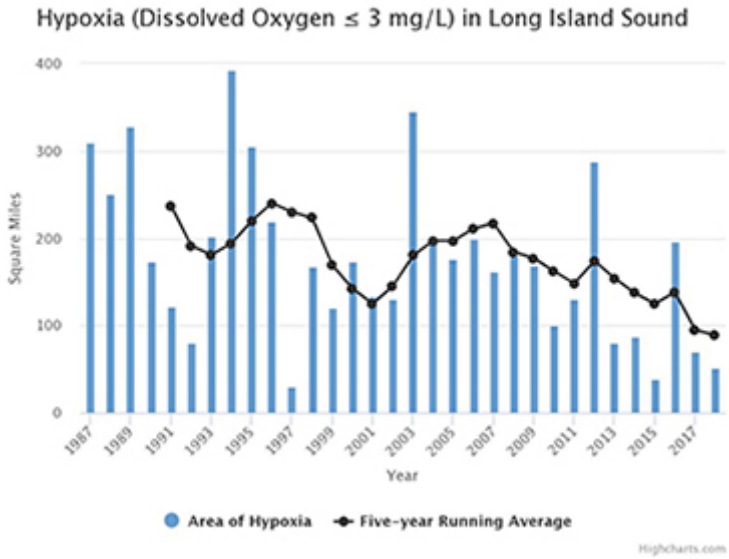
Sound Bytes

NEWS FROM THE LONG ISLAND SOUND STUDY

Fall 2018

LISS NEWS

'Dead Zone' Continues to Decline in Long Island Sound



In This Issue

Water quality in Long Island Sound during the summer of 2018 continued the trend of improving conditions. The 2018 five-year rolling average of the maximum area of hypoxic waters has declined by 63 percent from its peak in 1996. The five-year rolling average is calculated by averaging conditions occurring over the prior five years. The 2018 five-year average of 89 square miles is the lowest since the time series began in the late 1980s. The five-year rolling average from 1992-1996 was 240 square miles.

Hypoxia occurs in coastal waters when the waters lack sufficient oxygen to support marine life. Often called 'dead zones', hypoxic waters are an important water quality indicator. It usually occurs in the summer in bottom waters when the more oxygenated surface waters heat up and become less dense, making it harder for surface waters to mix with the denser, less oxygenated bottom layers.

The five-year rolling averages are based on water samples collected from June to September by the Connecticut Department of Energy and Environmental Protection and the Interstate Environmental Commission. For 2018, the agencies calculated the hypoxic area as 52 square miles, down from 70 square miles in 2017, and the third lowest reported since water quality monitoring began in 1987. In assessing trends, the Long Island Sound Study (LISS) uses the five-year rolling average because conditions in any given year could be impacted by variable factors, such as extreme changes in heat or precipitation, which would be hard to compare to the normal conditions over a long period of time. It is interesting to note, however, that the hypoxic area declined in 2018 even though temperatures were above average.

A major goal of the Long Island Sound Study and its partners since the 1980s has been to reduce the area and severity of hypoxia in the bottom waters of Long Island Sound. EPA, and the states of Connecticut and New York,

working with municipalities, have developed a program to reduce nitrogen, a nutrient that in excess leads to the conditions that result in hypoxia. Information about how the program is meeting its goal is available in a spotlight article on the Long Island Sound Study website and on the Long Island Sound Study ecosystem target presentation.

More information about efforts to improve water quality in the Sound are available in the hypoxia and nitrogen Ecosystem Target web pages on the LISS website.

Which is Worse: Too Much Nitrogen or Phosphorus?

Dr. James Ammerman

When it comes to the causes of hypoxia and harmful algal blooms in freshwater and estuarine and coastal waters, scientists point to an overabundance of nutrients stimulating algal blooms as a major contributing factor. But debates about which of the major nutrients, nitrogen or phos¬phorus, is the most important (limiting) nutrient in freshwaters versus estuarine and coastal waters go back decades and continue today. In an article that first appeared in the September issue of Interstate Waters magazine, Dr. James Ammerman, Long Island Sound Study's science coordinator, describes how scientists now view nitrogen as the most important limiting factor for most northeast estuaries. But Dr. Ammerman also provides examples of when phosphorus matters more. Knowing which nutrient is the limiting factor has major consequence on how to manage resources to reduce hypoxia. The article is now posted on the Long Island Sound Study website in the spotlight section, or it can be read in its original format in the magazine, which is available on the New England Interstate Water Pollution Control Commission website.

Long Island Sound Restoration Act Reauthorized

On October 23, President Donald Trump signed into law America's Water Infrastructure Act of 2018. This legislation, passed by the House and Senate last month, includes reauthorization through 2023 of the Long Island Sound Restoration Act (Section 119 of the Clean Water Act) and the Long Island Sound Stewardship Act of 2006. These two pieces of legislation direct the Long Island Sound Study Management Conference, the federal, state, and local partnership managed by EPA, to conduct work to restore and protect the Sound through implementation of a Comprehensive Conservation and Management Plan (CCMP). The Long Island Sound legislation authorizes the federal government to appropriate up to $40 million a year under Section 119 of the Clean Water Act and $25 million a year under the Long Island Sound Stewardship Act from fiscal year 2019 to 2023. In fiscal year 2018, the federal government appropriated $12 million directly for Long Island Sound work. See "Our Plan" on the LISS website for more information about the Comprehensive Conservation and Management Plan and restoration and protection efforts.

Hundreds of Long Island Students Learn How to be Sound Stewards

Since 2010, the Long Island Sound Study's Sound Stewards program has provided students with outdoor learning experiences where they participate in citizen science projects, including seining for measuring the diversity of marine life, and testing water quality. Staff from New York Sea Grant and the New York State Department of Environmental Conservation in Long Island run the program. This fall, they hosted seven Sound Stewards programs, reaching more than 350 students four schools with activities at Sunken Meadow State Park in Smithtown and Cedar Beach in Mount Sinai.

Mount Sinai Middle School students counting fish from a seine net at Cedar Beach.

Master Gardeners Get Sound Landscaping Certification

Lumie Han, left, a 2018 Coastal Certificate Program graduate, learns about the evergreen magnolia from Connecticut Collage Arboretum docents Lydia Pan, center, and Kathryn Williams, right.

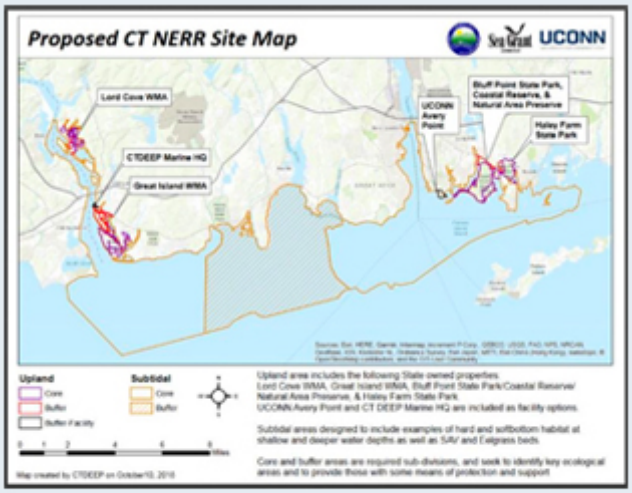
Lydia Pan and Kathryn Williams, docents at the Connecticut College Arboretum, provided an excellent tour of the Connecticut College Arboretum native plant collection in October for the graduating class of UConn Extension's Master Gardener Coastal Certificate Program. Initiated by the Long Island Sound Study, the Coastal Certificate program offers gardeners in Connecticut with an opportunity to learn how to design sustainable coastal landscapes that protect Long Island Sound and its tributaries from polluted runoff and provide habitat for wildlife. The program was developed by Judy Preston, the Long Island Sound Outreach Coordinator in Connecticut. Next spring's Coastal Certificate classes will be held at the Peabody Museum in New Haven.

AROUND THE SOUND

Hearing for Blue Plan Set for Nov. 8

The Connecticut Department of Energy and Environmental Protection (CTDEEP) has posted the first draft of the Long Island Sound Blue Plan policy document for public review and comment on its Blue Plan policy web page. The purpose of the Long Island Sound Blue Plan (or marine spatial plan) is to protect traditional uses, minimize conflicts, and maximize compatibility, now and in the future. This includes preserving Long Island Sound's ecosystems and resources, and facilitating a transparent, science-based decision-making process. CTDEEP will be holding a Public Hearing on Thursday, November 8, 6:30 pm, at Stamford Government Center. EPA Long Island Sound funds have contributed to the identification of ecologically important habitats in the plan.

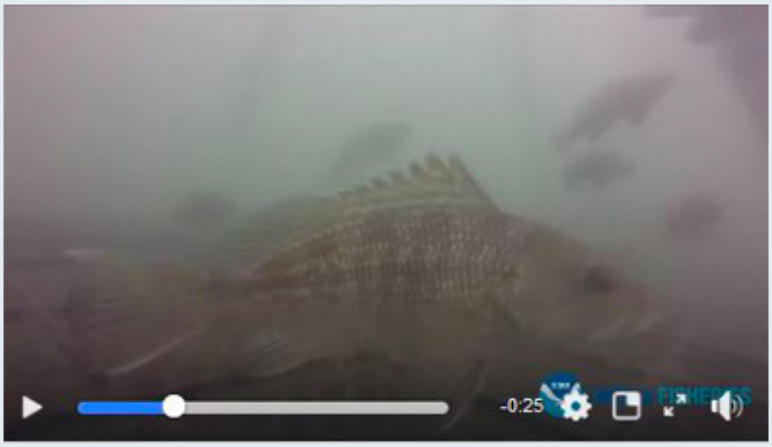
CTDEEP to Hold Public Meeting on Estuarine Reserve Proposal



The map shows the mulitiple sites proposed for the National Estuarine Reserve in Connecticut.

Long Island Sound National Estuarine Research Reserve Public Meeting: CTDEEP will hold a public meeting on November 13, 6:00-8:00 pm in Groton, CT to provide an update on Connecticut's effort to identify and propose a location for a National Estuarine Research Reserve (NERR or "Reserve"). The NERR system is a federal (NOAA)/state partnership) that establishes a location dedicated to estuarine research, monitoring, education, and stewardship. A Connecticut-based Reserve would complement and extend many existing scientific, environmental management, and education activities through the addition of funding, resources, and expertise. Additionally, it would help identify and enable new directions and initiatives by leveraging national programs. The project website contains the agenda and information about the proposal.

NOAA Milford Lab Research Uses GoPro to Study Habitat Around Oyster Cages



GoPro footage documenting black sea bass (Centropristis striata) of various sizes swimming above, through, and around shellfish aquaculture cage. Video credit: NOAA Fisheries/Milford Laboratory.

Check out the videos of life around an oyster cage, shot with a GoPro camera as part of a research study conducted by the NOAA Milford Lab. The scientists are using video to get a better understanding of how shellfish aquaculture can provide habitat similar to naturally occurring rocky reef environments. To date, the videos have captured shots of black sea bass, tautog, cunner, scup, summer flounder, conger eel, hake, goby, oyster toadfish, and rock gunnel associating and interacting with oyster cages. Fish have been seen feeding on the organisms growing on the cages and ropes, escaping from bigger fish by darting inside the cage itself, and female fish have even been seen retreating inside the cage to escape male fish of the same species.

AROUND THE WEB

EPA Seeks Applicants for Coastal Watersheds Grant to Support Projects

The EPA is soliciting applications to administer a competitive subaward program through the National Estuary Program (NEP) Coastal Watersheds Grant addressing urgent and challenging issues that threaten the ecological and economic well-being of coastal and estuarine areas. The applicant selected under this announcement will be funded under one assistance agreement with the EPA. The total federal amount of funding expected to be available under this announcement is approximately $4 million. Applicants must apply through grants.gov by December 20, 2018. More informaton, including the full Request for Applicants (RFA) is available here.

Conservationist Magazine Highlights New York's Artificial Reef Program

New York State uses heavy materials, such as steel pipes, decommissioned vessels, steel turbines, and even trusses from the former Tappan Zee Bridge that are cleaned and recycled to create 12 artificial reef sites. Learn how these artificial reefs, two of which are in Long Island Sound, help create habitat for fish and crustaceans, including black sea bass, scup, and lobster, in the October issue of the New York State Conservationist.

New York has 12 artificial reef sites, including two in Long Island Sound (Smithtown and Matinecock).

Study Highlights Value of Watershed Groups

Economists have learned that watershed groups in the United States have had a positive impact on their local water quality. That was the finding in a study published in the journal *Proceedings of the National Academy of Sciences*. The study finds that watershed groups provide a public good, helping to improve water quality and create swimmable and fishable waters.

Read more at phys.org.

Alsea River in the Oregon Coast Range. Credit: Sarah Beldin, USGS.

Subscribe to RSS Feed/Find Us on Facebook

Want to receive the latest Long Island Sound Study updates between issues of Sound Bytes? Go to the LISS Web site home page and click the RSS icon to subscribe to an RSS feed to get the latest Web site posts onto your

computer’s Web browser. Also, we just opened a Facebook page. Find us on Facebook by clicking on the Facebook icon from the LISS home page.

Long Island Sound Study | EPA Long Island Sound Office
888 Washington Boulevard, Stamford, CT 06904-2152 | Phone: (203) 977-1541