fish passage will enhance the wildlife value of the entire lake system, which was connected to Long Island Sound for centuries before Cleft Road was built.

"We'll be restoring a missing link in the stream," she explained. The result will be more birds, including osprey and egret, as well as more fish – perhaps even eels. There may also be an impact on the excess phosphorous in the lake, which caused New York State to declare Beaver Lake an "impaired" water body in 2012. Some recent studies have shown that alewives can help remove phosphorous from ponds behind dams.

Preliminary design plans for the project were completed over the summer. Harold hopes that the ladder can be installed in 2015 after all necessary funding and permits have been secured. Across the Sound in Connecticut, the Conservancy is working to improve fish passage on the Falls River in Essex and Aspetuck River in Westport. All three projects are being funded in part by the National Fish and Wildlife Foundation's Long Island Sound Futures Fund.

“PLEIN” AS DAY – ARTIST



A group of Long Island artists volunteer themselves the Wednesday Group at several Nature Conservancy preserves this year: Pine Neck in East Quogue, Scallop Pond in Southampton, Mashomack Preserve on Shelter Island, the Center for Conservation and Education at Lake in East Hampton. Here are some of their works and painting locations.

For more information on how to visit these and other preserves, see nature.org/longisland or call 631-329-7689.



ARTISTS PAINT OUR PRESERVES



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Deborah Palmer at her easel.

