



SoundMatters

NEWS FROM THE LONG ISLAND SOUND STUDY

Spring 2022 (published May 31, 2022)

The federal contribution to restore Long Island Sound, designated an *Estuary of National Significance* in the 1980s, has grown dramatically in recent years.

In April, the Long Island Sound Study Management Committee reached agreement on a \$54 million budget for implementing projects in 2023. Just seven years ago the LISS budget, which is part of EPA's yearly budget, was set at \$5.4 million. That year, 2015, the Study also embraced a challenging agenda to restore the Sound through a revised Comprehensive Conservation and Management Plan, or CCMP. The recently approved LISS budget will provide LISS's partners with opportunities to fund projects to help achieve the ecosystem targets set by the CCMP and achieve the vision of a healthy and clean Sound by 2035.

This issue of Sound Matters includes an article describing some of these funded projects. We also highlight the **LIS Respire** project, LISS-funded science research that has helped to guide a new network to monitor coastal acidification in the Sound that will be funded through this year's budget. And we also highlight a blog post on the LISS website from a University of Connecticut doctoral student who describes her research using videos of coastal marsh birds who have evolved to adapt to the wet conditions of the marsh, but now face existential threats due to sea level rise. Restoring and protecting tidal wetlands for wildlife and for a shoreline resilient to climate change is another key component of the CCMP and the LISS budget.

Mark A. Tedesco, Director
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LISS NEWS

LISS \$54M Budget Expands Opportunities to Fund a Wide Range of Sound Restoration Projects



A healthy portion of the Great Meadows Marsh at high tide. LISS is funding the US Fish and Wildlife service to restore over 39 acres of lost or degraded salt marsh due to multiple stressors, including accelerated sea level rise. Credit: USFWS

The Long Island Sound Study Management Committee reached consensus on April 21 for a \$54 million budget to fund projects for Long Island Sound restoration efforts, a 74 percent increase from 2021. A key component of the budget increase was a \$21 million allocation to Long Island Sound through the Bipartisan Infrastructure Law, passed by Congress last year. The BIL funding will enable the Study's partners to take on "shovel-ready" large projects to benefit the Sound as well as plan and de-

sign for large projects in the future. Congress has awarded BIL funding to the LISS at \$21 million a year for five consecutive years for a total of \$105 million.

Here are highlights from the recently approved budget:

- **Stewardship Acquisition.** New York State Department of Environmental Conservation (NYSDEC) will receive \$3 million to purchase properties that will expand the Conscience Bay-Little Bay State Tidal Wetland Area and Little Bay and Port Jefferson Harbor, part of the Nissequogue River Stewardship Area. The acquisitions will help protect water quality and preserve tidal wetlands and other coastal habitats of Long Island Sound, and add to a LISS Stewardship Initiative that has resulted in the protection of over 7,800 acres since 2006.
- **Grant Program for Environmental Justice Initiative.** EPA will use \$3.2 million to develop and administer a competitive grant program focused on activities in the CCMP that address challenges and opportunities facing underserved and overburdened communities.
- **Removing Dams to Reopen Fish Passage.** The Connecticut Department of Energy and Environmental Protection (CT DEEP) will receive \$1.6 million to remove a defunct dam on the Pequabuck River that will open up 8.5 miles of passage for fish, and \$250,000 to help complete a project to remove the Dana Dam on the Norwalk River, which will open 17 miles of fish passage. Since 1998, the LISS Habitat Restoration Initiative has restored 429 river miles for fish to swim to upstream tributaries from Long Island Sound.
- **NYS's Septic System Replacement Fund Program.** NYSDEC will receive \$2.25 million to assist funding its programs to provide homeowners in Suffolk and Nassau Counties with up to \$10,000 in grants to replace outdated septic tanks and cesspools. Newer innovative systems will significantly reduce nitrogen discharges into the Sound and drinking water aquifers.
- **Tidal Wetlands Restoration.** The US Fish and Wildlife Service will receive \$250,000 to complete the final phase of a 39-acre marsh restoration project at Great Meadow Marsh in Stratford, CT, one of the largest restoration projects in the state. Last year, FWS received \$2 million for the first three phases of the project, which will restore habitat for marsh-dependent species of conservation concern, including saltmarsh sparrow, marsh pink, and diamondback terrapin.

The project includes planting of 50,000 herbaceous plants and 750 shrubs.

- **Wastewater Treatment Plant Upgrade.** The Massachusetts Department of Environmental Protection will receive \$4.5 million to assist the town of Chicopee upgrade its wastewater treatment plant. Once implementing, the plant will discharge approximately 467,000 fewer pounds of nitrogen a year (1,280 pounds of nitrogen per day) into the Connecticut River and downstream into Long Island Sound. The Connecticut River is the largest source of freshwater into the Sound.
- **Coastal Acidification Monitoring Network.** Five LISS partner organizations will receive a total of \$760,000 to develop and maintain a long-term coastal acidification monitoring program to better understand future impacts in relation to eutrophication, hypoxia, and climate change.
- **Outreach to Non-English Speaking Recreational Fishers.** CT DEEP will receive \$63,000 to hire interpreters to provide information to non-English speaking recreational fishers in their languages so they can participate in the agency's annual angler survey, a key data collection practice for understanding angler needs and fisheries' management needs in the Sound and its embayments.
- **Living Shorelines and Habitat Restoration for Resiliency.** CT DEEP will receive \$1.5 million for projects that increase resiliency of the shoreline through strengthening natural processes and coastal habitats and reduce dependencies on traditional hardened structures for shoreline stabilization. These living shoreline projects will be designed to promote long-term sustainability of relevant habitats, including tidal marshes, beaches and dunes, grasslands, and to enhance their capacity for resilience to climate change and sea level rise.

LISS-funded Research Project Finds Link Between Low Oxygenated Waters, Excess Nitrogen, and Coastal Acidification

With funding from the Long Island Sound Study, Dr. Penny Vlahos' *LIS Respire* project confirmed and charac-



(Now Dr.) Allison Staniec filtering seawater for dissolved organic carbon analysis. Credit: Lauren Barrett

terized a strong connection between two environmental problems often considered separately - excess nitrogen, which helps drive low dissolved oxygen in the Sound and coastal acidification, which scientists link to an increase in carbon dioxide in the water caused by localized respiration of bacteria, in addition to greenhouse gases. In a new article for **Sound Spotlight**, freelance writer Kristen Jabanoski highlights the work of Dr. Vlahos's research team, including evidence that the Sound's waters are growing more acidic, and the potential impact to water quality and shellfish. The article also looks at potential

management solutions, and a new effort by the LISS to develop a Sound-wide monitoring network to measure acidification in order to keep track of the problem. You can find it in [Sound Spotlight](#).

Coastal Marsh Birds Live Life on the Edge, but Now Face Challenge of Sea Level Rise



Clapper rail eggs float above their nest during a high tide at Hammonasset Beach State Park in Madison, Connecticut. Credit: Sam Apgar

Saltmarsh habitat provides plenty of food for coastal marsh birds such as saltmarsh sparrows to forage. But in a mostly treeless environment, the tradeoff is having to build nests on grasses that are inundated during high tides. How do the eggs and chicks survive frequent nest flooding? You can see for yourself in captivating videos UConn PhD student Sam Apgar included in a recent blog post on the Long Island Sound Study web-

site. A time lapse video, for example, shows a saltmarsh sparrow nest under water for 65 minutes, but not at a height that would cause the eggs to float out of the nest. Apgar's post describes how she conducts her re-

search (often at night), how the birds have adapted to the environment and reproduce despite these conditions, and how sea level rise threatens the delicate balance needed for living along the coast. The blog post appears in the LISS [media center](#).

LISS hosts Instagram Live event at Beaver Lake Fish passage.



Dr. Peter Daniel opening the compartment of the Mill Neck fishway. The fishway is underneath a bridge in the Village of Mill Neck. Credit: Jimena Perez-Viscasillas

On April 22 (Earth Day) Jimena Perez-Viscasillas, the New York Outreach Coordinator for the Long Island Sound Study, hosted the Study's first ever Instagram Live event at the usually inaccessible fish passage at Beaver Lake. While windy impacted the sound quality of the video, the information on the video provides a greater understanding of the importance of installing fishways to restore historic spawning grounds in freshwater tributaries of the Sound. Perez-Viscasillas was joined by New York Habitat Restoration Coordinator Vicky O'Neill who gave an overview of how fish passage work is done, Professor Peter Daniel of Hofstra University who explained how the fish ladder works

and how river herring is monitored, and Friends of the Bay director Heather Johnson who discussed the Beaver Lake site and ways volunteers can get involved. The Beaver Lake fishway was supported by the Futures Fund and installed in 2017. The video is in the LISS's [Instagram site](#).

SOUND BYTES



The Long Island Sound Pelham Bay Earth day walk included a scavenger hunt on the boardwalk at Orchard Beach. Credit: Lilli Genovesi

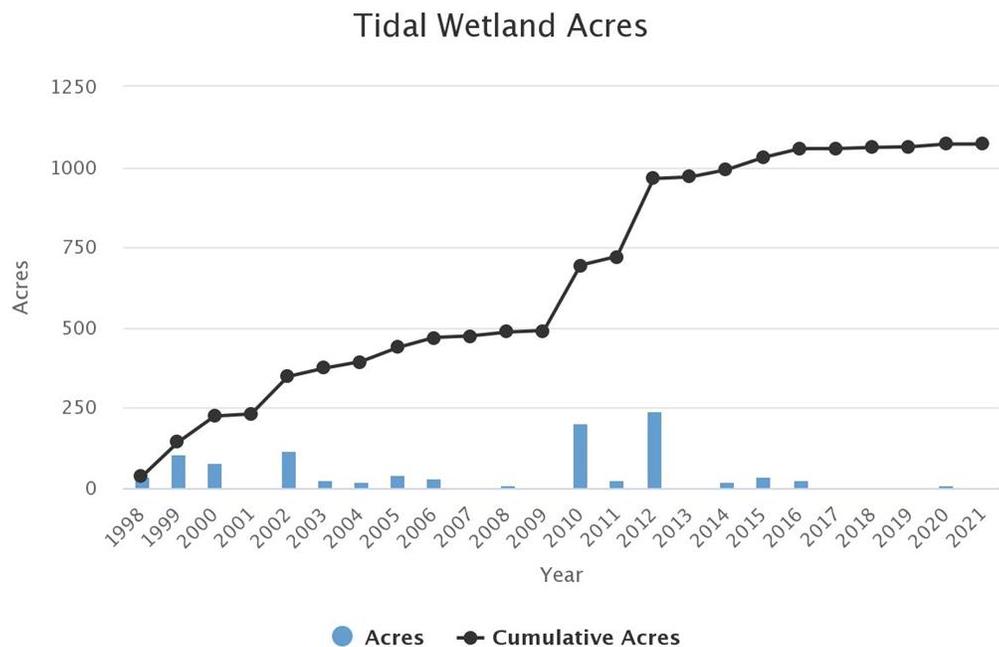
Western Long Island Sound Outreach Coordinator Lilli Genovesi also participated in an Earth Day event, joined by Bronx Children's Museum staff and nearly 50 participants, to walk the Twin Island Trail in Pelham Bay Park and Orchard Beach. Children were invited to complete a coastal scavenger hunt, explore the rocky intertidal shores, and learn about the flora and fauna of the Long Island Sound estuary. "I am happy we came here today," said one parent at the Earth Day hike. "It is good because my child gets to run around, breathe fresh air, and spend a day without his tablet."

- The spring 2022 issue of **Sound Update** focuses on Long Island Sound Study's Year in Review of 2021. Various clean water, habitat restoration, education, and science projects from Connecticut and New York are highlighted, including the new Long Island Sound Marine Debris Action Plan, Community Science Long Island 2021, and the latest findings on hypoxia in the Sound. **Sound Update** is available in the LISS [media center](#).
- In April, a team of UConn students, faculty, and staff advisors won second place in EPA's 2021 Campus RainWorks Challenge. The UConn team's project, **Ecologic L.I. Sound**, presented a redesign of the Avery Point campus that uses native plants and green infrastructure features to mitigate the effects of stormwater pollution on the terrestrial and marine ecology of Long Island Sound. Learn about all the winners on EPA's [website](#).
- The LISS and New York Sea Grant, with County Legislator Sarah Anker, will be hosting a virtual public presentation on coastal erosion on June 9. The meeting is open to all but is geared to residents of the North Shore in Suffolk County who are concerned about coastal bluff and shoreline erosion affecting their properties. Meeting will take place via Zoom. Register in advance [here](#).
- Jessica LeClair is Connecticut's new Long Island Sound outreach coordinator for Connecticut. Learn more about the Connecticut native's work on outreach and sustainability issues in an article on the Connecticut Sea Grant [website](#).

- Also on the Connecticut Sea Grant [website](#), checkout the latest edition of **WrackLines**, which includes articles on diving in Long Island Sound, how copepods respond to climate change, and shellfish restoration projects in Long Island Sound.

FOCUS ON LISS INDICATORS

Tidal Wetlands Restored



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

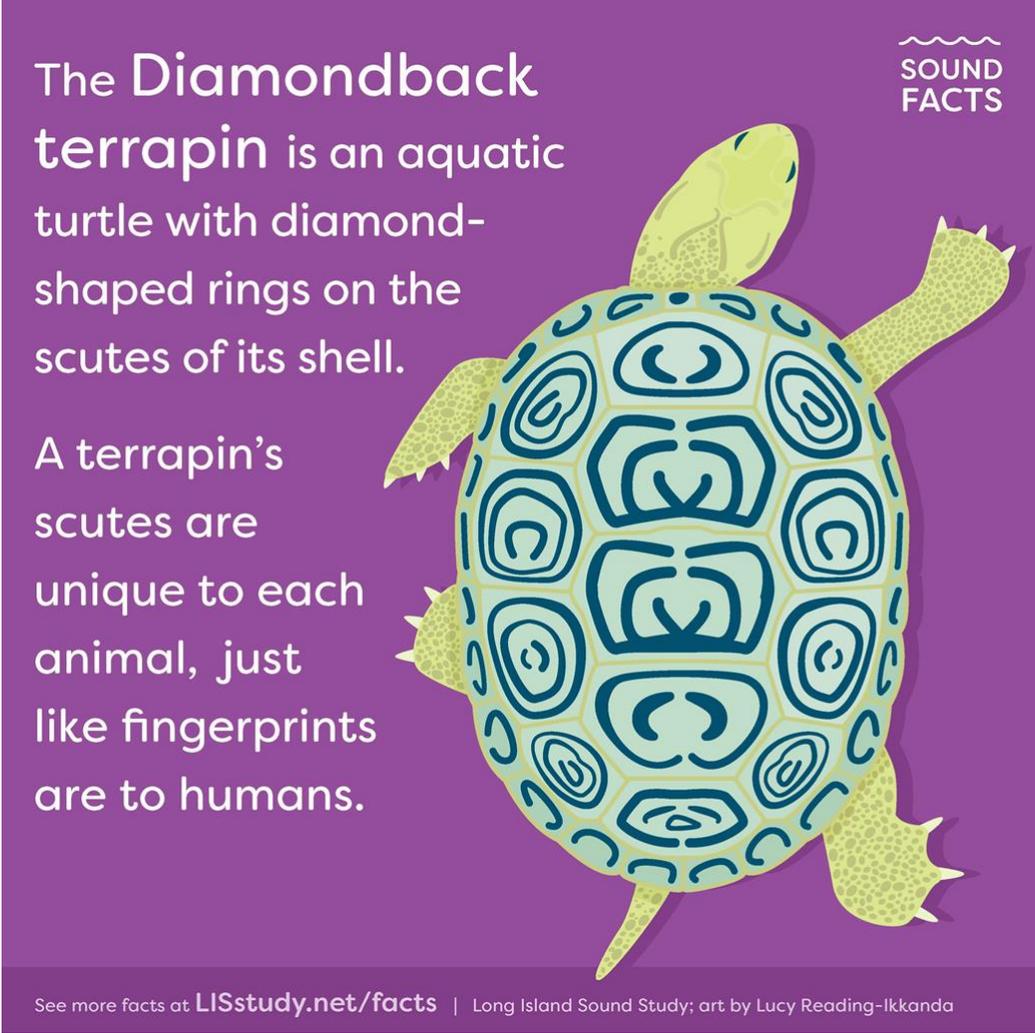
The Long Island Sound Study Ecosystem Targets and Supporting Indicators microsite tracks indicators that measure the health of the Sound and whether the Study is meeting management targets to help achieve restoration goals. In each issue of Sound Matters we highlight the latest trends in one of the indicators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

May is American Wetlands Month. Healthy tidal wetlands help trap sediments, store floodwater, and reduce wave energy during storms, and are vitally important for marine life. Since 1998 the Long Island Sound Study Habitat Restoration Initiative has restored 1,071 acres. In recent years, however, restoration has slowed down significantly, and the Study needs to accelerate efforts to meet its wetlands restoration target by 2035.

Check out the LISS ecosystem target [microsite](#) for more information on tidal wetland restoration and other habitat restoration targets.

SOUND FACT

Diamondback Terrapin

An infographic with a purple background. On the left, there is white text describing the Diamondback terrapin. On the right, there is a stylized illustration of a terrapin with a light green body and a shell featuring dark blue diamond-shaped rings. In the top right corner, there is a logo with wavy lines above the words 'SOUND FACTS'. At the bottom, there is a small white text box with a URL and attribution.

The **Diamondback terrapin** is an aquatic turtle with diamond-shaped rings on the scutes of its shell.

A terrapin's scutes are unique to each animal, just like fingerprints are to humans.

SOUND FACTS

See more facts at [LISstudy.net/facts](https://lisstudy.net/facts) | Long Island Sound Study; art by Lucy Reading-Ikkanda

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

May 23 was World Turtle Day, but it's always a good day to celebrate the diamondback terrapin, a turtle that is native to Long Island Sound. Diamondback terrapins live in the brackish waters of the Sound and other estuaries in North America, but the females bury their eggs in beaches and dunes and cover them with pebbles and small debris. If you are fortunate, you can see their unique diamond shaped rings on their shells, but don't get too close. Human disturbance as well as animal predation of

the nests threatens their survival in this region. Visit the [Sound Facts web pages](#) for more information on this turtle, and to view other Sound Facts.

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