



SOUND OUTLOOK

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

Coastal Stewardship: A Vital Challenge for Connecticut

As readers of *Sound Outlook* know, it is not solely the responsibility of government agencies to “clean up the Sound.” Individually and cumulatively, private actions can affect the health of Long Island Sound and its resources. As major industrial and municipal pollution discharges are being largely brought under control, additional improvements can best be achieved by creating a stewardship ethic among the public. Individual acts of stewardship such as avoiding or reducing the use of lawn and garden chemicals, maintaining vegetated buffers, refraining from dumping or discharging waste products, and minimizing automobile use can all help protect the Sound. While many individual acts do add up, will this be enough? Pressures on the Long Island Sound ecosystem continue to increase, due in part to sprawling development in tributary watersheds and multiple competing land uses. Maintaining a more environment-friendly lifestyle at the same time generally requires an additional commitment of time, effort and often money that many people are unable to make.

One way to make real progress is to focus on a second dimension of stewardship by creating a constituency for more active management. We can encourage public officials to enact the stronger measures and stricter controls necessary to change patterns of transportation, development, and land and water use that will result in preservation of the Sound for future generations. With these issues in mind, the U.S. Commission on Ocean Policy recently emphasized focusing on education as a means to promote understanding and lifelong learning about ocean and coastal issues, and to enhance awareness and concern among the public. (See www.oceancommission.gov). Unfortunately, while the Commission is calling for additional resources and governmental efforts to understand and protect coastal and ocean resources, budget constraints at the federal, state and local levels are dimming the prospects for new initiatives. Under these challenging circumstances, Connecticut’s citizens can help to maintain and improve the quality of Long Island Sound by focusing on efforts to build a strong stewardship ethic in both policy and behavior. 🌊

The theme of this issue of *Sound Outlook* is
Long Island Sound: An Educational Resource.
 The following pages describe a range of educational programs available to Connecticut residents and others wishing to learn more about our coastal resources. We encourage readers to take advantage of these opportunities and to join together as stewards of the Sound.

		
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Farewell, Commissioner Rocque; Welcome, Commissioner McCarthy


An era came to an end on September 30, 2004 when DEP Commissioner Arthur J. Rocque, Jr. retired from state service. For 33 years, Mr. Rocque was one of Connecticut's foremost champions of Long Island Sound, having served for nearly three decades as the Director of the Office of Long Island Sound Programs and its predecessors, and for more than seven years as Commissioner.

Mr. Rocque personally led the effort to develop Connecticut's Coastal Management Program, which was formally established in 1980. Under his direction, DEP staff undertook several initiatives leading to the restoration of more than 1,500 acres of degraded tidal wetlands and vital coastal habitats. He oversaw the addition of approximately 12

miles of new coastal public access sites, the establishment of new coastal state parks in Milford and New London, the recent expansion of Barn Island Wildlife Management Area in Stonington, and the creation of both the Long Island Sound Research Fund and the Long Island Sound License Plate Program. On his watch, the Department continued a variety of initiatives under the Long Island Sound Study aimed at upgrading sewage treatment facilities and reducing nitrogen pollution in the Sound.

In 1994 Mr. Rocque received the prestigious Walter B. Jones Award from the National Oceanic and Atmospheric Administration for his national leadership in coastal management, including his chairmanship of the Coastal States Organization. Commissioner Rocque's

contributions to coastal management in Connecticut for the benefit of all of our state's citizens will be long remembered, and we wish him well.

We are also pleased to welcome our new commissioner, Gina McCarthy, former Deputy Secretary of Operations at the Massachusetts Governor's Office for Commonwealth Development. In that and previous positions, Ms. McCarthy focused on issues such as smart growth, climate protection, pollution prevention and environmental clean-ups. She has also been involved in projects as diverse as Logan Airport expansion and efforts to protect Boston Harbor. With this experience, we look forward to working with Commissioner McCarthy toward the continued protection of Long Island Sound in years to come. 

Surfing the Sound:


Visit the Long Island Sound Resource Center's New Website

A new source of information about Long Island Sound is available on the Internet. The Long Island Sound Resource Center launched a new web site in May 2004, with the goal of providing web access to information related to the Sound through a variety of tools. The initial version of the web site includes a searchable bibliography and a directory of information resources. In the future, the site will include an Internet mapping application, synopses of different fields of research, and a data catalogue. The website's address is www.lisrc.uconn.edu.

The Long Island Sound Resource Center bibliography contains over two thousand entries including documents in the Long Island Sound Foundation Collection and research funded by the DEP's Long Island Sound Research Fund. The bibliography can be searched in several ways. The user can perform a text-based search on location, subject, author, or title. An advanced search capability allows the user to inquire based on a combination of fields. The user may also browse

the bibliography by location, using maps.

A synopsis of geologic research conducted in the Sound over the past twenty years is currently being prepared for publication on the website. It will describe the research methods used, data collected, and the resulting geologic interpretations. The data collected will be accessible on the Internet, and the user will be able to see images of bottom sediment cores, seismic records, and side-scan sonar. This synopsis of geological research is the first in what is planned to be a series of synopses about the Sound.


The Long Island Sound Resource Center began in 1988 as a partnership between the Connecticut Department of Environmental Protection (DEP) and the University of Connecticut (UConn) Marine Sciences Institute. It is a central clearinghouse to collect, store and maintain information related to the Sound. The Resource Center is located at the UConn Avery Point Campus in Groton, Connecticut. The UConn Avery Point Library is home to the Long Island Sound Foundation Collection. 

Coastal News:

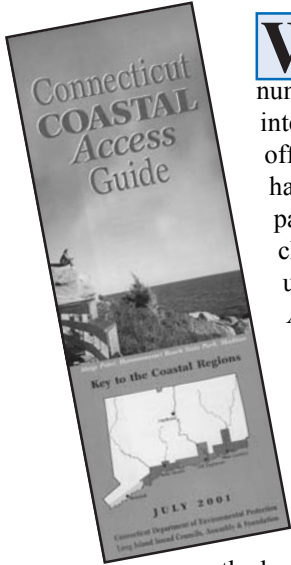
Town of Old Saybrook Recognized for Innovative Coastal Access Program

The Town of Old Saybrook recently received the Connecticut Chapter of the American Planning Association's 2004 *Implementation Award* in recognition of its coastal access improvement program. The program includes an inventory of potential coastal public access areas along Town rights-of-way that end at coastal waters, design recommendations for use by the public, and construction of public access facilities funded in part by the LIS License Plate Program. Coastal municipalities interested in replicating Old Saybrook's success are encouraged to contact Christine Nelson, Old Saybrook Town Planner, at cnelson@town.old-saybrook.ct.us.

Two More Connecticut Clean Marinas Recognized

In September 2004, DEP recognized Dodson Boatyard in Stonington and Milford Landing Marina in Milford as Connecticut's 4th and 5th certified Clean Marinas. Congratulations to both facilities for their continued environmental efforts! For more information about Connecticut's Clean Marina Program, call Elke Sutt at 860-424-3034 or visit www.dep.state.ct.us/olisp/cleanmarina. 

SPOTLIGHTED Coastal Access: Educational Shoreline Tour



Would you like to learn more about the things you see as you drive along the Connecticut shore? There are a number of coastal public access sites that feature educational or interpretive signs, including the six listed below. All of these sites offer scenic views of the surrounding coastal environment. Many have walkways and picnic facilities, and all are either fully or partially handicapped-accessible and, unless noted, free of charge. Directions to all of the sites, and descriptions of other uses and amenities, can be found on the *Connecticut Coastal Access Guide* website, www.lisrc.uconn.edu/coastalaccess/index.asp. Individual site pages can be printed from the website for use while exploring the shore.

Mystic River Park, Stonington

Located along a spacious boardwalk overlooking the Mystic waterfront are two illustrated interpretive signs describing the Mystic River Estuary and Mystic River Fish Life.

Take time as you study these attractive installations to watch the boats navigating the river, many of which are traveling to or from nearby Mystic Seaport.

Fort Saybrook, Old Saybrook

Viewing stations along a winding boardwalk and observation platform feature educational signs that highlight the natural and cultural history of the Old Saybrook coast. Learn about lighthouses, shipping and fishing on the Connecticut River, and explorer Adriaen Block's voyage upriver to Hartford.

Fort Nathan Hale Park, New Haven

Informational signs tell about the role this seaside fortress played during three wars that shaped American history. See *Sound Outlook* Vol. 17, for more information about this unique facility overlooking New Haven Harbor.

Norwalk Mill Pond, Norwalk

Read about the industrial history of this scenic tidal millpond, and the recent cooperative efforts of the city and state to restore its water quality, habitat and native wildlife.

Calf Pasture Beach, Norwalk

A walking trail overlooking Long Island Sound features educational signs that tell about the history, uses and living resources of the Norwalk shore and Norwalk Islands. Learn about Norwalk's first Lifeguard Corps, the British Invasion of 1779, the harvesting of food from the sea, and much more. Parking fees are charged during the summer season.

Cove Island Park, Stamford

A series of 15 signs beside the Long Island Sound Interpretive Habitat Trail at Cove Island Park identify adjacent habitats such as salt marsh, rocky intertidal, sandy beach and mud flat, and the animals and plants that live there. Go to www.cityofstamford.org/CashieringAndPermitDepartment/BeachStickers.htm for information about parking fees and payment procedures. 🐾



Fort Saybrook, Old Saybrook.



Calf Pasture Beach, Norwalk.



Cove Island Park, Stamford.

LOOK OUT for upcoming events!!

DEP Environmental Educator Workshops

Kellogg Environmental Center
500 Hawthorne Ave., Derby, CT
Call 203-734-2513 for information.

Freshwater and Marine Plankton

Fri., Mar. 18, Teachers grades 9-12
Students learn techniques for sampling, identification and analysis of plankton.

WOW! Wonders of Wetlands

Fri., Apr. 15, Teachers grades K-8
Broad science curriculum and hands-on learning, in field and classroom.

Mystic Marine Aquarium

55 Coogan Blvd. Mystic, CT
Call 860-572-5955, X520 for info., registration.

Marine Mammal Research Workshop

Sat., Mar. 5, Teachers grades K-12
Marine mammal immunology, hematology and disease diagnostics.

Vacation Mini-Camps

Feb. and Apr. school vacations
Experience water, animals and habitats.

Connecticut Audubon Coastal Center

Milford Point, Milford, CT
Call 203-878-7440 for info. and registration.

Winter Guests

Sat., Feb. 12
See what makes southern New England the winter destination for many animals.

Ducks and Other Waterfowl

Sat., Feb. 26
Indoor slide presentation followed by a bird walk. Advance registration required.

March: Migrating osprey return to Connecticut

Long Is. Sound License Plate Program

Wed., Mar. 16, 4:30 PM
Deadline for submission of grant applications.

Call Kate Brown, 860-424-3034 for info.

April: Striped bass migrate north to Connecticut waters.

Please be sure to check the Calendar of Events listed on DEP's website:

www.dep.state.ct.us

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 email your address to laurie.valente@po.state.ct.us.

Putting Your Money to Work: Long Island Sound Environmental Education Resources

The Long Island Sound Fund (License Plate Program) and Long Island Sound Study (National Estuary Program) encourage and fund projects and activities to raise public awareness about the importance of protecting Long Island Sound. Both of these programs provide grants to develop curricula and learning tools to instill in the public, and in young people in particular, a sense of the Sound's contributions to our quality of life. Examples of projects available for use by educators include:

A Model Oceanographic Field Study: Investigating the Marine Environment

– This CD contains investigative techniques for exploring the Sound's marine environment, based on the work of educators at Project Oceanology in Groton, CT. Call 860-445-9007, email oceanology@aol.com, or visit www.oceanology.org.

Citizen Water Quality Monitoring Resource Center – The Center assists citizens groups with water quality monitoring, providing both equipment and training. The Center is located in Project Oceanology's marine laboratory/classroom building. See contact information for Project Oceanology above.

Center for Education and Research at Outer Island – Located in the Thimble Islands offshore of Branford, CT, the Center provides education and research opportunities in marine biology, ornithology, coastal geology, and related disciplines. The Center is available for grade school and college level study through programs offered by the Connecticut State University System. To arrange a class or educational group visit, call 203-392-6265, email CEROI@www.ctstateu.edu or visit www.ctstateu.edu/~ceroi/ceroi.htm.

Long Island Sound Treasure Chest – The Treasure Chest may be borrowed from The Maritime Aquarium at Norwalk by teachers and educators. It overflows with learning materials on the Sound and its watershed, including natural artifacts, posters, photographs, published curriculum, children's books, craft ideas, videos, a teacher's guide, and videotaped "workshop". To reserve the Treasure Chest, call 203-852-0700, ext. 2234, or visit The Maritime Aquarium's website at www.maritimeaquarium.org/group_visits/treasure_chest.html for more information.

Teacher Resource Guide to Environmental Educational Resources

– This resource guide, assembled by the Housatonic Valley Association, lists environmental education resources, programs and activities keyed to the relevant objectives of the Connecticut Academic Performance Test (CAPT). Contact the Association at 860-672-6678 or by email at hvact@optonline.net or visit www.hvathewatershedgroup.org.

A Video Tour of the Habitats of Outer Island – Video describes the natural habitats of Outer Island and their importance to Long Island Sound. Copies are available at many schools and libraries. The video may be ordered from Vince Breslin at 203-392-6602 or by email at breslinv1@southernct.edu.

Long Island Sound Resource Program – The Children's Museum of Southeastern Connecticut offers a Long Island Sound Curriculum, teaching collection, exhibit, summer camps, teacher workshops, and a traveling program. The Museum is located at 409 Main Street, Niantic, CT. Call 860-691-1111 or email cmsect@aol.com.

Where the City Meets the Sea – An educational program for Hartford's inner city youth and teachers developed by the Mystic Aquarium Education Center in Hartford. The Center is located at 942 Main Street, Suite 208, Hartford, CT. Call 860-543-8464 or visit www.mysticaquarium.org/divein/hec/programs.asp.

For additional information about Long Island Sound grant programs contact Kate Brown at 860-424-3034, kate.brown@po.state.ct.us, or Mark Parker at 860-424-3276, mark.parker@po.state.ct.us.

Purchase of an LIS License Plate Supports the LIS Fund



As of November 30, 2004:

- Plates sold: 126,259
- Funds raised: Over \$4.3 million
- Projects funded: 246

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.

Sound Tips

Marine Studies Programs

Below is a list of colleges and universities in Connecticut that offer degree programs or course concentrations in marine studies:

University of Connecticut, Avery Point Campus, Groton

B.S. in Coastal Studies with Minors in Marine Biology and Oceanography; M.S. and Ph.D. in Oceanography
Coastal Studies program combines social and natural sciences. Facilities include new marine sciences building and laboratories, the 76-foot RV *Connecticut* and a fleet of small vessels.

University of New Haven, West Haven

B.S. in Marine Biology
Program offers preparation for resource management, environmental assessment and protection, biotechnology, and education related to estuarine, coastal, and marine environments.

University of Bridgeport, Bridgeport

B.A. in Biology, emphasis in Marine Biol.
Elective courses offered for students interested in future graduate or professional experience in marine biology.

Southern Connecticut State University, New Haven

B.S. in Biology with Concentration in Marine Biology/Aquatic Biology
Study Long Is. Sound resources and the environmental challenges they face.
B.A. in Liberal Studies with Minor in Marine Studies

Study the scientific, legal, historical, or seamanship aspects of the Sound. Program is suited to non-science majors.

Fairfield University, Fairfield

Minor in Marine Studies
Program is open to students of any major preparing for graduate programs in marine or environmental science.

Connecticut College, New London

Focus on Marine Biology
Students interested in marine biology may design a program within one of several life sciences majors that focuses on marine systems and marine biology.

Yale University, New Haven

Center for Coastal and Watershed Systems
Courses offered in coastal and estuarine ecology and marine science.

Mystic Seaport, Stonington

Williams College, Williamstown, MA
Williams-Mystic Maritime Studies Program
Interdisciplinary, hands-on study about the history, literature, policy and science of the sea.

SPOTLIGHTED Coastal Resource:

Long Island Sound - An Outdoor Classroom

An educational tool that has been used by schools for many years is the traditional field trip or outdoor field project. Connecticut schools are fortunate to have a precious resource at their back doors to use as an outdoor classroom – Long Island Sound! What better way to impress upon students the fundamentals of ecology and, in particular, the functions of estuarine ecosystems. Magnet schools and charter schools have also employed outdoor classroom techniques to teach students about the biology and chemistry of Long Island Sound, thus bringing to them practical and real life lessons about human impact on our environment. Near the coast, the Sound School in New Haven and the Bridgeport Regional Vocational Aquaculture School are using

LIS as their learning environment to provide vocational and technical education in marine trades, aquaculture and the marine technology and science industries to high school students.

Connecticut DEP's Center for Environmental Research Education has invested in Long Island Sound as an outdoor learning classroom for many of the same reasons. Students develop knowledge and skills in scientific sampling techniques, taxonomy of marine organisms, food chain dynamics, invasive species impacts, and water chemistry analysis. The Center offers classes on Salt Marsh Ecology and Long Island Sound Indicators and administers the Summer SEARCH program. In 1991, Summer SEARCH, which brings high

school students into the field, received a Roger Tory Peterson Award for its noteworthy program.

Many SEARCH students go on to college and pursue careers in environmental science. Former SEARCH participants have, for example, worked with endangered coral reefs in the South Pacific and wildlife in Africa. Some have found careers with environmental protection agencies and organizations across the country. The SEARCH program recently conducted studies of the rocky intertidal environment of Long Island Sound to assess native plant and animal species and new invasive species arrivals such as the Asian shore crab (*Hemigrapsus sanguineus*).

During the school year, other high school science classes have become involved in Long Island Sound outdoor classroom activities and assisted with the SEARCH invasive species project. Two state-administered grant programs (see page 4 of this issue) have forged many high school and elementary school partnerships with colleges and environmental organizations, providing outdoor educational experiences in and around Long Island Sound. For information on SEARCH and other programs contact the Center for Environmental Research Education at 203-734-2513 or visit www.dep.state.ct.us/educ/cere/index.htm.



DEP educator Alberto Mimo leads students in surveying beach profiles.



Students collect and count intertidal invertebrates.

Long Island Sound Research Conference

The biennial Long Island Sound Research Conference was held November 4-5, 2004 at the State University of New York at Stony Brook to present the results of recent research in and around Long Island Sound. Thirty research projects were reviewed, ranging from soft-bottom benthic habitat mapping, to bioaccumulation of methylmercury, to micro-zooplankton community analyses. A poster session displayed the results of nine research projects including mapping projects using remote sensing technology and multibeam bathymetric data. The conference was sponsored by Connecticut Sea Grant, New York Sea Grant, and the Long Island Sound Foundation.

The research discussed was funded through grants from several state and federal programs including Sea Grant and the Long Island Sound Study. Other research is being carried out with assistance from state and federal agencies including

the National Oceanic and Atmospheric Administration (NOAA) and the U. S. Geological Survey (USGS). For example, Judy Li of the DEP Water Bureau's Long Island Sound Water Quality Monitoring Program discussed a phytoplankton monitoring project, funded by the U. S. Environmental Protection Agency's National Coastal Assessment Program, in which high-performance liquid chromatography (HPLC) technology is being used to measure photo-pigment types that help differentiate major groups of phytoplankton in Long Island Sound. This new technology simplifies the DEP's phytoplankton monitoring, important to tracking the Sound's health.

The next Long Island Sound Research Conference will be held in Connecticut in 2006. For information on the Conference, call Sue McNamara of the Long Island Sound Foundation at 860-405-9166.



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Industry Update – Wastewater Treatment Plants

The efficient operation of sewage treatment plants (STPs) in Connecticut is vital to improving water quality in Long Island Sound, as well as the quality of life for all state residents. To promote better STP operation and management, the Connecticut DEP provides training for STP operators. In fact, the Sound itself serves as an important educational resource for the STP industry in Connecticut, helping to maintain the high water quality standards that have been achieved throughout the LIS watershed.

One focus of DEP's training, which is offered approximately every two years, is to optimize the removal of nitrogen from discharges to Long Island Sound to help alleviate the low dissolved oxygen conditions that harm the Sound's aquatic communities. To exemplify the relationship between good STP operation and the health of Long Island Sound, the training includes a module on the impacts of nutrient enrichment on Sound waters. For example, operators learn that elevated nitrogen discharges lead to excessive plant growth (algal blooms) that can, in turn, cause reductions in water quality, bad odors from decomposing algae, and depleted oxygen concentrations in bays with poor tidal flushing, thus adversely affecting fish life.

In 2004, training was conducted in Wallingford, sponsored by the Connecticut Water Pollution Abatement Association. A new *National Water Environment Federation Treatment Plant Upgrade Manual*, produced with input from DEP, was introduced at the workshop. The manual helps treatment plant operators to optimize their upgraded facility for better nitrogen removal.

DEP has offered these and other similar educational forums on Long Island Sound wastewater management needs for 20 years, addressing the emerging importance of incorporating nitrogen removal in regional STP management programs. Some municipalities have contributed to this effort by conducting research on new nitrogen removal methods at their treatment facilities. Other plants offer tours to students and teachers, educating them about STP functions and operations, and helping to reinforce the relationship between Connecticut's sewage discharges and everybody's resource - Long Island Sound. For more information about Connecticut's municipal facilities program contact William Hogan at 860-424-3753 or by email at william.hogan@po.state.ct.us.

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

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