Sound Bytes

NEWS FROM THE LONG ISLAND SOUND STUDY

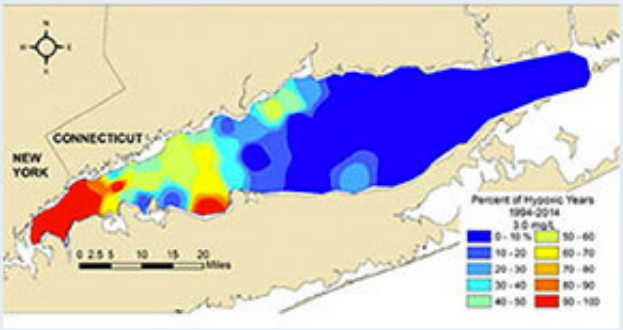
Winter 2016

LISS NEWS

In this Issue

In this issue, we take a look at a new Nitrogen Strategy drafted for Long Island Sound, year one of implementing Long Island Sound's new Comprehensive Conservation and Management Plan (the CCMP), introduce you to LISS's new Science Coordinator and climate change website, and more.

EPA Proposes New Nitrogen Strategy



A map showing the frequency of hypoxia. It is more frequent in the areas shaded red and orange. Map created by CTDEEP.

On Feb. 26 EPA will host a webinar to discuss a new strategy to reduce nitrogen in Long Island Sound. The strategy proposed by EPA is intended to complement a Total Maximum Daily Load (TMDL), an agreement reached by the states of New York and Connecticut to reduce nitrogen by nearly 60 percent from early 1990 levels. While the 2000 TMDL is premised on achieving water quality standards for dissolved oxygen (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, which affects many of the Sound's embayments and near shore coastal waters.

Nitrogen is a nutrient that stimulates the growth of algae in coastal waters. An overabundance of algae can lead to low dissolved oxygenated waters, or hypoxia, a condition that is harmful to aquatic life. The nitrogen can enter the Sound through a variety of sources, including from treated sewage discharged from wastewater treatment plants and septic systems, fertilizer runoff, and atmospheric deposits from industrial waste. As a result of the TMDL, actions by New York and Connecticut to upgrade wastewater treatment plans have reduced nitrogen pollution by more than 40 million pounds of nitrogen annually.

The webinar for the new strategy will be held from noon to 1 p.m. Click this link to register. The strategy is

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available at LISS's media center.

LISS Partners Begin Effort to Implement New Management Plan

The Management Committee at its October meeting in Port Jefferson. The new CCMP was released during the meeting.

2016 is the first year of Long Island Sound's new Comprehensive Conservation and Management Plan, a 20-year plan to restore and protect the Sound. CCMPs are required by all programs that participate in EPA's National Estuary Program. LISS's CCMP, which was completed in October 2015, includes 20 ecosystem targets to improve water quality, restore and protect habitats, and engage citizens to take an active role in protecting the Sound. At the Jan. 21 LISS Management Committee, committee members agreed on new work groups and modifying responsibilities of existing work groups to help coordinate the bi-state efforts to meet these targets. Visit the CCMP web page for more information about the plan.

Meet LISS's New Science Coordinator

James Ammerman

Long Island Sound Study's new position of Science Coordinator is being filled by a scientist with years of experience in both research and environmental management, and with a local connection to Long Island. James (Jim) Ammerman, an aquatic microbial ecologist and biogeochemist, started work Dec. 7 at the EPA Long Island Sound Office in Stamford. He was hired for the position by the New England Interstate Water Pollution Control Commission, a LISS Management Committee member.

Ammerman, a resident of Centerport, Long Island, received his PhD from Scripps Institution of Oceanography. He has been a member of the faculty at Texas A&M University and the research faculty at Lamont-Doherty Earth Observatory of Columbia University and Rutgers University. He also served as an Associate Program Manager in the Biological Oceanography Program at the National Science Foundation and as Science Director of NOAA's Undersea Research Center at Rutgers University, and served as the Director of New York Sea Grant at Stony Brook University where he remains an adjunct faculty member there. He is a Fellow of the American Association for the Advancement of Science and currently serves on a national committee of the EPA Science Advisory Board which is addressing water quality problems in Lake Erie.

Earlier this month, Sound Bytes asked Ammerman about what he sees as the challenges in his new position. The Q&A is in LISS's media center.

LISS Launches New Climate Change Website

The Long Island Sound Study has created a new website to help Long Island Sound residents, educators, and municipal officials to learn more about climate change issues that can impact Long Island Sound.

Climate Change in Long Island Sound: A Long Island Sound Resource Guide, at LISSclimatechange.net, is divided

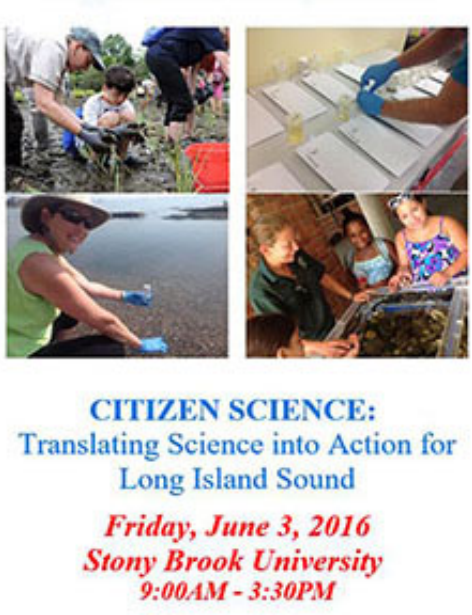
into four sections:

• What You Should Know - a primer on key concepts about climate change as well as access to web resources, including indicators of climate change in Long Island Sound.
• Town and City Resources - a portal providing links to what communities are doing to adapt to climate change and reduce greenhouse emissions, including cases studies from five Long Island Sound communities.
• Science and Monitoring - examples of research and monitoring being conducted in Long Island Sound.
• Educators' Toolbox - Resources for teaching about Earth's climate system and the changing climate, including "Science Spotlights" of local scientists conducting climate change research, and highlights of a teachers' workshop on climate change (note: we hope to work with scientists as well as other resource managers to include more "spotlights" and other features in the future).

The website's homepage also includes a "newsroom" with two climate change newsfeeds, and a list of "hot" links for more climate change information.

The project was initiated by Long Island Sound Study's Sentinel Monitoring for Climate Change program, and includes representatives from the Connecticut and New York Sea Grant Programs, the Connecticut Department of Energy and Environmental Protection, the New York State Department of Environmental Conservation, NOAA's Northeast Fisheries Division, Milford Laboratory, and the New England Interstate Water Pollution Control Commission.

Save the Date for Historic 25th Long Island Sound Citizen Summit



This year marks the 25th anniversary of the Long Island Sound Citizens Summit with a topic that's very appropriate: CITIZEN SCIENCE: Translating Science into Action for Long Island Sound. Save the Date for June 3 at Stony Brook University. Information on the session topics, the panelists, and how to register will be coming soon, and will be available at the LISS events and meetings calendar.

This historic event will focus on the citizens who are taking action to protect the Sound. It will celebrate the efforts of citizens who are making a difference in protecting the Sound, roll out new innovative tools for understanding the Sound's health, and dedicate an entire afternoon of workshops on citizen science monitoring, data analysis, and communicating science with clarity and impact.

The 25th anniversary Citizens Summit is being sponsored by Save the Sound, a program of the Connecticut Fund for the Environment, the Long Island Sound study, the Stony Brook University School of Marine and Atmospheric Sciences, the Alan Alda Center for Communicating Science at Stony Brook University, and the New England Interstate Water Pollution Control Commission.

The first Citizens Summit began as a conference held in Stamford in January 1991 to discuss a report by the National Audubon Society summarizing the 15 ”Listen to the Sound" citizen hearings held throughout Long Island

Sound in 1990 to address concern about pollution. The report, a call for action for sustainable development for the Sound, was called **Listen to the Sound—A Citizens Agenda: A Vision for Long Island Sound**, It helped contribute to the development of LISS's first Comprehensive Conservation and Management Plan for Long Island Sound in 1994.

Stony Brook Scientists' Hypoxia Research Published in Science Journal

Kamazima Lwiza

Stony Brook University research scientists Kamazima Lwiza and Gordon Taylor, along with Ling Liu, a graduate student at Stony Brook, recently published an article called the *Importance of the bacterial dynamics in model simulatons of seasonal hypoxia* in the scientific jorunal *Continental Shelf Research*. The article details their findings of the importance of including bacterial dynamics in providing accurate predictions of the onset of late summer hypoxia and subsequent recovery. Their research was partially funded by a Long Island Sound Study research grant. An abstract of the article appears on the Science Direct website.

AROUND THE SOUND

$1.3M in Futures Fund Projects are Under Way for 2016

Jennifer Mattei of Sacred Heart University pointing to a concrete reef ball that is being used for the Stratford Point Living Shoreline project.

Local government and community groups will be spending more than $1.3 million this year in grants provided for though the Long Island Sound Futures Fund.

The 22 grants were announcded in November at Stratford Point before top federal and state environmental officials, including US Senators Richard Blumenthal and Chris Murphy, US Reps Rosa DeLaura and Jim Himes, and EPA Region 1 Administrator Curt Spalding.

The projects, which are funded through the Long Island Sound Futures Fund, will open up seven miles of river for passage of native fish and restore 180 acres of coastal habitat, including lakes, ponds, and grasslands.

Following the press event, several newspapers highlighted local projects being funded in the area, including:

• *Stratford Point Living Shoreline: Restoring Coastal Habitats to Maintain Resiliency and Function in Stamford*, CT (See Stratford Star)

• *Restoring Fish Passage at Beaver Lake and Beaver Brook in Mill Neck, NY* (See Public News Service)

• Restoring Fish Passage on the Noroton River (see Stamford Daily Voice)

The Long Island Sound Study initiated the Long Island Sound Futures Fund in 2005 through EPA's Long Island Sound Office and NFWF. To date, the program has invested $14 million in 324 projects in communities surrounding

the sound. With grantee match of $28 million, the Long Island Sound Futures Fund has generated a total of $42 million for locally based conservation in both states. The projects have opened up 157 river miles for fish passage, restored 1,024 acres of critical fish and wildlife habitat and open space; treated 100 million gallons of pollution from ground and surface sources, and educated and engaged 1.8 million people from communities surrounding the Sound.

Local Shellfish Restoration Project Highlighted in EPA Study

"A successful shellfish restoration effort in New York's Hempstead Harbor is paying off—and that's just the tip of the potential iceberg, according to a new U.S. Environmental Protection Agency (EPA) study."

That opening sentence begin an article that appears on page 11 of the January issue of EPA's Nonpoint Source News-Notes, and describes the benefits of more than 30 years of activities to restore Hempstead Harbor waters for shellfishing, which resulted in 2011 with the reopening of 2,500 underwater acres, and the harvesting of about 2,000 bushels of all shellfish species. According to the article, EPA's economic study found modest near-term benefits of about $120,000 a year for the the restoration, but if the restoration proceeds the medium term and then long-term benefit for full recovery with a predicted 97,000 bushels of commercial harbests per year could be as high as $5 million a year.

Long Islanders Can Take Part in Monitoring Alewife River Population

Alewife photo courtesy of NOAA.

Long Island residents interested in citizen science projects can take part in monitoring the river herring's migration up river to spawn. To learn more, attend a workshop sponsored by the New York State Department of Environmental Conservation, Seatuck, and the Long Island Sound Study on either of two dates:

The workshops are on:

• Monday, February 29 from 4:30-5:30pm at the Cold Spring Harbor Whaling Museum, 301 Main Street, Cold Spring Harbor.

• Thursday, March 3 from 5:30-6:30pm at the Town of North Hempstead Town Hall, 220 North Plandome Road, Manhasset.

All are welcome to attend and participate in this citizen science project. No experience is required. Contact Amy Mandelbaum at New York Sea Grant by email at lisstewards@gmail.com or phone at 631-444-0474 to RSVP and for more information.

Hartford Hosts 27th Annual Nonpoint Source Pollution Conference

Attendees and exhibitors can register online or download a registration form. Please register by March 28 to take advantage of reduced pricing. Both full-conference and single day registrations are available.

The 27th Annual Nonpoint Source Pollution Conference for the New England states and New York will be held on April 20-21, 2016 at the Hilton in Hartford, Connecticut.

This year, our conference will feature two plenary and six concurrent sessions focused on doing more with less and tools for more effective NPS management. The technical sessions will highlight cost-efficient stormwater management strategies, cooperative agricultural initiatives, innovative regional collaborations, adaptive planning tools, and a variety of emerging issues. The second day will feature an optional field trip visiting the nearby UConn campus for a BMP walking tour.

Please visit the conference website for more details on the agenda, rates, and accommodations.

AROUND THE WEB

Database Features Long Island Sound Restoration Projects

The Long Island Sound Study website has a new database that highlights the bi-state effort to restore and project the region's natural habitats. Since 1998, this work has resulted in more than 1,750 acres of habitat restored, more than 5,000 acres protected through acquisitions and easements, and more than 350 miles of streams reconnected to the Sound for fish passage by removing dams and building fishways.

Users can search the database for project details or click on the interactive map to search for projects by location. The details include the type of habitat restored or protected, its size, and the partners involved in ensuring the project's completion. Many project web pages include before and after photos.

The database can be accessed through the **Habitats** section of the Long Island Sound Study website or by clicking directly to www.lisshabitatrestoration.com. All New York projects have been entered into the database, while the Connecticut projects should be fully entered within the year.

If you are seeking information for projects that you cannot find in the database, please do not hesitate to contact the Habitat Restoration Coordinators at victoria.oneill@dec.ny.gov or harry.yamalis@ct.gov.

"SLAMM" Site Provides Insight on Potential Climate Changes Impacts to Coast

Long Island Sound Study's website has added new web pages to assist conservation commissions, land trusts,

CLINTON HARBOR AREA MARSHES IN 2010. THE DIFFERENT COLORS DEPICT DIFFERENT LAND COVER TYPES.

academic institutions, NGOs and others interested in understanding how salt marshes in Long Island Sound may to respond to sea level rise.

The Sea Level Affecting Marshes Model, known as SLAMM, was applied to Long Island Sound was developed as a resource to assist land use planners and natural resource managers in making decisions on how to manage the region's changing salt marsh habitats.

The pages provide access to easy-to-use web based map viewers for SLAMM, which was applied to each segment of the Sound's shoreline to predict how each coastal area is expected to respond to sea level rise. The website also includes a fact sheet describing SLAMM, data viewer user manuals, and data summaries by State and for the entire Sound.

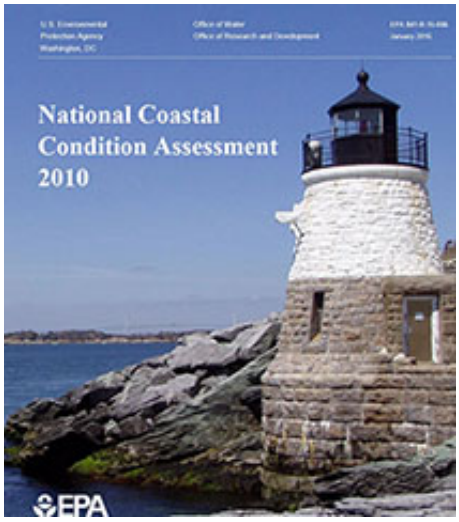
SLAMM has been used by coastal managers since its initial development by EPA in the 1980s. A recent enhancement to the model not only predicts how salt marshes are expected to migrate in response to sea level rise, but the likelihood that a marsh will exist in a location at different time steps. This information will help resource managers most effectively target limited resources to areas with greatest potential for supporting marshes in the future. SLAMM is also unique in that it predicts not only where marshes are expected to occur in the future, but how different habitat types within a marsh are expected to change. For example, even under a moderate sea level rise scenario, the existing high-marsh dominated plant communities at Hammonasset Beach State Park are expected to change to low-marsh dominated plant communities before the end of the century, posing significant marsh habitat and park management issues that will need to be addressed in the near term. Check out how your local marsh may respond to sea level rise at different time steps through the year 2100 and learn more about the Sound's tidal marshes and ecological processes affecting the Sound's marshes in the future by visiting the LIS SLAMM web site at http://longislandsoundstudy.net/slamm/.

Sound Update Newsletter Features Citizen Science Projects

Rocking the Boat students in the South Bronx use scissors and shears to trim the Gracilaria bundles at the two-week mark. After the bundles have been trimmed, they are placed in containers, seen on the left, to be taken back to shore for weighing. Photo by Joaquin Cotten/Rocking the Boat.

From the North Fork of Long Island to the Bronx and back east in Connecticut's eastern shoreline, citizens are involved in science projects to restore and protect Long Island Sound. Check out the most recent issue of *Sound Update* to learn about four of these efforts.

EPA Releases Coastal Water Quality Report; Shows Coastal Waters a Mix of Good and Fair Health



http://www.epa.gov/national-aquatic-resource-surveys/national-coastal-condition-assessment-2010-results

EPA has released the 2010 National Coastal Condition Assessment showing that more than half of the nation's coastal and Great Lakes nearshore waters are rated good for biological and sediment quality, while about one-third are rated good for water quality. In almost all coastal waters, however, contaminants in fish tissue pose a threat to sensitive predator fish, birds, and wildlife. The National Coastal Condition Assessment is part of a series of National Aquatic Resource Surveys (NARS) designed to advance the science of coastal monitoring and answer critical questions about the condition of waters in the United States. The summarized findings are:

• Biological Quality is rated good in 56 percent of coastal and Great Lakes nearshore waters. Healthy communities of bottom-dwelling macroinvertebrates (such as worms and clams), which are indicators of biological quality, are supported in these waters.
• Water Quality is rated fair in 48 percent of coastal and Great Lakes waters and good in 36 percent when measuring phosphorus, nitrogen, water clarity, chlorophyll a, and dissolved oxygen concentrations. The most widespread stressor for water quality is phosphorus.
• Sediment Quality is rated good in 55 percent of coastal and Great Lakes nearshore waters based on low levels of sediment contaminants and sediment toxicity.
• Ecological Fish Tissue Quality is rated good for less than 1% of the nation's waters. This means there is a potential threat to the most sensitive predators (fish, birds, and wildlife) that consume fish in most waters
• Change in conditions were mixed between 2005-2006 and 2010. Water quality remained unchanged, biological quality improved 17 percent, and sediment quality declined by 22 percent.

On February 25, from 1:00 pm to 3:00 pm, EPA will be hosting a webcast presenting results of the NCA report. Register for this Watershed Academy Webcast at EPA's website.

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