

SOUND OUTLOOK

A NEWSLETTER OF THE CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION
EXPLORING LONG ISLAND SOUND – ISSUES AND OPPORTUNITIES

Long Island Sound 2003 Agreement Signed

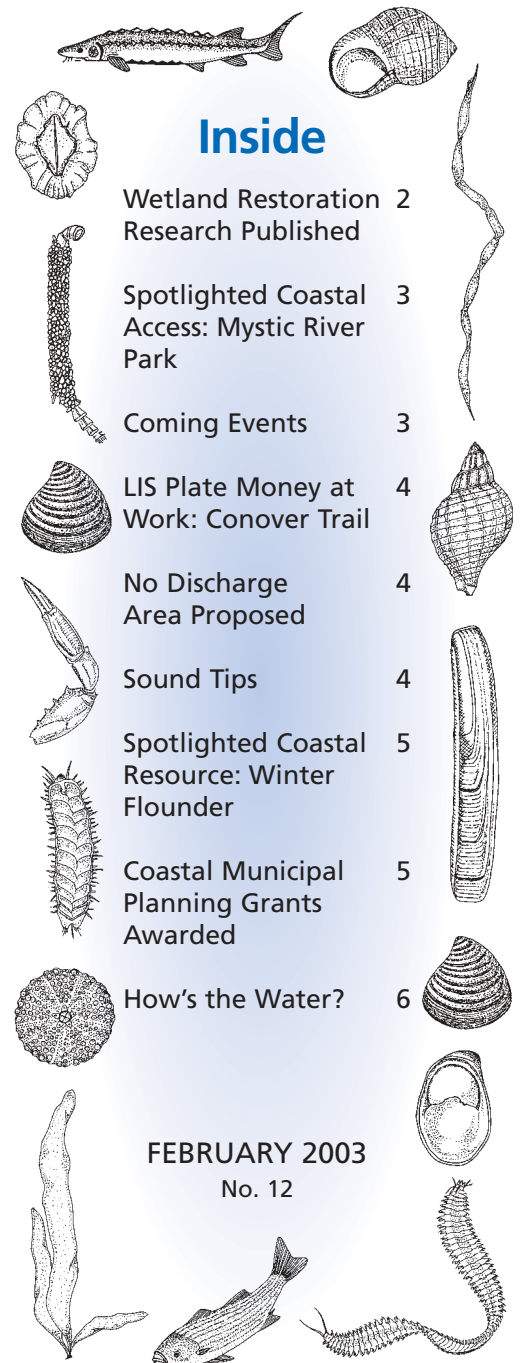
The Long Island Sound 2003 Agreement was signed on December 4th, 2002, setting forth an ambitious plan to restore the health of Long Island Sound by 2014. Meeting at the Maritime Aquarium at Norwalk, the Commissioners of the Connecticut Department of Environmental Protection and the New York Department of Environmental Conservation and the regional Administrators of the U.S. Environmental Protection Agency (EPA) approved 30 new goals for restoring the Sound. The agreement also includes \$2 million in new EPA funding to each of the states for Sound-related projects.

The new agreement builds upon the objectives of the Long Island Sound Study's (LISS) Comprehensive Conservation and Management Plan, approved by the states and EPA in 1994. It includes target goals and time frames for open space acquisition, as well as creation of a Long Island Sound Stewardship System which would potentially establish a series of ecological and public access sites throughout the Sound.

The agreement calls for a 10% reduction by 2010 of the acreage closed year-round to shellfishing compared to 2000 levels, and for the elimination by 2010 of all chronic bathing beach closures in Long Island Sound due to bacterial pollution. Chronic closures are bathing areas closed for at least three days per year in three out of five years. The agreement also calls for the nomination in 2003 of the Pawcatuck and Mystic Rivers in Connecticut and all Long Island Sound embayments in New York as federal No Discharge Areas, where waste discharges from boats would be illegal (see page 4), and for the mapping by 2003 of all areas in the Sound that support eelgrass, an important habitat for key fish and shellfish species.

These new initiatives will expand upon the ongoing work of the LISS. To date, the states have achieved 26% of the long-term goal for reducing nitrogen loadings to Long Island Sound, thus reducing the potential for hypoxia in the western Sound. Since 1998, 465 acres of coastal habitat and 43 miles of anadromous fish passage have been restored, marking significant progress toward the LISS goals of restoring 2,000 acres and 100 miles of riverine habitat, respectively, by 2008. The Study has created a forum for public involvement by establishing a Citizens Advisory Committee and a Small Grants Program, and has successfully forged partnerships between federal, state, and local agencies, and citizen and environmental groups, to restore and protect the Sound.

For more information about the Long Island Sound 2003 Agreement, please contact Mark Parker of the DEP Bureau of Water Management at 860-424-3276 or by e-mail at mark.parker@po.state.ct.us.



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Connecticut Wetland Restoration Research Published

Appearing in the September 2002 volume of the scientific journal *Restoration Ecology* is an article entitled “Salt Marsh Restoration in Connecticut: 20 Years of Science and Management,” authored by scientists at Connecticut College and Ron Rozsa of the DEP Office of Long Island Sound Programs. The article chronicles DEP’s systematic restoration, begun in 1980, of salt marshes degraded by man’s alteration or elimination of tidal flow. It provides evidence that restoration of tidal exchange through the removal or modification of tide gates and other control structures, and the re-opening of restricted tidal channels, have enabled these wetlands to become healthy and self-maintaining ecosystems similar to existing healthy salt marshes.

As described in the article, long-term scientific investigations by Connecticut College scientists have demonstrated the success of the state’s efforts. They have shown that functions such as tidal flooding, aeration of water, availability of spawning habitat, and removal of nonpoint source pollutants do return to restored wetlands, as do native salt marsh vegetation, invertebrates, fish and birds, albeit at different rates. For example, the non-native invasive form of common reed (*Phragmites australis*), which occupies low-elevation marshes that are flooded daily, often gives way to native salt marsh vegetation in 5 years, whereas at higher elevations, the restoration process typically takes 10 to 20 years. Similarly, marsh invertebrates, including amphipods like the banded

marsh hopper, reestablish in about 5 years, while populations of the salt marsh snail resemble those of adjacent healthy or reference marshes only after approximately 20 years. As wetlands dominated by common reed revert to salt marsh plants and shallow water pools, marsh specialists such as saltmarsh sharp-tailed sparrow, seaside sparrow and willet return, as do waterfowl, wading birds and shorebirds.

The report concludes that, “returning tidal action will set degraded marshes on trajectories that will restore ecological attributes and functions.” For more information on tidal wetlands and the DEP’s wetland restoration programs, contact Ron Rozsa at 860-424-3034 or by email at ron.rozsa@po.state.ct.us.



DEP staff installing an aluminum culvert in a dike at Impoundment IV at the Barn Island Wildlife Management Area, Stonington, to restore tidal flow.



Tide gates, once used to drain a wetland, are managed (opened) to restore tidal flow to the extent necessary to restore an ecosystem.



Reference monitoring stake in Hammock River wetlands, Clinton, records the height reduction of common reed over time. The topmost mark shows the height of common reed before restoration. The second, third and fourth marks indicate the height at the end of the growing season in 1985, 1986 and 1987 respectively. Photo (1988) shows the replacement of common reed by salt-marsh cordgrass (*Spartina alterniflora*).



The same location 6 years later showing the further displacement of common reed by *Spartina*. The reed that remains is stunted and growing on the elevated microlevee at the creek edge.

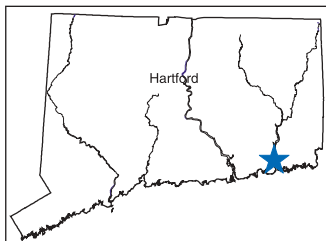
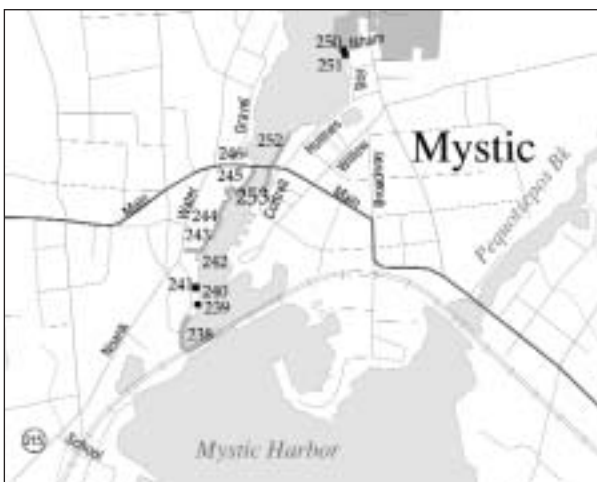
SPOTLIGHTED Coastal Access: Mystic River Park

Got the winter blues? Then we have just the place for you! Downtown Mystic is a great place to take the family for an off-season stroll along Main Street, with its shops and restaurants, as well as a refreshing walk along the Mystic River. Mystic River Park (site #253 in the *Connecticut Coastal Access Guide*), which has become a destination for those who desire a break from the hustle and bustle of shopping and dining, is conveniently located on the river adjacent to the historic Mystic drawbridge.

In 1993, the Mystic Fire District had the vision to reconnect downtown Mystic to the River by tearing down the former Cottrell Lumber Yard's old sheds and creating an open park with landscaping and a public boardwalk. There is no fee to enter or use the park and its facilities, including the boardwalk with its sitting and fishing areas and dinghy dock for small boats.

Many enhancements have been added to the park since it was opened. Along the boardwalk are illustrated interpretive signs designed to inform the public about the history and natural resources of the Mystic River. The restrooms display educational signs about nitrogen and its impacts on rivers and Long Island Sound. The park has even added a new heated public restroom facility. Grant funds from the sale of Long Island Sound license plates contributed to the creation of the park and many of the subsequent enhancements.

The Mystic River Park has received visitors from all over the world, and has become a favorite destination for Connecticut residents as well. So take a break and enjoy a stroll along the river! For more information, contact the Mystic River Park Office at 860-572-7244.



Mystic River Park's attractive boardwalk.

**April 22
Is Earth Day!**
List your Earth Day event on the DEP website. Contact Tom Ouellette at 860-424-3034 for information.

If you did not receive this issue of *Sound Outlook* in the mail and would like to be placed on the mailing list, please send your name and address to: *Sound Outlook*, Connecticut DEP, Office of Long Island Sound Programs, 79 Elm Street, Hartford, CT 06106-5127; or e-mail your address to laurie.valente@po.state.ct.us. View *Sound Outlook* online at www.dep.state.ct.us/olispsoundout/soundout.htm.

LOOK OUT for upcoming events!!

Connecticut Audubon Coastal Center at Milford Point Call 203-878-7440 for times, cost and registration for the following events:

FAMILY AND YOUTH PROGRAMS

Winter Ducks of Milford Point

Sat., Feb. 1 – Learn to identify common species.

Salt Water Fly Tying for Youths

(ages 10-14)

Sat., Feb. 15 – Educational workshop led by fishermen and fly tiers.

Seals along the Shore (ages 10 and older)

Sun., Mar. 2 – Learn when and why seals visit Long Island Sound.

NATURE WALKS

Saturday Morning Birdwalks

Feb. 8, Mar. 8 – Observe winter waterfowl and other coastal birdlife.

Nature Springs Eternal (ages 7 and older)

Sat., Mar. 22 – Observe Spring animal and plant life at Milford Point.

Norwalk Maritime Aquarium Programs

Call 203-852-0700, ext. 2206 for times, cost and registration for the following events:

WINTER CREATURE CRUISES

Feb. – Mar. – View seals, waterfowl and other LIS wildlife

WEEKEND MARINE LIFE STUDY CRUISES

Beginning in May – Collect marine life in LIS; learn aquatic sampling methods.

March – Migrating osprey return to Connecticut.

Long Island Sound License Plate Program

Wed., Mar. 12 (4:30 pm) – Deadline for submission of grant applications. Call Kate Brown at 860-424-3034 for information.

April – Striped bass migrate north to Connecticut waters.

Tues., April 22 – Earth Day

DEP Educator Workshop (grades 4-8)

WET & WILD ON LONG ISLAND SOUND

Long Island Sound in the Classroom

Fri., Apr. 4 – Call 203-734-2513 for times, cost and registration.

Fri., May 23 – Long Island Sound Day

Please be sure and check the Calendar of Events listed in DEP's website: www.dep.state.ct.us

Putting Your LIS Plate Money To Work

Anne Conover Nature Trail Opens

The Anne Conover Nature Education Trail at the Guilford Salt Meadows Sanctuary was dedicated by representatives of DEP and the National Audubon Society in October 2002. The mile-long walking trail, made possible by a \$12,500.00 public access grant from the Long Island Sound Fund (the License Plate Program), winds through the sanctuary's coastal habitat. The sanctuary, which consists of 235 acres of tidal wetlands, was established in 1964 when Anne Conover, a pioneering conservationist, donated a portion of these tidal wetlands to the National Audubon Society and persuaded several of her neighbors to do the same.

The sanctuary is located along the East River, and supports bird species such as the saltmarsh sharp-tailed sparrow and

seaside sparrow. Ongoing monitoring of these important breeding populations at the sanctuary by the University of Connecticut is supported in part by License Plate Program research funds.

The access grant funds were used to create and install fourteen illustrated interpretive signs along the new trail. The signs include information about the East River watershed and tidal wetlands, the forest edge and maturing forests, and the wildlife that can be found at the sanctuary. The addition of these educational signs clearly enhances the public access opportunities provided at the sanctuary.

For directions or more information about the sanctuary, contact Fred Hill III, Warden, at 203-458-2582 or by email at fhill@audubon.org, or visit the National Audubon website at www.audubon.org.

Purchase of an LIS License Plate supports the LIS Fund



As of November 30, 2002:

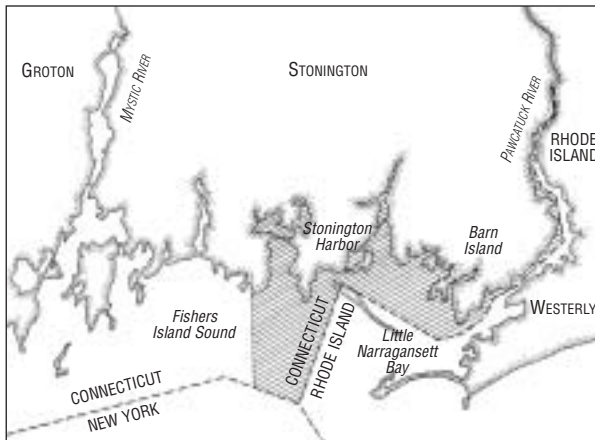
- Plates sold: 118,079
- Funds raised: Over \$4 million
- Projects funded: 227

The LIS Fund supports projects in the areas of education, public access to the shoreline, habitat restoration, and research.

For information on ordering a Long Island Sound license plate, call 1-800-CT-SOUND.

No Discharge Area Proposed

Most boaters in Connecticut honor the goal of the state's Clean Vessel Act Program to "Keep Our Waters Clean" by using sewage holding tanks and emptying them at designated pumpout stations. DEP



Proposed No Discharge Area.

is working to further improve water quality in Long Island Sound by eliminating all remaining discharges of sewage from boats. An application recently filed by the Office of Long Island Sound Programs with the U. S. Environmental Protection Agency (EPA) proposes to designate the Connecticut portions of the Pawcatuck River, Little Narragansett Bay and Fishers Island Sound, and all of Stonington Harbor, as a No Discharge Area (NDA) (see map). This designation will complement the efforts of the State of Rhode Island, which has received EPA designation of all its coastal waters as a NDA. DEP

expects to file additional applications with EPA, hoping ultimately to make all of Long Island Sound a No Discharge Area.

Currently, the discharge of untreated sewage from boats into all

Connecticut waters is prohibited, while properly treated sewage from Type I and Type II Marine Sanitation Devices (MSDs) may be legally discharged in coastal waters and navigable rivers that have not been designated as NDAs. However, once EPA approves DEP's application, the discharge from boats of any sewage, whether treated or untreated, will be prohibited in the NDA. All vessels will be required to use portable marine toilets and holding tanks, and to pump them out at approved pumpout stations.

Establishing NDAs meets the goals of the Long Island Sound Study's Comprehensive Conservation and

Sound Tips

Looking for a Pumpout Station?

Boating season will soon be here. If you are a boater, you can do your part to keep Long Island Sound clean by using the many pumpout stations and mobile pumpout boats located all along the Connecticut shoreline. A directory and map of pumpout stations and boats can be found on the DEP website at www.dep.state.ct.us/olisp/cva/cva.htm, along with a variety of information about Connecticut's Clean Vessel Act Program.

This information is also printed in a number of annual publications available at different locations. A brochure titled *Connecticut Pumpout Facilities Directory*, also containing a map and list of sites, is updated annually and is available at DEP Marine Headquarters at Ferry Landing State Park in Old Lyme and at marinas throughout the state. The same map and site list is printed in DEP's annual *Connecticut Boater's Guide* and in Maptech's *Embassy Guides, Long Island Sound*, which is scheduled to be reprinted this year.

For further information about Connecticut's Clean Vessel Act Program contact Rick Huntley at 860-424-3034 or by email at rick.huntley@po.state.ct.us.

Management Plan and of Connecticut's Coastal Nonpoint Source Pollution Control Program to reduce the entry of human pathogens and anthropogenic nutrients into Long Island Sound.

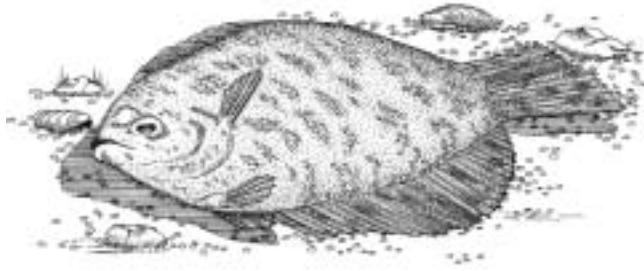
For further information about the Clean Vessel Act Program or No Discharge Areas, contact Rick Huntley at (860) 424-3034 or by email at rick.huntley@po.state.ct.us.

SPOTLIGHTED Coastal Resource: Winter Flounder

Winter flounder (*Pseudopleuronectes americanus*) is one of many species dependent on Long Island Sound for spawning and nursery grounds. As their name implies, these flatfish are most common in the Sound in winter, spawning in shallow areas such as harbors and river mouths. Large older fish leave the Sound in the summer months while young flounder stay all year to feed. This species can live to be 15 years old, ranging up to 20 inches in length and 5 pounds in weight.

Winter flounder is among the top five species sought by both sport and commercial fishermen in Connecticut. While flounder stocks have been overfished throughout their range from Delaware to the Canadian Maritimes, recent regulations have significantly reduced harvest to help rebuild flounder populations.

The health of Connecticut's harbors, bays, and rivers directly affects the reproductive success of the Sound's flounder population, since flounder form localized spawning groups, each having a high affinity to a specific geographic



Winter flounder (*Pseudopleuronectes americanus*).

location. Such fidelity makes them particularly vulnerable to localized depletion resulting from the alteration of inshore areas by activities such as dredging and filling. Sediment dredging has been shown to smother and kill winter flounder eggs and newly hatched larvae. For this reason, DEP restricts dredging during the spawning season in known production areas.

The DEP Marine Fisheries Division conducts a Sound-wide survey every spring and fall to monitor the abundance of winter flounder as well as that of 60 other species of finfish and invertebrates. Although total abundance of winter flounder has been low since

1992, numbers of older mature fish have increased since 1996 while numbers of young immature fish have decreased substantially. These divergent trends suggest that the survival of flounder in the first few years of life has decreased, while the survival of older flounder has increased, probably because of stricter regulation of the fishery. Several factors could be responsible for the loss of immature flounder.

Predators such as striped bass and seals have increased in abundance in the Sound. Since 1986, winter temperatures have been above a 122-year average, minimizing the flounders' competitive advantage of thriving at lower temperatures than other fish can tolerate. Given such environmental changes, it is evident that restoring winter flounder to its former abundance in the Sound will require minimizing unnecessary mortality risks related to human activities.

For more information about winter flounder, contact Penny Howell or Deb Pacileo, DEP Marine Fisheries, at 860-434-6043 or by e-mail at penny.howell@po.state.ct.us or deb.pacileo@po.state.ct.us.

Coastal Municipal Planning Grants Awarded

The strength of Connecticut's coastal management program is, in significant part, a result of the effective partnerships developed between DEP's Office of Long Island Sound Programs (OLISP) and the state's 36 coastal municipalities. In the early 1980s, pass-through federal grants helped towns to fund the development of municipal coastal plans, harbor management plans, training materials, and other building blocks necessary to assist local agencies in undertaking their new responsibilities under the Connecticut Coastal Management Act (CCMA). However, because of funding constraints in subsequent decades, many local agencies have had to deal with emerging issues such as stormwater management, the cumulative impacts of docks and other waterfront structures, and urban harbor redevelopment on an ad hoc basis rather than through updated

planning processes that would otherwise have derived from additional grant assistance.

In 2002, for the first time in many years, OLISP received additional funding from NOAA's Office of Ocean and Coastal Resource Management to help fill the coastal planning gap at the local level. Following a competitive award process, OLISP has granted \$250,000 for development and implementation of the following municipal projects:

- Chester – an update of the town's Harbor Management Plan to address dock impacts;
- Connecticut River Estuary Regional Planning Agency – a regional general plan for managing docks;
- Connecticut River Gateway Commission – the promotion of new Gateway development standards;
- Greenwich – methodologies to control

upstream stormwater pollution;

- Greenwich – standards for waterfront public access sites;
- New Haven – a new Harbor Management Plan;
- Norwich – an urban waterfront redevelopment study;
- Westbrook – an on-site wastewater management plan for the town's coastal area;
- West Haven, Westbrook, and Stratford – updates of Municipal Coastal Programs or the coastal portions of Plans of Conservation and Development.

OLISP staff will work with the grant recipients to complete these projects, helping them to balance resource protection with appropriate waterfront development. For more information about the municipal grant award process, contact David Blatt at 860-424-3034 or by email at david.blatt@po.state.ct.us.



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How's the Water?

We conclude our series on metals in Long Island Sound with a look at zinc. Zinc occurs naturally in coastal waters at concentrations from 0.5 to 1.0 parts per billion (ppb), much lower than the Connecticut Water Quality Standard for dissolved zinc of 81 ppb.

Zinc is needed by all organisms. It plays a role in enzyme systems, nerve transmission, and genetic development, in which it supports the structure of DNA. At the same time, however, excessive concentrations of the metal can adversely affect animal behavior and damage organ systems. For example, minnows subjected to high zinc levels experience mobility problems and gill damage, resulting in death.

Zinc enters the environment both naturally and from anthropogenic sources. Historically, use of zinc in brass manufacturing and galvanized products began during the industrial revolution, and increased through the 1960s. Since the 1970s, however, growing environmental concerns have led to progressive reductions in zinc emissions to air and water. Most of the zinc present in surface waters is ultimately deposited in the sediments of rivers and estuaries where it binds to inorganic and organic matter, reducing its availability to living organisms.

Today the primary sources of zinc contamination in the marine environment are nonpoint sources such as agricultural runoff (high levels of zinc are used in fertilizers) and stormwater runoff from highways and roads (zinc is present in tires, oil additives, metal coatings, and grease compounds). The presence of zinc in the sediments of Long Island Sound demonstrates the historic influence of such human activities. EPA's National Coastal Assessment sampling from the year 2000 showed sediment zinc levels averaging from 51 parts per million (ppm) in the Eastern Basin to 166 ppm in the Western Sound (closer to greater

population areas), reflecting a pattern of increased contamination from east to west. Today, zinc emissions from anthropogenic point sources to surface waters have been reduced significantly due to improvements in industrial processes and more efficient emission control technology. 

Visit the DEP website at www.dep.state.ct.us.

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