Sound Bytes

NEWS FROM THE LONG ISLAND SOUND STUDY

Winter 2018

LISS NEWS

Futures Fund Reaches $17 Million Mark, 380 Projects

Top photo: Futures Fund grant recipients celebrate with state and NFWF officials and US Rep Lee Zeldin (center) at the Dec. 4 New York ceremony at Flax Pond. Bottom photo: Audubon Connecticut celebrates its award with state and federal officials and CT DEEP Commissioner Rob Klee (left, first row) and acting EPA New England Regional Administrator Deb Szaro (second from right, front row) at the Nov. 16 Connecticut ceremony at Stratford Point.

In This Issue

Investments to improve the ecological health of Long Island Sound through the Long Island Sound Futures Fund have reached $17 million, following the release of the 2017 awards, announced in ceremonies in Connecticut and New York in November and December. Since 2005, community-based projects completed through the Futures Fund have resulted in opening 157 river miles for fish passage, restoring 1,090 acres of critical fish and wildlife habitat and open space, and treating 202 million gallons of pollution.

The latest awards, totaling 31, include funding for wastewater harvesting system for irrigation use in Huntington, Long Island; restoring 33 acres of coastal forest in Westport, CT; and enlisting Boy Scout troops in eastern Connecticut to install rain gardens to help control polluted runoff. Also, for the first time the Futures Fund is supporting projects in the "upper watershed" states of Long

Island Sound, including a proposal by the town of Amherst, Massachusetts to install a monitoring device to help its Public Works Department reduce nitrogen discharges into the Connecticut River from its wastewater treatment plant.

The Futures Fund is administered by the National Fish and Wildlife Foundation, and is funded primarily through the EPA. Read project descriptions for all the projects here.

New Regional Administrator Attends Futures Fund Event

New York environmental groups celebrate their Futues Fund grants with EPA Region 2 Administrator Pete Lopez (first row, second from right).

Pete Lopez, EPA's new Region 2 Administrator, was a special guest at the New York announcement of the Long Island Sound Futures Fund awards in December. It was Lopez's first Long Island Sound event.

As the Region 2 Administrator, Lopez oversees environmental protection efforts in New York, New Jersey, Puerto Rico, and the U.S. Virgin Islands. He previously served as a member of the New York State Assembly from 2007-2017 representing a seven-county region, including Mid-Hudson, Northern Catskills, Southern Tier, and Capital District. As an assemblyman he was a member on the New York Assembly Committee on Environmental Conservation and the Task Force on Food, Farm and Nutrition Policy where he worked to provide proper oversight of New York's health and environment.

The New York Futures Fund event was held Dec. 4 at the Childs Mansion and Flax Pond Marine Laboratory.

Futures Fund/NYSDEC Support Fishway Project for Nissequogue River

The fishway will be built at the Phillips Mill Pond Dam on the Nissequogue River. Photo credit: Vicky O'Neill/NYSDEC.

The Futures Fund, along with the New York State Department of Environmental Conservation, is helping to pay for the design to build a fishway at the Phillips Mill Pond dam on the Nissequoque River. The $100,000 grant was announced at Childs Mansion and Flax Pond Marine Laboratory in December at the New York ceremony announcing 2017 Futures Fund grants. The design is the first step toward building a structure over the dam that will allow alewives to travel to inland spawning grounds for the first time in three centuries. Each spring alewives, a type of herring, travel from saltwater to freshwater in the northeast, including Long Island Sound and its tributaries, to spawn before returning to the ocean.

The project is being managed by Save the Sound/Connecticut Fund for the Environment. Vicky O'Neill, the LISS Habitat Restoration Coordinator, was quoted in an article about the project in Newsday. Read the article here.

Bioextraction Research in Long Island Sound Featured in Science Journal

Students from Rocking the Boat help hang lines during the raft installation of the bioextraction project at the mouth of the Bronx River. Photo credit: Mark Dixon/ NOAA Milford lab.

Upgrading wastewater treatment plants have resulted in large reductions of nitrogen pollution into Long Island Sound. But the sources where nitrogen discharges into the Sound are many, and other methods to reduce nitrogen will be needed to further improve water quality. Two recent research articles published in the same science journal point to nutrient bioextraction, a technology that has received support from the Long Island Sound Study, as potentially one of the new tools that can be used to complement existing efforts.

Nutrient bioextraction (also called bioharvesting) is the practice of farming and harvesting shellfish and seaweed to remove nitrogen and other nutrients from water bodies. In “Role of Shellfish Aquaculture in the Reduction of Eutrophication in an Urban Estuary,” published in the Jan 2 print issue of **Environmental Science and Technology**, the authors discuss using ecosystem models and economic valuation assessment to estimate the amount of nitrogen that could be removed from the Sound by current and expanded production and the amount it would have cost if alternative methods such as treatment plants were used to remove them. According to the study, the "ecosystem services” value ranged from $8.5 million for current production of oysters in the Sound up to $470 million per year for maximum expanded production. The project was funded under the Environmental Protection Agency’s Research on Ecosystem Services Program. In “Cultivation of the Ribbed Mussel (*Geukensia demissa*) for Nutrient Bioextraction in an Urban Estuary,” published in the journal on Nov. 21, the authors from the NOAA Milford Lab describe their research to grow ribbed mussels hanging from a raft at the mouth of the Bronx River. Based on their filtration experiments, the NOAA team estimated that if the raft supported a fully stocked supply of mussels it could remove up to 137 pounds of nitrogen in an annual harvest. LISS and the New York State Bronx River Watershed Initiative helped to provide financial support for this project.

Suzanne Bricker of the NOAA National Centers for Coastal Ocean Science was the principal investigator and author of the article for the ecosystem modeling research. An abstract on the ACS Publications website is linked here. Eve Galimany and Julie Rose were lead investigators for the Bronx River mussels project. The abstract is linked here. The Bronx River project also was cited in an article that appeared in the Economist Magazine.

Update on Long Island Sound Nitrogen Reduction Strategy

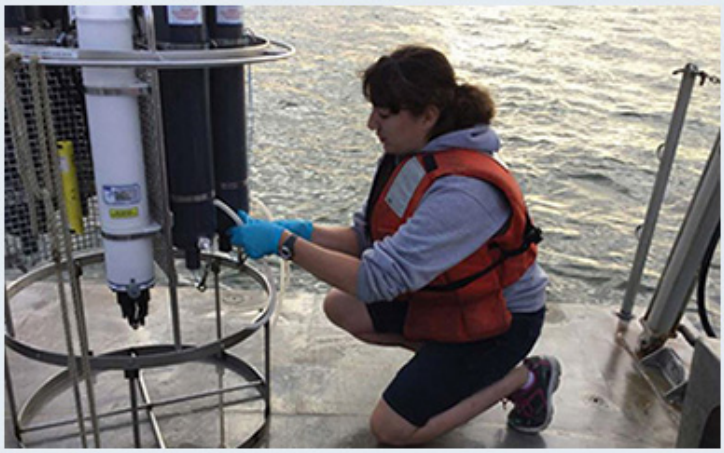
In a webinar on Nov. 8, EPA and its contractor, Tetra Tech, provided an update on progress supporting the Nitrogen Reduction Strategy. This presentation briefly summarized the nitrogen strategy, outlined technical process and products of contract support work to date, and highlighted next steps.

The webinar presentation as well as responses to questions asked during the presentation are available on the Long Island Sound Study website.

EPA is implementing a strategy to aggressively continue progress on nitrogen reductions, in parallel with the States’ continued implementation of the 2000 Total Maximum Daily Load (TMDL), and achieve water quality standards throughout Long Island Sound and its embayments and near shore coastal waters. The strategy recognizes that more work must be done to reduce nitrogen levels, further improve dissolved oxygen (DO) conditions, and address other nutrient-related impacts in Long Island Sound. The nitrogen reduction strategy complements the 2000 TMDL in

important ways. Foremost, while the 2000 TMDL is premised on achieving water quality standards for DO in the open waters of LIS, the EPA strategy expands the focus to include other nutrient-related adverse impacts to water quality, such as loss of eelgrass, that affect many of LIS's embayments and near shore coastal waters.

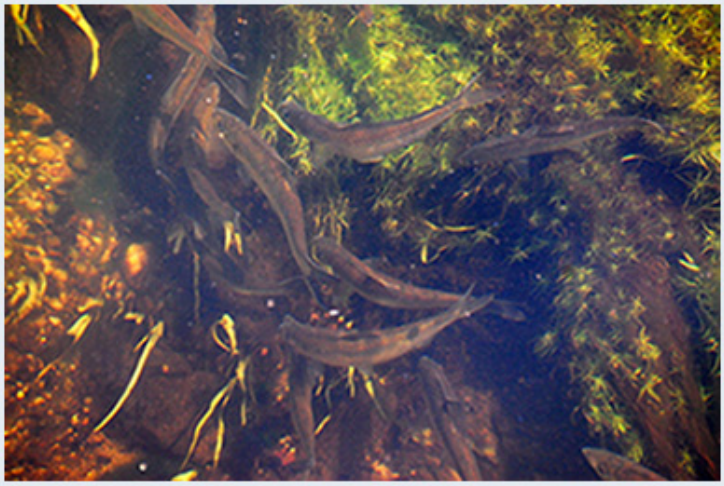
CT Sea Grant/LISS Fund Research on Movement of Nutrients in the Sound



Allie Staniec, a doctoral marine student, empties water from the Niskin bottles in preparation for the next sample collection. Photo credit: Judy Benson.

In Long Island Sound, the quality of its waters and health of its biological communities are strongly influenced by the concentration and movement of nutrients such as nitrogen and phosphorus. University of Connecticut scientists Penny Vlahos and Mike Whitney are measuring these nutrients as well as carbon as these substances flow in and out of Long Island Sound from rivers and the ocean. The latest issue of Connecticut Sea Grant's **Wrack Lines** includes a profile of their work where it started in eastern Long Island Sound. This first phase of their research was funded through Connecticut Sea Grant. The project will be continuing in the central and western Sound with funding support from the Long Island Sound Study research grant program. Read the article here.

Alewife Monitoring Training Set for Manhasset, Cold Spring Harbor



Adult alewives returning to spawn in a Long Island stream. Photo credit: Byron Young.

Long Island residents interested in volunteering to monitor for alewifes in Long Island streams and rivers this spring can learn how at workshops at the Cold Spring Harbor Whaling Museum on Feb, 26, from 4:30-5:30pm and the Manhasset Library, March 1, from 7-8 pm. Please RSVP to the Long Island Sound Study Habitat Restoration & Stewardship Coordinator, Vicky O'Neill, at victoria.oneill@dec.ny.gov.

Alewifes are a species of river herring native to Long Island. Like salmon, they split their life cycle between salt and freshwater. Most Long Island tributaries once supported spring runs of returning alewife. Unfortunately, alewife runs have been decimated by dams, habitat loss and declining water quality. While remnant populations exist in a few rivers, little is known about their overall status across Long Island. Documenting existing spawning runs through monitoring is an important step in the restoration effort.

Researchers Assess Quality of the Sound's Coastal Habitats

In 2015, a project team of coastal ecology and marine biology experts conducted, with the support of the Long Island Sound Study, the first comprehensive look at coastal habitat health for the Long Island Sound Estuary. In January, their work was published in an article that appeared in **The Journal of Coastal Management**.

Lynde Point with its salt marsh covered in snow. Photo credit: Judy Preston.

The team developed and applied a framework for a landscape scale assessment, which involves looking at the size as well as quality of its most valuable ecological habitats, including tidal wetlands, forests, embayments (bays, coves, and harbors), and river migratory corridors. Overall the assessment of the Sound's health was fair. But coastal forests, eelgrass meadows, and tidal wetlands were rated poor. Coastal forests, for example, were rated poor because there are only a few large contiguous forests standing, and many forests that do remain are fragmented by development such as roads.

The research was conducted on the Connecticut side of Long Island Sound, but resource managers are considering expanding the effort to the New York side as well.

The core team consisted of Georgia Basso, a Fish and Wildlife Service Biologist who was a liaison to the Long Island Sound Study in 2015; Juliana Barrett, a coastal habitat biologist at Connecticut Sea Grant, Kevin O'Brien, an environmental analyst at Connecticut Department of Energy and Environmental Protection, and Jamie Vaudrey, a marine biologist at University of Connecticut.

The full article appears on the **Taylor and Francis Online** website here.

AROUND THE WEB

Peg Van Patten Honored with National Sea Grant Award...and Other News

Peg Van Patten

Peg Van Patten, who recently retired as the Connecticut Sea Grant communications director, received the first Communications Service Award at the 2017 national Sea Grant Extension Assembly and Communicator Conference in Oregon, in October. Peg retired from Sea Grant last year after serving with the program for 30 years. A scientist as well as a communicator, Van Patten published several Long Island Sound field guides, including *Seaweeds of Long Island Sound* which included a forward by University of Connecticut biologist Charlie Yarish whose seaweed and aquaculture research lab is internationally known. She also co-authored *Sound Facts*, a popular book on the Sound with illustrations from *New London Day* cartoonist Milton Moore. An article about Peg's career, written by Judy Benson, her successor as communications director for Connecticut Sea Grant, appears in the latest edition of Sea Grant's **Wrack Lines**. From here.

In other stories...

- Untreated sewage and other toxic discharges entering New York City waterways through illegal connections to the City's storm and sewer pipe outfalls is a serious problem. **City Limits** magazine examines the issue, including sewage discharges entering the Bronx and Hutchinson rivers, tributaries to the Long Island Sound. From here.
- The Town of West Haven is one of the few coastal communities in Connecticut that is effectively preparing for the impact of sea level rise, according to a report in the **CT Mirror**. From here.
- WSHU reporter Davis Dunavin recently aired a story about how Helen Hays of the American Museum of Natural History began her quest to protect the tern populations of Great Gull Island, which contains some of the largest concentrations of common terns and roseate terns in the world. From here.

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