SoundMatters

NEWS FROM THE LONG ISLAND SOUND STUDY

Spring 2021

In 2015, while working on revising the Long Island Sound Study Comprehensive Conservation and Management Plan, or CCMP, agency managers realized that actions needed to address climate change, long-term sustainability, and environmental justice cut across individual themes. As a result, the LISS incorporated these three underlying principles across the four CCMP themes of Clean Waters and Healthy Watersheds, Thriving Habitats, and Abundant Wildlife, Sustainable and Resilient Communities, and Sound Science and Inclusive Management. With the LISS budget increasing nearly seven-fold since 2015, the ability to fund projects that put greater emphasis on these principles has also increased. The recently adopted 2021 budget and work plan, featured in the first article of this newsletter, includes examples covering two of these principles. To ensure that the program's work truly integrates these principles, the LISS has formed two new work groups to provide oversight and direction—the Sustainable and Resilient Communities Work Group and the Environmental Justice Work Group. Find out more about these two work groups and the 12 other committees and work groups of the Long Island Sound Study on the Committees page.

Mark A. Tedesco, *Director*
Long Island Sound Office
U.S. Environmental Protection Agency

LISS NEWS

Management Committee Finalizes Work Plan and Budget for FY2021

A degraded salt marsh at Great Meadows Marsh. Credit: Jim Turek, NOAA Restoration Center.

At its April 15 meeting the Long Island Sound Study Management Committee recommended to EPA a final Long Island Sound $31.1 million work plan for the federal fiscal year 2021. The federal funds, authorized by Congress, are for Long Island Sound restoration efforts. In addition to continuing support for ongoing nutrient monitoring and modeling and an expansion of funding to the Long Island Sound Futures Fund, projects and initiatives include:

- Supporting an Environmental Justice Needs Assessment for the Long Island Sound Watershed, and initiating the development of an Environmental Justice grant program.
- Providing technical assistance to municipalities to plan for the effects of sea level rise and storm surge, and increase the resiliency of both natural and human environments.
- Restoring over 39 acres of tidal wetlands in the Great Meadow Marsh in Stratford, CT. The marsh is the largest remaining unditched marsh in Connecticut. Unditched marshes are rare. They have sinuous tidal creeks and more marsh ponds, which adds to greater wildlife diversity, than marshes that had been ditched in a 20th-century attempt, no longer used, to control mosquitos.
- Supporting the acquisition of coastal property in New York for protection and stewardship.
- Assessing the health of Long Island Sound harbors, bays, and coves using the probabilistic sampling methods of the National Coastal Condition Assessment.

- Developing a pilot asset management program in New York for coastal wastewater treatment facilities to provide communities with a tool to assess climate change threats and reduce nutrient and contaminant loads.

The complete 2021 work plan and budget, including a list and descriptions of all projects approved by the Management Committee, will be posted on the LISS website this summer in the media center.

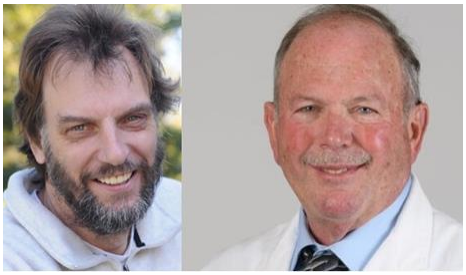
How Much is a Clam Worth to Long Island Sound?

Credit: NOAA Fisheries/Julie Rose

Ecosystem services are defined as the many services derived from natural ecosystems to benefit people. Nourishing food, bathing beaches, and the aesthetic beauty of a seascape are some examples of the ecosystem services the Sound provides directly to us. Ecosystem services can also provide people and communities with indirect benefits by replacing the need for expensive infrastructure. Clams and oysters, for example, take up nutrients such as nitrogen. This filtering of nutrients from the Sound improves water quality, and could help communities by lessening the need for wastewater treatment upgrades or new stormwater best management practices to reduce nitrogen. The NOAA Northeast Fisheries Science Center's Milford Lab and its partners recently conducted research in Greenwich Harbor to assess the value of the nitrogen reduction services of commercial harvesting of shellfish. The cost savings in avoiding infrastructure projects is in the millions of dollars a year. A recent Sound Spotlight article in the LISS media center, with links to an expand-

ed article on NOAA's website and a recently published scientific paper, describes the research.

Two Top LIS Researchers Retire from Science and Technical Advisory Committee



(l-r) Varekamp and Yarish. Credits: Wesleyan University and Peter Morenus, University of Connecticut.

Scientists Charles "Charlie" Yarish and Johan "Joop" Varekamp are well known for their research in Long Island Sound and beyond. They have also made important contributions to the LISS, including helping to reestablish the Long Island Sound Study Science and Technical Advisory Committee in 2002 after an eight-year hiatus. Earlier this year, the two scientists announced their retirements from the STAC, which serves as a forum for researchers, engineers, and agency and NGO managers to provide policy and budget recommendations to the LISS on key scientific issues.

Learn more about their accomplishments for the LISS and for Long Island Sound in a Sound Spotlight article in the media center.

Three LIS Pilot Sites Complete Spring Sugar Kelp Harvests

Early sugar kelp growth on Save the Sound's kelp line at Milton Harbor in Rye, NY. Credit: Save the Sound.

Excess nitrogen is one of the most harmful pollutants in Long Island Sound, leading to algae blooms and other conditions that hurt wildlife and human health. Sugar kelp, a seaweed that grows in the winter and is harvested in the spring, could be an innovative method for communities to remove nitrogen from our waters. This year the New York State Department of Environmental Conservation, with funding from the EPA Long Island Sound Study, conducted a pilot project at three sites to assess the potential for using sugar kelp to naturally remove nitrogen in near-shore waters. Over the winter mooring lines were seeded with sugar kelp at the following locations:

- Outer portion of Milton Harbor, Rye, NY in Westchester County (project managed by Save the Sound)
- The East River at SUNY Maritime College in the Throggs Neck section of the Bronx (project managed by SUNY Maritime)
- Northport Harbor in Suffolk County (project in association with the Village of Northport with sampling assistance from the Cooperative Extension of Suffolk County).

After the growing season ended in late May and early June, tissue samples were taken from the three sites to determine how much nitrogen was removed from the water. The Bronx site was also tested for heavy metals and pesticides because the kelp yield there was large enough to conduct a second phase of the pilot – to test whether the kelp can be used for fertilizer. The fertilizer from the kelp will be applied to a test agricultural site, and Cornell Cooperative Extension of Suffolk County will conduct an analysis of the soils, leaves, and fruit to assess its effectiveness.

SOUND BYTES

Judy Preston, Long Island Sound Study Outreach Coordinator for Connecticut Sea Grant, received an award from the National Garden Club of America on April 30 in recognition of her work to protect Long Island Sound. Citing her "critical public education skills in identifying key elements of the coastal landscape and

Preston, center, holds award at New Haven Harbor, with leaders from the Stonington & Fairfield Garden Clubs.

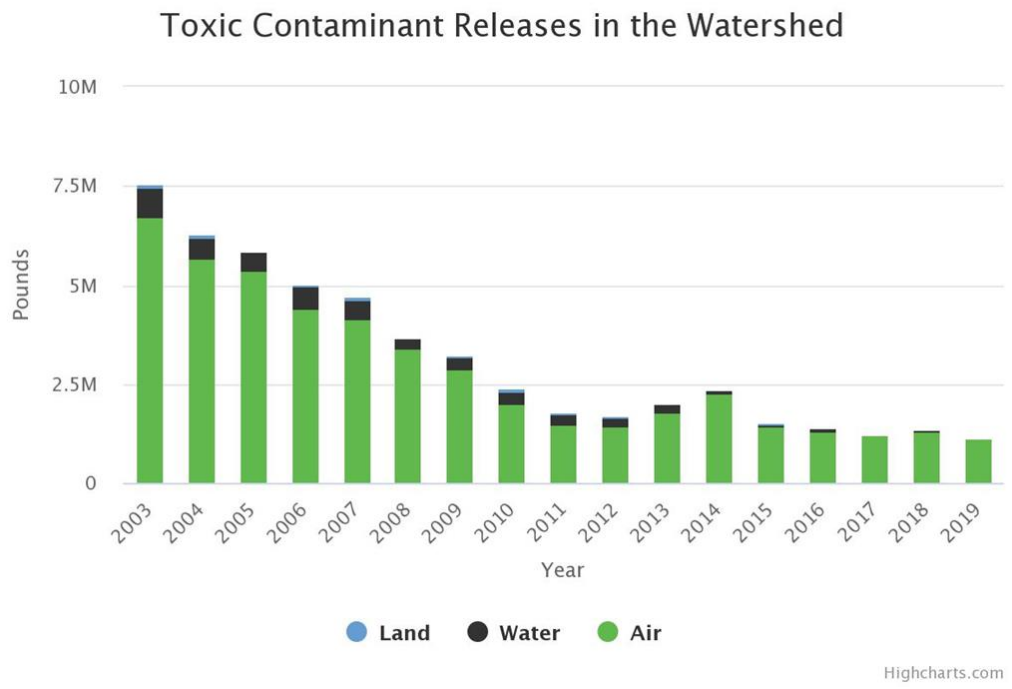
how gardening practices can protect, conserve and enhance water quality," Preston was presented with the Coastal Zone Conservation Commendation. The Fairfield Garden Club and the Stonington Garden Club nominated Preston for the award.

- Long Island is having a Bioblitz from June 26 to July 3 to better understand the ecological community and biodiversity around Long Island. LISS is a participating sponsor. Learn the details in a news release in the media center.
- The Blue Plan is an initiative that involves compiling an inventory of the natural resources and uses of Connecticut's Long Island Sound and establishing a spatial plan to guide future use of the Sound's waters and submerged lands. The Plan, which has received support from the LISS and the Long Island Sound Futures Fund, was approved by the Connecticut State Legislature this spring. Read more about the Blue Plan, including through videos and a Story Map, on the CT DEEP website.
- A research paper titled **Low denitrification rates and variable benthic nutrient fluxes characterize Long Island Sound sediments** was recently published in the scientific journal *Biogeochemistry*. A Long Island Sound Study research grant awarded to Robinson "Wally" Fulweiller of the Boston University Department of Earth and the Environment funded the research. The research investigated the amount of nitrogen entering the Sound from human sources such as treated sewage and fertilizer that can be removed through natural processes in the sediments of the Sound's seafloor. Find an abstract, and link to the Journal article here.
- Warren Pinnacle, a Vermont-based environmental consulting firm, has developed an interactive web-based viewer to illustrate the fate of 20 significant marsh systems under future sea level rise projections in the NY region of the Long Island Sound watershed. The project was funded by LISS in partnership with NEIWPCC and the New York State Department of Environmental Conservations. Two virtual workshops to introduce the viewer were held this spring for Long Island and Westchester residents and officials. As part of this project, marsh conservation plans were developed in with local

stakeholders for Mattituck Creek and Westchester County. Find the viewer here.

FOCUS ON LISS INDICATORS

Industrial Chemical Discharges



Credit: Long Island Sound Study Ecosystem Target and Supporting Indicators Microsite

The Long Island Sound Study Ecosystem Targets and Supporting Indicators Microsite tracks indicators that measure the health of the Sound, and assesses whether the LISS is meeting management targets to help achieve restoration goals. In each issue of Sound Matters we highlight the latest trends in one of the indicators or targets.

Industrical Chemical Discharges: Land, water, and air discharges of toxic contaminants into the Long Island Sound Study continue to steadily decline. The EPA Toxic Release Inventory program recently released its 2019 report of more than 760 chemicals discharged from nearly 22,000 facilities nationwide. The data for the Long Island Sound watershed (including the upper New England states) show an 85 percent decline in contaminant releases from the 2003 baseline reported by EPA for Long Island Sound (from 7.6 million to 1.1 million pounds).
In general, chemicals covered by the TRI Program are those that cause:

- Cancer or other chronic human health effects

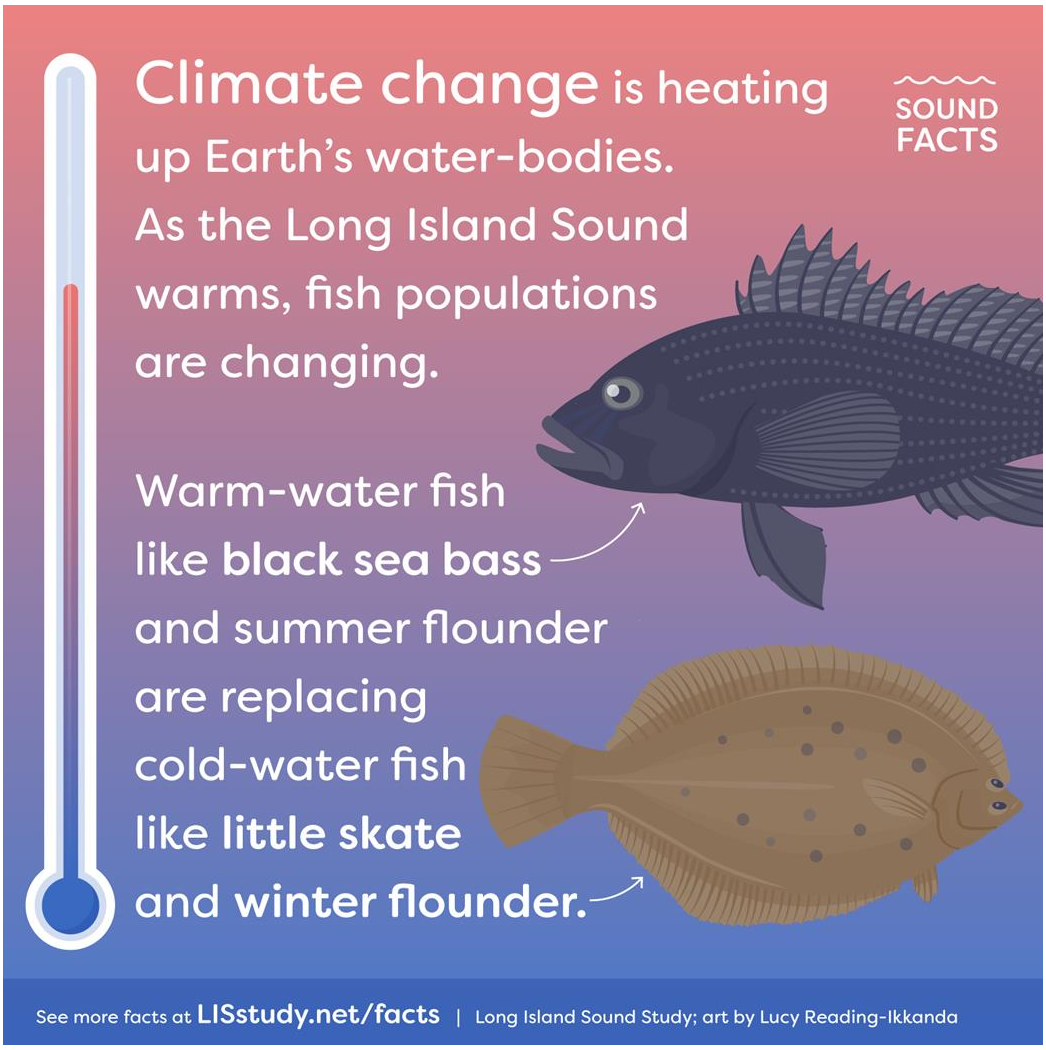
- *Significant adverse acute human health effects*
- *Significant adverse environmental effects*

The EPA's Toxic Release Inventory program is celebrating its 35th anniversary this year. When it started in the 1980s discharges of toxic contaminants into Long Island Sound were more than 16 million pounds a year.

Learn more about this indicator in the Clean Waters and Healthy Watershed section of the LISS Ecosystem Targets and Supporting Indicators Long Island Sound Study microsite.

SOUND FACT

Some Fish Like It Warmer



Credit: Lucy Reading-Ikkanda for the Long Island Sound Study.

For several decades, the Connecticut Department of Energy and Environmental Protection, through its Long Island Sound Trawl Survey, has been tracking the most abundant species of fish in the Sound by its tolerance to cold-water versus warm-water conditions. This month's Sound Fact highlights the relationship between an increase in Long Island Sound water temperature with an increase in fish species that favor warm water. For example, Sea Bass, a warm-water fish, which was rarely seen in the Sound in the 1980s and 1990s, is now one of the most abundant fish for anglers, while the once abundant Winter Flounder has declined significantly. While the types and abundances of fish populating the Sound are changing, overall finfish diversity as well as fish biomass in the Sound remains high.

Find the Sound Fact, with links on fish and climate change in the media center.

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Contact the Editor [editable]

Robert Burg
NEIWPCC Information Officer
Long Island Sound Study Communications Coordinator
info@longislandsoundstudy.net

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