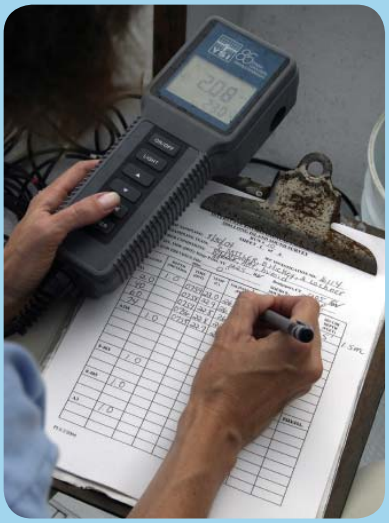
Sound UPDATE
Newsletter of the Long Island Sound Study FALL 2007

Monitoring Dissolved Oxygen Trends in Long Island Sound

By Matthew Lyman

Long Island Sound has a large and highly developed watershed. Nitrogen contributions from the watershed, combined with strong summer thermal stratification in its western half, render Long Island Sound susceptible to seasonal low dissolved oxygen levels (hypoxia). Since 1985, the causes and effects of hypoxia have been the subject of intensive monitoring, modeling, and research through the Long Island Sound Study (LISS). The Connecticut Department of Environmental Protection (CTDEP) and the Interstate Environmental Commission (IEC) are the two LISS partners that have conducted the lion's share of the monitoring in the far western Sound.



Recording water quality monitoring aboard the IEC research vessel *Natale Colosi* to document low dissolved oxygen conditions. **Photo by Peter L. Sattler.**

Monitoring conducted by the CTDEP on behalf of the LISS has shown an annual recurrence and persistence of hypoxia over the last 17 years. CTDEP's Long Island Sound Ambient Water Quality Monitoring Program (the "Program") collects samples for nutrient analysis and water quality parameters year-round from 17 fixed sites located throughout Long Island Sound. In response to March 2002 Long Island Sound monitoring workshop, CTDEP expanded the scope of monitoring to include identification of zooplankton and a new technique to identify phytoplankton by analyzing their pigments (see page 5). Summer hypoxia surveys, part of the broader Program, provide annual descriptions of the extent and duration of hypoxia (defined as DO levels below 3.5 mg/L) in the bottom waters of Long Island Sound. The Program currently monitors between 25 and 35 fixed stations during the summer hypoxia surveys. The hypoxia surveys focus on areas in the Narrows and western and central basins historically affected by hypoxic conditions. The number of stations sampled during these surveys is adjusted according to the severity of the hypoxic event.

For the 17th consecutive year, IEC is documenting low DO during the critical summer season. The CTDEP data have been significantly enhanced by the weekly data collected by IEC for western Long Island Sound and the upper East River. The twenty-one sampling station network was adjusted in 1997 to include the north shore embayments of Little Neck Bay, Manhasset Bay, and Hempstead Harbor. Several stations are visited by both CTDEP and IEC for quality assurance purposes. The information is also used to measure the effectiveness of management activities and programs implemented under the LISS Comprehensive Conservation and Management Plan. The Commission disseminates its data on a weekly basis to give cooperating agencies and volunteer monitoring groups an immediate picture of environmental conditions, as well as a basis for comparison with historic and ongoing monitoring programs.

CTDEP's analysis of data from 1991 to 1998 found that the majority of stations (83.5%) had increasing trends with 10.5% having significant increasing trends.

Continued on page 5.

This issue is devoted to nitrogen trends in Long Island Sound.

Inside:

Sound *Update* is published by the Long Island Sound Study public outreach program to inform the public about the efforts to restore and protect the Sound.

Message from the Director

What do the Gulf of Mexico, Chesapeake Bay, Tampa Bay, and the Black Sea have in common with Long Island Sound? Each ecosystem suffers negative effects from nutrient pollution, specifically excess amounts of nitrogen. While nitrogen is a vital nutrient to all living things, like the expanding mid-sections of the American public, the evidence is clear that many coastal systems suffer from too much of a good thing. The effects include low levels of dissolved oxygen that can suffocate fish, loss of seagrass that provides valuable nursery habitat, and shifts in biological communities. The changes that result – loss of commercially valuable fish and shellfish and reduced recreational opportunities – often have economic consequences and can evolve slowly over decades, almost imperceptible to the public, until taken as the norm by a new generation. But the evidence is now strong enough that reports issued by the National Research Council and the U.S. Ocean Commission have identified nutrient pollution as the greatest threat facing coastal marine environments.

IEC environmental technician staff recording data aboard the IEC research vessel *Natale Colosi*. **Photo by Peter L. Sattler.**

In Long Island Sound excess nutrients have stimulated plant growth, increased the amount of organic matter settling to the bottom, lowered dissolved oxygen levels, altered the food web, and changed habitats. While the problem was recognized in the early 1970s and calls were made for a comprehensive assessment, it wasn't until the Long Island Sound Study sponsored Soundwide surveys of water quality that the extent of hypoxia was documented.

Fortunately, since the late 1980s Long Island Sound Study has been in the forefront of efforts nationwide to understand and deal with nutrient pollution. Locally, the focus has been primarily on hypoxia (low levels of dissolved oxygen), the loss of seagrass, and alterations to the food web.

In this edition of *Update* you'll find articles on the progress in controlling nitrogen and on monitoring trends in hypoxia. Development and population increases in the Long Island Sound watershed have resulted in a six-fold increase in the amount of nitrogen draining to Long Island Sound from the watershed. Now, Long Island Sound is on a nitrogen diet. Management efforts underway are working to cut back nitrogen pollution by more than half. Accomplishing this goal means upgrading wastewater treatment plants with new technologies that remove nitrogen from the waste stream. And it means reducing polluted runoff through best management practices on farms and suburban areas.

The good news is that there are successful examples of restoring ecological services in coastal ecosystems by reducing nutrient pollution. Tamp Bay, where concerns over impaired water quality and lost recreational opportunities triggered upgrades to sewage treatment plants in the 1970s, has seen a recovery in eelgrass habitat. Close to home, in Mumford Cove, in eastern Connecticut, eelgrass habitat also recovered when a wastewater discharge was relocated outside of the cove, eliminating a major source of nutrients. When nutrient pollution is controlled, marine systems respond.

National Estuaries Day September 29th

The Sound Futures Fund supported National Estuaries Day events in Mystic, CT and Port Jefferson, NY. LISS staff participated in the Alley Pond Nature Center National Estuaries Day event, in Queens. In Port Jefferson, the Long Island Seaport and EcoCenter unveiled a geology walk that uses the rocks along the shore as a way of understanding time and history – ice ages and estuaries. A student from the science club at Ward Melville High School coordinated the walk.

Photo courtesy of Long Island Seaport and EcoCenter.

Where We're at with Runoff

By Chet Arnold and John Rozum

With the recent news of beach closures and lobster die-offs it is easy to lose sight of our ongoing progress to preserve Long Island Sound. Although the problems are many, there are definitely positive trends to report, even in the difficult area of nonpoint source pollution. The seventeen years since the publication of the LISS Comprehensive Conservation and Management Plan (CCMP) have seen a slow but steady evolution in our collective thinking – and acting – on the problem of polluted runoff.

The first, and perhaps most significant, trend is simply an increase in awareness of the problem. Public awareness has grown, in part due to national media coverage by entities like The Weather Channel, but also due to home-grown efforts like the LISS storm drain stenciling program. Awareness on the part of land use decision makers has also grown, largely due to educational programs like the Nonpoint Education for Municipal Officials (NEMO) programs of Connecticut and New York. Many towns have turned this awareness into action, changing their plans, regulations and development practices to better protect their water resources.

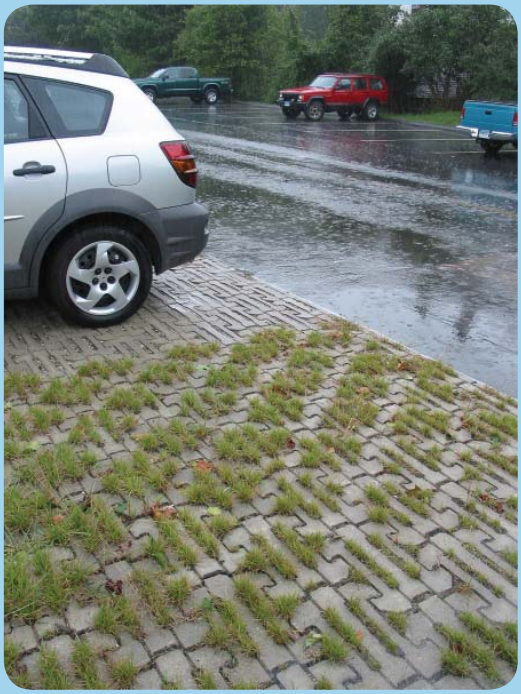
New regulatory programs such as the Phase II Stormwater and Total Maximum Daily Load (TMDL) programs have also gotten the attention of local officials and others. Phase II, in particular, has sparked many local governments to address the polluted runoff issue head-on. On Long Island, it has led to a number of inter-municipal cooperative efforts that not only make sense from a watershed perspective, but are more cost-efficient for the participating villages and towns. In Connecticut, Phase II has spurred many communities to assess their stormwater infrastructure, such as projects to map storm drains and outfalls.

The TMDL program has been slower to have immediate impact at the local level, but that may be changing. Connecticut Department of Environmental Protection has written the first impervious cover-based TMDL regulation in the nation. If this approach, based on solid Connecticut-specific data, catches on, communities in urbanized areas will be hearing a consistent and comprehensible story that land use planning and site design is the first line of defense against the impacts of development on water resources.

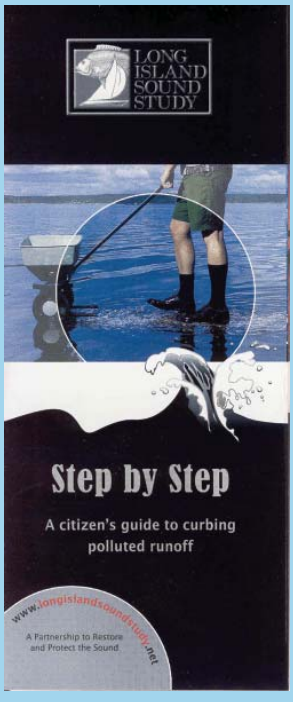
Educational and regulatory programs are not the only catalysts to inspire change. On the planning front, the digital revolution is making land use, natural resource, and other planning information much more widely available than in previous decades. The ongoing fusion of internet, geographic information system (GIS), remote sensing, and other technologies is making this information accessible to an ever-widening section of the populace. On the design front, there is increasing awareness and acceptance of "low impact development" (LID) techniques as demonstrated by Connecticut's "Jordan Cove" research project. The project, which has strong LISS roots, has generated interest across the nation for its research results that demonstrate the effectiveness of LID techniques.

As always, shortfalls in funding and political will threaten to keep this progress at a modest pace, but the case could be made that the hard part – changing our way of looking at this issue – is well on the way to being accomplished. It remains to be seen whether our evolutionary progress can catch up to, and keep up with, the land use changes occurring every day in the LISS watershed. For more information visit http://nemo.uconn.edu

Chet Arnold is a water quality educator and the Associate Director of the UConn Center for Land Use Education and Research.
John Rozum is a land use educator and the Director of the Connecticut NEMO program.



Haddam, CT parking lot with pervious pavers. **Photo courtesy of CT NEMO.**

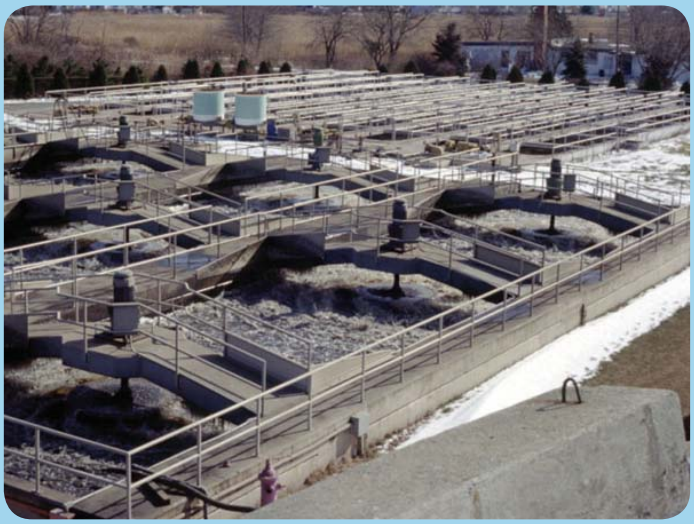


The Step by Step brochure is available from the Long Island Sound Office. The brochure contains tips on curbing stormwater runoff.

Trends in Point Source Nitrogen Loads to LIS

By Paul Stacey

In 1990, under the Phase I agreement for nitrogen management, the states of Connecticut and New York through the Long Island Sound Study partnership agreed to freeze nitrogen loads at 1990 levels at sewage treatment plants (STPs) in southwestern Connecticut and in areas of New York bordering western Long Island Sound. This marked the beginning of 17 years of "point source" (i.e., STPs) nitrogen management that is planned to extend into the next decade. Reductions in nitrogen loading soon followed with the adoption of the LISS Comprehensive Conservation and Management Plan (CCMP) in 1994. In the CCMP, Connecticut and New York committed to substantive nitrogen reductions at a suite of western Long Island Sound STPs in both states under a Phase II agreement. At that time, low-cost retrofits were implemented in advance of a final target being adopted in the Total Maximum Daily Load (TMDL) to address low dissolved oxygen in the Sound.



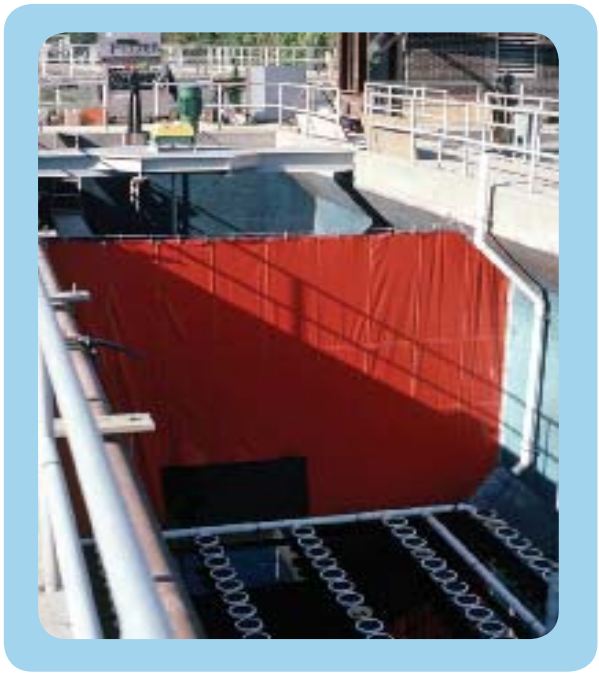
Fairfield Sewage Treatment plant aeration tanks in 1983. **Photo by Roy Frederickson, CTDEP.**

Significant progress was made under the Phase I and II agreements, paving the way for the final TMDL nitrogen control plan to be released in 2000 and approved by EPA in 2001. While the overall nitrogen reductions under Phase I and II were modest, on the order of 25% for the handful of STPs that underwent retrofitting, Long Island Sound still needed help and that nitrogen management was the necessary plan of attack to resolve the low oxygen, or hypoxia, problem. A Phase III plan set the course and established the public and governmental will to manage nitrogen from primary sources and commit to the hundreds of millions of dollars that would likely be needed to fix the problem.

Phase III actions, to remove 58.5% of the nitrogen discharge to LIS that was estimated to have existed in 1990, were planned under the TMDL in 2001. The TMDL applied to both Connecticut and New York portions of the LIS watershed, and point source reduction targets ranged from 58.5% in New York City, where no nonpoint sources exist, to about 65% in portions of Connecticut and New York where nonpoint sources would provide a 10% contribution from urban and agricultural lands towards the overall goal. Progress has been on schedule, with point source reductions amounting to 9,404 tons/yr (24.2%) from the 38,854 tons/yr baseline, or about 40% towards the final reduction goal.

Connecticut's Nitrogen General Permit and nitrogen trading program, See page 6, awarded EPA's blue ribbon for excellence, is a cost-effective mechanism for attaining nitrogen reduction. New York has made good progress towards the goal through both retrofits and upgrades of STPs in its portion of the Long Island Sound watershed. New York City has begun a very costly construction program to meet the final reduction target at major facilities on the East River. These programs attest to the commitment of both states, the counties, and municipalities to address the problem, indicating a high level of support among the public to pay the bill that helps ensure a vibrant and healthy Long Island Sound.

Paul Stacey, Director of Planning & Standards Division, Bureau of Water Protection & Land Reuse, at Connecticut Department of Environmental Protection.



West Haven Sewage Treatment Plant 1996 upgrade. Anoxic Zone nitrogen removal tank. **Photo by Gary Johnson, CTDEP.**

Tracking Phytoplankton

Tracking the types and amounts of phytoplankton provides critical information in understanding hypoxia and the health of Long Island Sound. But how do you measure tiny free-floating plants that can populate a drop of water by the thousands?

Using a microscope, the traditional technique for counting phytoplankton, is time consuming work and lacks the ability to distinguish some of the smallest species. In 2002, with technical and financial support from the National Coastal Assessment Project of the EPA, the Connecticut Department of Environmental Protection (CTDEP) decided to try a newer approach using a process called High-Performance Liquid Chromatography or HPLC.

Each plant species has a unique composition of pigments that produces a characteristic color in its tissue. Scientists using HPLC can take a water sample, identify each of the pigments, and chart the pigment composition of the sample on a graph. The process is done for CTDEP by the Horn Point Laboratory of University of Maryland's Center for Environmental Science. A software program called CHEMTAX can then read the graph to identify the composition of phytoplankton species in the water sample. But before CHEMTAX can do its job, CTDEP staff must supply the information on pigment composition for different species in the Sound – akin to developing a pigment "fingerprint."

The monitoring program has revealed a distinct seasonal pattern in phytoplankton community composition. Diversity of plant life is low during the winter when heavier phytoplankton dominate. Diversity is higher in the summer, with smaller phytoplankton taking up a greater percentage of the community composition. The information may eventually prove valuable to scientists in learning the specific mechanism of how potentially troublesome phytoplankton blooms are triggered. It will also help scientist learn more about the most basic level of the Sound food web, and how it interacts with the tiniest animals in the food web – zooplankton – and larger fish species.

Continued from page 1.

Only 12.5% had decreasing trends, which were not significant, and 4% showed no trend. Recently CTDEP revisited the data looking at trends through 2006. The majority of stations (64%) still show an increase with 7% showing a significant increase. The percent of stations with a decreasing trend, thought not significant increased to 36%.

Hypoxic conditions were observed by IEC in western Long Island Sound surface waters during the 2006 sampling; this is the sixth year in a row that these conditions were observed in surface waters. During 2007, hypoxic surface conditions were observed only during the week of August 20 and only in the East River. Prior to 2001, the last observation by IEC of hypoxic conditions in the surface waters was in 1997. During 2006, hypoxic, as well as anoxic conditions (DO < 2 mg/l) were observed in bottom waters from mid-July until late August. The arrival of Hurricane Ernesto with prevailing easterly winds and heavy rain alleviated the low DO conditions. Storms often result in the alleviation of hypoxic conditions; Hurricane Bob was the answer to low DO in 1991, the first year that these surveys began.

Dissolved oxygen data from Long Island Sound show a decrease in the area affected by hypoxia from 1987 through 2006. However from 2002 through 2006 there have been larger areas affected by severe, less than 1mg/L, hypoxia. The summer of 2003 had the largest area below 1mg/L since 1991. The good news is that the areas below 1mg/L have been steadily decreasing since 2003 and the summer of 2007 had no areas below 1 mg/L. The summer of 2002 ranked 4th hottest since 1895 (NOAA), and likely played a role in the severity of hypoxia. The summers of 2003 and 2004 had large volumes of brown algae in the western Sound. The large volume of algae present during the summers of 2003 and 2004 may have led to the severe depletion of oxygen in the bottom waters.

CTDEP and IEC continue to monitor the Sound. The CTDEP maintains a website www.ct.gov/dep/site/default.asp with information on temperature and maps of summertime hypoxia. The IEC Annual Reports can be accessed www.iec-nynjct.org for yearly summaries of the sampling effort.

Matthew Lyman, Environmental Analyst, Connecticut Department of Environmental Protection, LIS Water Quality Monitoring Program. Peter Sattler, Principal, Environmental Planner, Capt., research vessel Natale Colosi, Interstate Environmental Commission contributed to this article.

Kimberly Graff Leaving LISS

After fifteen years I have decided to leave my post as the Long Island Sound Study Outreach Coordinator with New York Sea Grant and pursue my masters of Library and Information Science at Syracuse. As I enjoy helping people find information or learn something new, library and information science seemed a perfect fit.

I remain interested in Long Island Sound and am a strong supporter of the program. My tenure with the program has been very rewarding, especially working with all the organizations in the Small Grants program and the recent completion of the Public Perception Survey. I look forward to the future outreach efforts and I wish you all the best.

Kimberly Graff

Connecticut's Trading Tool Controlling Connecticut's Nitrogen Discharges

By Mark Parker

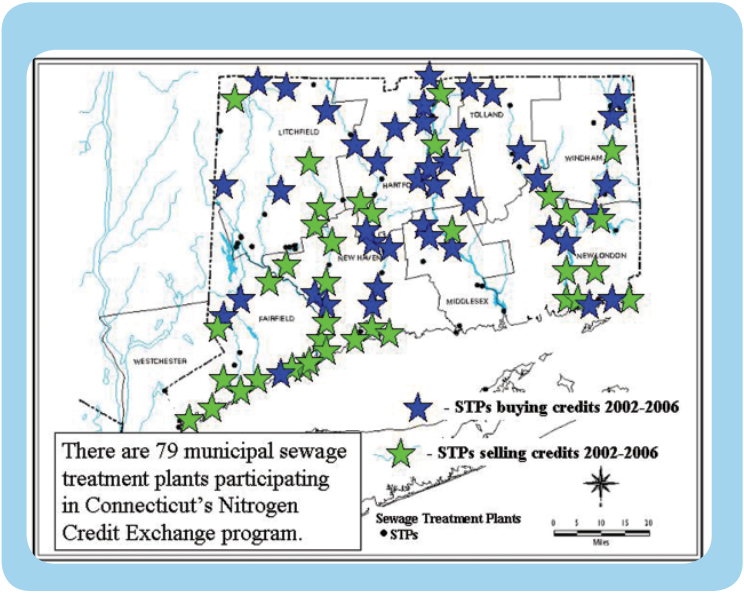
With the approval of the Long Island Sound Total Maximum Daily Load (TMDL) on April 3, 2001, came a renewed plan to reduce the nutrient load to Long Island Sound and, hopefully, the resultant hypoxia problems. This plan required Connecticut and New York to set waste load allocations for point sources of nitrogen and load allocations for nonpoint sources. New York, with only 23 Sewage Treatement Plants (STPs), chose to regulate their discharges of nitrogen through a series of individual permits that contained both aggregate regional "bubble" limits and individual limits. Connecticut, with its 79 plus municipal STPs, chose to utilize a General Permit for Nitrogen as an aggregate loading and enacted legislation authorizing the use of a Nitrogen Credit Exchange (NCE) program to help overcome the economic hurdles many municipalities faced in meeting the General Permit discharge limits.

Through Public Act 01-180, Connecticut created a new permitting system forming the backbone of the NCE program and designed to help Connecticut meet its TMDL requirements. All the municipal sewage treatment plants fall under a single general permit, and only the aggregate of the plants must meet the 64 percent reduction in nitrogen. An individual plant can meet its allotted reduction, or Waste Load Allocation (WLA), either through actual reductions or by purchasing credits generated from other treatment plants that succeed in reducing below their discharge requirements. The closer a treatment plant is to the Sound, the stronger an impact it has on water quality. Therefore only a fraction of the nitrogen from distant plants actually makes it into the western portion of the Sound. The principle of the NCE program is to utilize trading ratios calculated from the natural attenuation effect of distant STP effluent discharges to determine a purchase fee schedule.

The general permit accounts for geographical differences by establishing attenuation or equalization ratios. The ratios give plants sited near the Sound an economic incentive to upgrade their facilities and create nitrogen credits, as well as to encourage distant plants to purchase credits. The Credit Exchange establishes an economic allocation taking both cost and environmental impact into consideration.

After five years of implementation, the program seems to be working well. Nearly $11.6 million in credits have been generated and sold representing 5,533,686 credits for a net equalized nitrogen removal of 508,626 lbs. The total aggregate equalized load to the Sound has kept pace with Connecticut's reduction goals. The price per pound of nitrogen discharged has ranged from $1.65 (in 2002) to $3.40 (in 2006), with an anticipated increase over the next ten years. The economic benefit is realized when we consider that 46 municipalities have purchased credits totaling $11,523,094 (with the state of Connecticut contributing only $33,017 to the program) to pay 33 municipalities for the STP improvements that enabled those plants to discharge nitrogen at levels below their permitted WLA of nitrogen. This greatly helped toward the aggregate goals of reduction.

Nearly half of the plants have been able to sell credits during the last five years but four Connecticut plants have been exceptional in reducing nitrogen below their annual WLA and selling credits every year. The New Haven East plant has sold over $2.02 million in credits, Norwalk has generated nearly $1.7 million in nitrogen reductions, Waterbury has sold over $1.6 million, and Greenwich has generated over $1.2 million in nitrogen reductions below their permitted limit. Annual reports of the Nitrogen Credit Advisory Board are submitted to the Connecticut General Assembly and can be found on the Connecticut Department of Environmental Protection web site at www.ct.gov/dep/cwp/view.asp?a=2719&q=325572&depNav_GID=1654



CT's Nitrogen Credit Exchange Map. The 79 municipal sewage treatment plants participating in the program.

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Proposed Revision to the New York State Dissolved Oxygen Standards

By Rick D'Amico

The federal Clean Water Act requires all states to maintain adequate standards to protect its waters. New York State currently has a dissolved oxygen (DO) standard of never less than 5.0 mg/L (ppm) for all Class SA, SB, and SC marine waters. However, newer and better science supports a revision to that standard. In 2000, EPA issued a document entitled Ambient Aquatic Life Water Quality Criteria for Dissolved Oxygen (Saltwater): Cape Cod to Cape Hatteras, which contains EPA's updated recommendations to the states for necessary minimum levels of DO to protect marine organisms from the Virginian province, which includes Long Island Sound. Most of the organisms used in EPA's research are normally found in Long Island Sound. The New York State Department of Environmental Conservation (NYSDEC) believes that revision of its DO standards is appropriate, based on this EPA document.

New York State has proposed a revision of the DO standard for all Class SA, SB, and SC (marine) waters. This includes New York State jurisdictional waters in rivers, bays and estuaries located primarily in and adjacent to Long Island Sound, the Atlantic Ocean, New York/New Jersey Harbor, and the lower Hudson River. It is part of a larger package of proposed revisions to water quality standards and standard-setting procedures for the state, which constitutes New York's "triennial review" as required by the Clean Water Act.

The proposed standard replaces the 5.0 mg/L standard with a chronic standard of 4.8 mg/L (with allowed excursions to as low as 3.0 mg/L for a limited time). This standard protects aquatic life propagation and survival. Although the EPA laboratory tests indicate that aquatic life can survive for periods of DO less than 3.0 mg/L, New York acknowledges that in the wild there may be other stressors, and believes that a proposed acute standard of 3.0 mg/L is necessary to protect for aquatic life survival in the marine waters.

There are a few differences between the Connecticut DO standard, adopted in 2002, and the proposed New York DO standard. While both are based on the same EPA guidance and evaluation, Connecticut considers the presence or absence of a pycnocline, limiting the new criteria to waters at and below the seasonal pycnocline in waters greater than 5 meters in depth. Nearshore waters and surface waters (above the pycnocline) have retained their prior DO standards of 5.0 and 6.0 mg/L for Class SB and SA waters, respectively. Connecticut has also set a floor acute concentration of 3.5 mg/L.

The revised New York standard was proposed on December 13, 2006. A Public Hearing was held on February 5, 2007 in Albany, New York. The comment period ended on February 14, 2007. The rule change is expected to be adopted by the end of 2007, although the deadline is February 5, 2008, one year after the public hearing.

Rick D'Amico is the New York State Coordinator, Long Island Sound Study, for New York State Department of Environmental Conservation.

Classifications

SA, SB, and SC are different use categories for saline waters. SA indicates that the water should be acceptable for shellfishing, primary (i.e., swimming) and secondary (i.e boating) contact recreation. SB indicates that water should support primary and secondary contact recreation. SC indicates that water should be suitable for secondary contact recreation. While all three classifications have different water quality criteria for various parameters, all have the same criteria for DO (currently) at 5.0 mg/L.

Hempstead Harbor Re-Opens to Shellfishing

Two million new partners in water quality suddenly appeared in Hempstead Harbor on October 9 — in the form of hard clams and oysters, seeded by Nassau County Executive Tom Suozzi and others aboard the historic oyster sloop *Christeen*. As filter feeders, the new harbor denizens will help cleanse harbor water as they grow and may be the beginning of a revived shellfishery.

Nassau County Executive Tom Suozzi with clams and oysters ready for reseeding the Harbor. **Photo by courtesy of Nassau County.**

"Much of Hempstead Harbor has been closed to shellfishing since the 1930s because of bacterial contamination, and the polluted water killed off the once-abundant clams and oysters," Nassau County Executive Thomas R. Suozzi said. "Today's shellfish seeding symbolizes an outstanding environmental achievement. We've proved we can clean up once-degraded waters to the point where they are again productive and healthy to diverse species. My hope is that today's success serves as a model for other waterways." Mark Tedesco and Louise Harrison of the Long Island Sound Office helped with the seeding at the County Executive's press event, attended also by representatives of the project's many participants, including the Coalition to Save Hempstead Harbor, the Cornell Cooperative Extension Marine Program, the Hempstead Harbor Protection Committee, Frank M. Flower & Sons hatchery, and the Town of Oyster Bay.

Congressional State of the Sound Study

The Congressional Long Island Sound Caucus launched a "Congressional State of the Sound Study" on Saturday, October 6 with dual forums in New York and Connecticut. Hosted by Caucus Co-Chairs Reps. Steve Israel (NY) and Christopher Shays (CT), the panels provided preliminary reports on several issues relating to Long Island Sound including water quality, land use, dredging, habitat restoration and stewardship. Reps. Israel and Shays discussed the status of the $10 million appropriated by the House for Long Island Sound restoration and stewardship programs and community members were invited to testify and ask questions.

"This year, we fought to pass $10 million for Long Island Sound stewardship and restorations programs in the House," said Congressman Israel. "Now, we need community input to determine which areas relating to the Sound need the most resources. That's why we've launched the State of the Sound Study, which will provide a comprehensive review of the health of the Sound."

"It is clear from the testimony we've heard today that our communities want to be engaged in making Long Island Sound healthier," Shays said. "The Sound is an 'Estuary of National Significance,' and protecting it will require a commitment from government, organizations, and our communities. The more we learn about the Sound, the more we will grow to respect it and will want to protect its resources. As a source of livelihood, nourishment and recreation for many in Connecticut, New York, and elsewhere, it is crucial we treat it well."

This past June, the House passed $10 million in federal funds for Long Island Sound stewardship and restoration programs, an increase of over $8.646 million from last year and $9.533 million from the President's budget request.

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