



# SOUND OUTLOOK

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





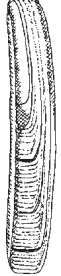





## How DEP Changes as the Environment Changes

**W**ater quality and living resources in Connecticut and Long Island Sound were relatively stable prior to European colonization and through the early 1800s. However, as settlement and industrialization increased along the coast, water quality and fisheries resources began to change for the worse. By 1887, concern about water pollution culminated in the legislative commissioning of a study to “investigate the subject of sewage disposal.” In 1925, the State Water Commission, a predecessor of DEP, was created in response to the recognition that our state’s surface waters had become increasingly polluted from sewage and industrial wastes.

As industrial development expanded and the state’s surface waters continued to degrade, it was clear that further changes in environmental management were needed. A 1966 report by the state-appointed Clean Water Task Force noted the deplorable condition of many rivers and harbors, and recommended dramatic restorative measures. With the passage of Connecticut’s Clean Water Act (1967), Tidal Wetlands Act (1970), Inland Wetlands and Watercourses Act (1972) and later, the Connecticut Coastal Management Act (1979), a new era of change in environmental management began. In 1971, the Connecticut Department of Environmental Protection (DEP) was created, combining diverse boards and commissions into a single agency to address specific environmental needs.

The Department developed many programs to address these needs, drawing on federal legislation and funding, such as the Federal Clean Water Act and Federal Water Pollution Control Act, which partially fund DEP’s point source and non-point source pollution and groundwater protection programs, as well as the state’s Clean Water Fund, which supports municipal sewage treatment plant upgrades. The federal Coastal Zone Management Act of 1972 authorized states to create coastal zone management programs with oversight and funding from the National Oceanic and Atmospheric Administration (NOAA). Connecticut’s Coastal Management Program was established in 1980 in response to the federal Act.

DEP has continued to reshape itself to address evolving environmental priorities and needed programmatic efficiencies. In the early 1990s, the agency was reorganized into bureaus, including the Bureau of Water Management with its component Planning and Standards, Permitting and Enforcement, and Inland Water Resources Divisions. Most recently, in March of this year, the Inland Water Resources and Planning and Standards Divisions were transitioned into the new Bureau of Water Protection and Land Reuse. They were joined by the Office of Long Island Sound Programs in recognition that restoring and preserving coastal areas is inextricably linked to terrestrial habitat and water quality, and by the Remediation Division in recognition that cleaning up contaminated properties and putting them back to reuse is a critical component of good land use planning. The priorities of this new Bureau will include strategies to help guide land use development decisions statewide in ways that preserve the state’s water resources. For more information about DEP’s programs and activities, visit [www.ct.gov/dep](http://www.ct.gov/dep).

			
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	<b>No. 22</b>		

This is a time of transition for Long Island Sound and all of Connecticut. We are witnessing changes in our climate and in the wildlife populations that frequent our coastal waters. We are presented not only with these new challenges, but with new opportunities for protecting our environment. The following articles document and describe some of those changes. As you read them, think about how these transitions affect you, and how you can help to make Long Island Sound a better and healthier place for all of us.

## Coastal Management Transitions


**T**his summer will mark not only another boating and beach season on Long Island Sound, but also a changing of the guard at Connecticut's Coastal Management Program, which is embodied within DEP's Office of Long Island Sound Programs (OLISP). OLISP's longtime Director, Charlie Evans, is retiring in July after thirty-one years of service to the Department of Environmental Protection, all within the Coastal Management Program. Indeed, Charlie was the first employee hired specifically for the brand-new program by its first Director, Arthur J. Rocque, Jr. Charlie was named Director in 1993 when Mr. Rocque moved on to become DEP Assistant Commissioner and later Commissioner.

Charlie's coastal management career actually started five years before the program's official federal approval in September 1980. He contributed to staff efforts that included 300 public meetings and several regional workshops, 20 public hearings and two major statutory enactments, with the Connecticut Coastal Management Act (CMA) in its present form becoming effective on January 1, 1980. Since then, Charlie served as a coastal planner and Assistant Director before becoming Director. He received a Departmental Distinguished Service Award in 1994. Charlie is known for his encyclopedic knowledge of Department administrative processes, as well as of state and federal coastal management policies and programs. OLISP staff will miss his breadth and depth of knowledge, wise judgment, and calm, steady leadership and support. We wish him well in his future endeavors.

As we go to press, a search is underway for a new Director of OLISP. On an organizational level, the new Director will lead the Coastal Management Program as a Division of the new Bureau of Water Protection and Land Reuse (formerly the Bureau of Water Management). OLISP was, in fact, a part of the Water Bureau during the late 1980s and early 1990s, and our re-integration is expected to be smooth and seamless, offering a higher level of administrative support and coordination to our coastal management efforts. In practical terms, the new arrangement formalizes a long and productive collaboration between OLISP and Bureau of Water Protection and Land Reuse staff that, among other things, has brought you *Sound Outlook*. Our coordination and cooperation will now be further enhanced on Long Island Sound issues, particularly



*OLISP Director Charlie Evans*

regarding non-point source pollution control, implementation of the State's Water Quality Standards, and administration of the Long Island Sound Study. We firmly believe this new arrangement can only herald future success in protecting the resources of Long Island Sound. 


## Climate Change and Long Island Sound: The Heat is On

**T**he title above served as the theme of the 16<sup>th</sup> Annual Long Island Sound Summit, held in Bridgeport this past April 8<sup>th</sup>. More than 170 citizens from Connecticut and New York, including federal, state and local agency staff, environmental groups, researchers, teachers, students, and the press gathered to hear about the changes the Sound is experiencing, how they affect living resources and impact coastal development, and what can be done to address those transitions.

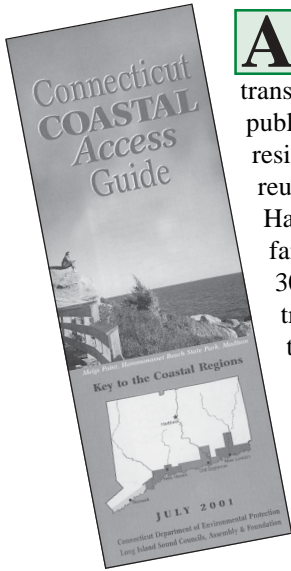
The first speaker of the day was DEP Commissioner Gina McCarthy. She shared data showing that Long Island Sound water temperatures and water levels are rising. "There's no question there's a direct impact on aquatic life that we're already seeing," she said. Commissioner McCarthy encouraged the Summit participants to have

a "hopeful" outlook on the challenges we face in the coming changes to LIS due to global warming. She reminded participants that we can minimize regional impacts of climate change by reducing greenhouse gas emissions from power plants and gas and diesel vehicles, and by choosing clean energy options for our homes and businesses. Coastal communities can make intelligent decisions to not build in low-lying areas that may be flooded as sea level rises.

Speakers Johan Varekamp, Ph.D., Wesleyan University, and Ellen Thomas, Ph.D., Yale University, presented data on their research from LIS sediment core samples showing environmental change due to rising tides and a shifting ecosystem. Panel discussions were led by scientists and researchers who presented evidence that

warming water temperatures are causing shifts in finfish species and increasing the prevalence of non-indigenous invasive species. A panel of environmental professionals, land use managers and DEP staff discussed the practical implications of climate change on coastal development, and the behavioral adjustments people can make to reduce the regional impact of those effects. Global models predict that those changes will continue for the next hundred years, but in the meantime, Connecticut, with its Climate Change Action Plan, is a leader in promoting the reduction of greenhouse-gas emissions linked to global warming. That is a change we can feel good about. For further information on Connecticut's Climate Change Action Plan visit [www.ctclimatechange.com](http://www.ctclimatechange.com). 

# SPOTLIGHTED Coastal Access: Stonington Commons Transforms Industrial Site



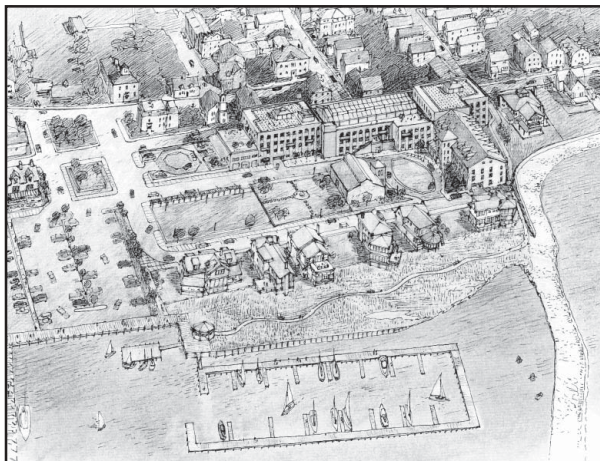
**A** once-blighted brownfield site in southeastern Connecticut's Stonington Borough has recently undergone a remarkable transformation, offering the state's newest opportunity for coastal public access. Stonington Commons, a unique waterfront residential community, has been established through the creative reuse of a five-acre former industrial property on Stonington Harbor. The development includes 34 condominiums, 6 single-family detached homes, the Stonington Yacht Club, a separate 30-slip public-private boating facility, and a dinghy dock for transient boaters mooring in the Harbor. Public walkways at the north and south entrances to Stonington Commons lead pedestrians from the Borough's busy streetscape of 18<sup>th</sup> and 19<sup>th</sup> century homes and shops to the site's restored waterfront. Visitors may stroll along a harborside foot path lined with native plantings, watch from the shade of a waterfront gazebo as boats ply the busy harbor, or fish from a nearby breakwater accessible from the project site. The waterfront, once dominated by industrial infrastructure

and flood control walls that together precluded public use for more than 150 years, is now open to all.

Stonington Commons replicates historic mill buildings that were largely destroyed by a fire in 2003 while the site was being redeveloped. The project site served as a military battery, known as "Grasshopper Fort," from which a canon successfully defended the Borough from British bombardment during the War of 1812. A second cannon was sited just south of the Old Lighthouse Museum at Stonington Point, a short walk from Stonington Commons. The museum is run by the Stonington Historical Society and is open to the public May through October.

Visitors interested in Connecticut's industrial past and historic architecture will enjoy viewing the granite foundry building located at the center of the site and the granite factory building adjacent to the property's south entrance. These buildings, the site's oldest remaining original structures, were both completed in 1851. First leased to makers of horseshoe nails and jewelry for the South Seas trade, these manufacturing facilities were also the home of the Jocelyn Firearms Company, which produced rifles during the Civil War. The buildings were later leased to the Standard Braid Company, manufacturers of furnishings for railroad cars, before being sold to the Atwood Manufacturing Company in 1880.

Before this residential development and waterfront walkway could be constructed, more than a century's worth of industrial contamination (predominately oils and heavy



Stonington Commons, a unique waterfront residential community.  
Illustration courtesy of Beyer Blinder Belle, Architects & Planners LLP

metals) had to be remediated. Clean-up, which was complicated by multiple layers of pollutants, daily tidal inundation, and other geotechnical concerns, took 18 months and cost \$1.5 million. The redevelopment, now complete, enables the public to enjoy a part of Connecticut's shoreline that few have ever had the opportunity to explore.

View the *Connecticut Coastal Access Guide* at [www.ct.gov/dep](http://www.ct.gov/dep) for detailed information to help you locate and plan your visit to Stonington Commons.

For more information about coastal public access in Connecticut, contact Dave Kozak at 860-424-3034 or by email [david.kozak@po.state](mailto:david.kozak@po.state).

## LOOK OUT for upcoming events!!

**June:** Rivers Month

**July:** Osprey young begin to fly.

### DEP Environmental Educator Workshops

Kellogg Environmental Center,  
500 Hawthorne Ave., Derby, CT  
Call 203-734-2513 to register.

*Water Investigations and Experiments*

**Fri. Aug. 11, 9:00 AM – 3:00 PM**

Teachers of Grades 5-8.

Learn how human activity impacts water resources in Connecticut, including Long Island Sound. Discover how students can develop their own inquiry-based experiments focusing on water quality. Topics covered include water quality standards, simple water testing procedures, basic watershed mapping techniques, and more. Participants will receive the *Healthy Waters, Healthy People* curriculum guide.

**Late August:** Plovers and terns begin southward migration.

**August-September:** Sea turtles move into LIS. Boaters please watch out for them!

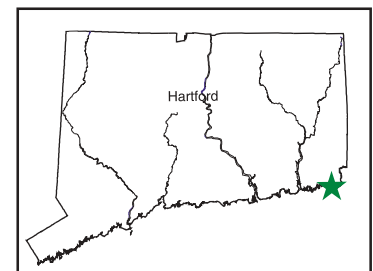
### Coastweeks Events

**Sat., Sep 16:** *International Coast Clean-up Day*,

Call Save the Sound, 1-888-SAVE LIS.

**Sat., Sep 30:** National Estuaries Day; visit [www.estuaries.gov](http://www.estuaries.gov)

Please be sure to check the Calendar of Events listed on DEP's website: [www.ct.gov/dep](http://www.ct.gov/dep)



## LIS Fund Conducts Research on Preserve the Sound Plates

Since its introduction in 1992, the Preserve the Sound license plate program has been a significant success. Plate sales have totaled more than 130,000 and raised over \$4.7 million to support 283 projects to help preserve, protect, and provide public access to Long Island Sound. However, in recent years, sales of the plate have declined, generating fewer dollars for these important projects.

To learn more about the public's interest in these plates, the DEP Office of Long Island Sound Programs (OLISP) recently signed the University of Connecticut's Center for Survey Research and Analysis (CSRA) to conduct telephone interviews and focus groups with Connecticut residents who have purchased Preserve the Sound license plates, and with those who have considered purchasing one but have not yet done so. The CSRA survey seeks to answer the following questions: 1) What are the key motivators that get people to buy, or to at least consider buying, Preserve the Sound plates? 2) What factors will help convince more people to buy LIS plates, especially those who express some interest but do not complete a purchase? 3) How can DEP best identify potential Preserve the Sound plate buyers and determine their demographic, attitudinal, lifestyle and geographic markers?

Preliminary study results revealed some interesting information about Connecticut residents and their environmental priorities. Both existing and prospective LIS plate owners liked the design of the license plate and the Preserve the Sound message, and wished no change to the original plate image. Many purchased the plate because of a personal connection to Long Island Sound, often from childhood family experiences along the shore, including, predominantly, recreational boating. Others purchased the plate because of their desire to support this important environmental cause.

Currently, the study is focusing on the telephone surveys, which, along with the results of the focus groups, will hopefully provide valuable information about public perception of the program. Once the telephone surveys are completed, results of the study will be evaluated to determine how DEP can improve the program in order to meet the needs of Connecticut citizens and maximize benefits to LIS. The study results will help the Long Island Sound Fund Advisory Committee and OLISP staff to improve the direction of this program to ensure its long-term success, so that we can most effectively Preserve the Sound.

To learn more about how to purchase your LIS license plate, call 1-800-CT-SOUND, or visit the DEP website at [www.ct.gov/dep](http://www.ct.gov/dep). To obtain information about the program and its grant opportunities, contact the Long Island Sound Fund Coordinator, Kate Brown, at 860-424-3034, or by e-mail at [kate.brown@po.state.ct.us](mailto:kate.brown@po.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 [juliet.bryan-powell@po.state.ct.us](mailto:juliet.bryan-powell@po.state.ct.us).

## Sound Tips

### Make a Transition to a Healthier Lifestyle...

This issue of *Sound Outlook* is about transitions. We can all participate in a transition to a more active lifestyle by taking advantage of the many recreational and educational opportunities offered in Connecticut's 137 state parks and forests, including the dozen parks located on or close to Long Island Sound. Experience our state's spectacular natural and recreational resources, learn about our unique history, and improve your health by hiking, biking and exploring these state properties.

A total of 47 park interpreters will be at shoreline and inland parks to serve as park guides and run educational and recreational programs. Through a partnership with the Connecticut Library Consortium, public libraries across the state will have a Connecticut State Park & Forest day pass available for all patrons. Library patrons may borrow the pass and use it for free parking at the major state parks where parking fees are charged. The pass will allow for museum entrance.

### Purchase of a LIS License Plate supports the LIS Fund



#### As of March 31, 2006:

- Plates sold: 131,358
- Funds raised: Over \$4.7 million
- Projects funded: 283

*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.

View past issues of *Sound Outlook* on the DEP website at [www.ct.gov/dep](http://www.ct.gov/dep).

# SPOTLIGHTED Coastal Resource:

## Changes in LIS Conditions Bring Transitions in Finfish Populations

**M**any of us who grew up in the 1960s and 1970s recall that winters then were generally colder than we have experienced in the last twenty years. Much of this shift in mean temperatures has been attributed to a shift in the North Atlantic Oscillation (NAO), a measure of atmospheric pressure differences between the Azores and Iceland that heavily influence the weather on both sides of the Atlantic Ocean. We are currently in a positive phase, which stimulates a warming trend along the eastern seaboard, as well as a host of oceanographic changes that ultimately appear to affect everything from water temperatures to phytoplankton and zooplankton abundance, and even the distribution and abundance of fish species.

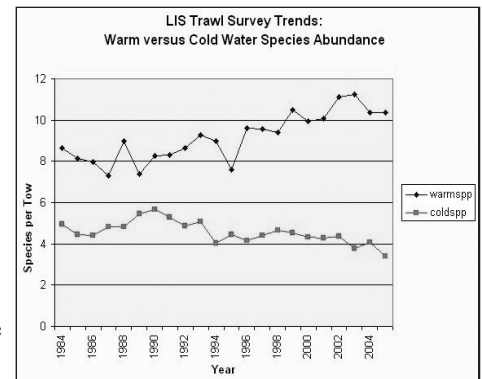
One local species that is particularly sensitive to winter water temperatures is winter flounder, which has undergone a systematic decline in abundance in Long Island Sound over the past 25 years. Warming winter temperatures have been shown to reduce survival of young flounder, perhaps through the early emergence of predators that are held in check during colder years. DEP Trawl Surveys have seen a decrease from the 60-135 flounder recovered per tow during the 1980s to just 17 fish per tow in the spring of 2005. Correspondingly, Connecticut's commercial flounder landings have declined about 75%, from over 1 million pounds to about 250,000 pounds, over the same period, while the recreational harvest has fallen from over 1 million flounder annually in the early 1980s to fewer than 5,000 in 2004.

There are, of course, other factors affecting winter flounder abundance, which may include overfishing and predation by striped bass, cormorants and seals. However, there seems little doubt that the gradual warming of the Sound has had adverse impacts on winter flounder, as well as on other "coldwater"

species, such as sea raven, longhorn sculpin and cunner, that are not normally associated with recreational or commercial harvesting that might otherwise explain such a systematic decline. At the same time, milder temperatures may have contributed to significant increases in the occurrence of "warmwater" species in LIS. Not only have the intensively managed striped bass, summer flounder and scup increased significantly in recent years, but so have other warmwater species like clearnose skate, hickory shad, moonfish, smallmouth flounder, striped sea robin and several others that are not managed. The Trawl Survey now encounters an average of 10-12 warmwater species per tow during the fall survey compared to just 7-9 such species per tow 20 years ago.

Whether due to a temporal shift in the NAO or a more systematic global climate change, the effects of even a slight change in water temperature are complex, and in some cases profound. Our challenge is going to be how we adapt to those changing conditions in terms of the resources we manage and the people who depend on those resources as a food supply, a source of employment, and a basis for their recreation. For more information about the effects of climate change on the fishes

of Long Island Sound, contact Dave Simpson at 860-447-4306 or by email at [dave.simpson@po.state.ct.us](mailto:dave.simpson@po.state.ct.us)



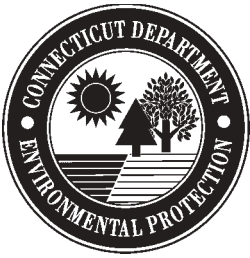
## DEP's Landscape Stewardship Initiative

**T**he sprawling development that is occurring across Connecticut poses one of the most significant environmental challenges we face as a state. It threatens to fragment the landscape, consume our precious natural resources, waste energy, pollute our air and water, overwhelm our local and state infrastructure (sewer, water, energy and transportation) and change forever the character of our communities. The Landscape Stewardship Initiative (LSI) was recently established to address this complex issue and assist in transitioning Connecticut towards more landscape-sensitive development patterns.

There are several overarching objectives of this complex initiative, two of which are briefly mentioned here. First, the LSI will enhance communication between the DEP and all

stakeholders by increasing access to information and providing appropriate outreach to foster greater environmental awareness. Consideration is being given to modeling a portion of this effort after components of Connecticut's Coastal Management Program, which is administered by the DEP Office of Long Island Sound Programs (OLISP). Second, the LSI will work towards identifying and building upon the public constituency that understands the need for and supports sound land use decisions to protect the integrity of Connecticut's diverse ecosystems. The LSI will enhance meaningful opportunities for public participation in environmental decision-making processes through outreach and training so that citizens can be more effective at promoting landscape-sensitive development.

Through the LSI, the Department will promote the conservation and restoration of the natural environment and traditional rural landscapes, while simultaneously advocating for the restoration and revitalization of Connecticut's urban and village environments and the protection and enhancement of our rich fabric of cultural and historical resources. Future growth in an efficient, cost effective, and sustainable manner will be encouraged by fostering diverse, cohesive, walkable communities that respect and preserve their open lands and natural and cultural resources. The ultimate goal is a vibrant and sustainable economy, affording a high quality of life for all residents. For more information about DEP's Landscape Stewardship Initiative, contact Margaret Welch at 860-424-3618 or by email at [margaret.welch@po.state.ct.us](mailto:margaret.welch@po.state.ct.us)



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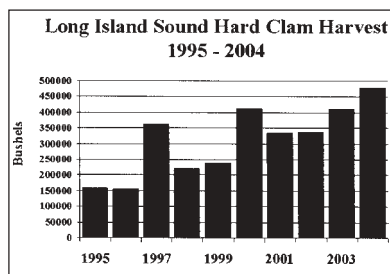
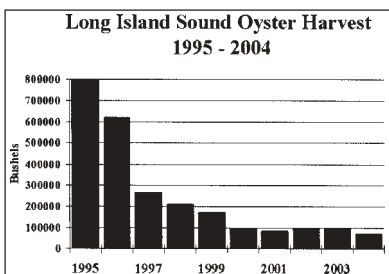


## Industry Update: Oyster Stew or Clam Chowder?

**D**uring the 1800s and 1900s, Long Island Sound was known for its prolific oyster industry, with Connecticut the eighth ranking producer of oysters out of the 20 coastal states harvesting the bivalves. During the 1890s, Connecticut held the distinction of having the largest fleet of steam-powered oyster boats in the world. By the 1980s and 1990s, the LIS ecosystem was changing. For reasons not completely understood, but thought to be related to warmer water temperatures, the Sound’s oyster population began to experience an epidemic of two natural diseases, Dermo and MSX. During 1997-1998, the two diseases proliferated within the LIS oyster population, and by 2000, the annual oyster harvest had experienced a devastating 700,000 bushel drop from near peak production levels of 1995.

With fewer oysters to be had, the industry had to adjust. Many oyster fishermen either went out of business or changed to harvesting another resource. Some who kept their boats and equipment began harvesting hard clams. Department of Agriculture figures indicate an increase in the hard clam harvest at the same time the oyster harvest was experiencing a decline. The smaller, more tender hard clams, known as ‘littlenecks’ and ‘cherrystones,’ are sold to distributors and used by restaurants in seafood dishes. The larger hard clams are used in chowder or processed and marketed as ‘clam juice’ for use as flavoring base in chowders and other dishes.

It is testimony to the resiliency of the people who work in and around the Sound that they are able to adapt as environmental conditions in the estuary respond to larger climate changes. For more information about shellfishing in Connecticut, visit the Department of Agriculture web site at [www.ct.gov/doag](http://www.ct.gov/doag) and select “Aquaculture.”



Visit the DEP website at [www.ct.gov/dep](http://www.ct.gov/dep).

Published by The Connecticut Department of Environmental Protection, Office of Long Island Sound Programs and Bureau of Water Management.

Editor: Tom Ouellette; Illustrations by Tom Ouellette; Contributing Editor: Mark Parker; Layout: Caryn Furbush; Contributors: David Blatt, Kate Brown, David Kozak, David Simpson, Margaret Welch. Printed on 100% post-consumer recycled paper using vegetable-based ink.

Financial assistance for **Sound Outlook** was provided by the Coastal Zone Management Act of 1972, as amended, administered by the Office of Ocean and Coastal Resource Management, National Oceanic and Atmospheric Administration (NOAA). Financial assistance was also provided by the federal Environmental Protection Agency under the National Estuary Program.

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