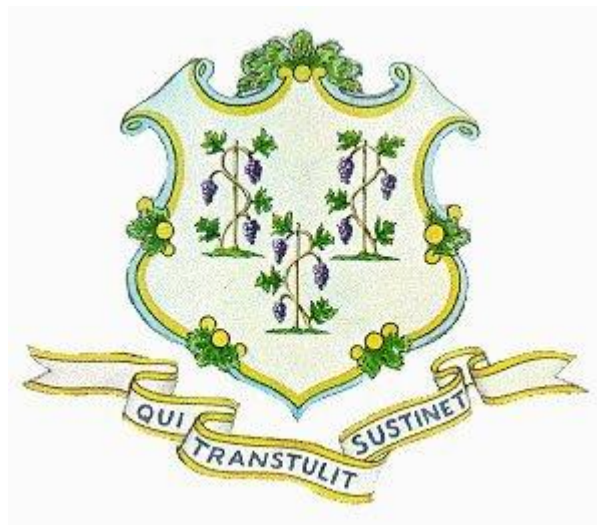


**LONG ISLAND SOUND
ASSEMBLY REPORT**

TO THE

**CONNECTICUT
GENERAL ASSEMBLY**



**Pursuant to Section 25-155
of the Connecticut General Statutes**

December 2011

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PREFACE

Established by Public Act 89-344 in 1989, the regional Long Island Sound Advisory Councils and the Long Island Sound Assembly (LISA) have worked hard to fulfill their mandate of advising the Connecticut General Assembly to facilitate the use and preservation of Long Island Sound and its resources.

Long Island Sound is a resource of tremendous value, sustaining economic livelihoods and providing recreation for thousands of residents in both CT and NY states. Overall, the total annual economic value of the Sound was estimated in 2007 to be in excess of \$8.25 billion,ⁱ having increased by \$3.25 billion since 1991.ⁱⁱ It was recently reported that over \$5 billion in business output within CT, as well as more than 30,000 jobs, and approximately \$2.7 billion in state Gross Domestic Product, is attributable to the state's maritime and related industries.ⁱⁱⁱ These are very large numbers indeed. **But there's more...**

As noted in the living marine resources section of this report, over 200,000 recreational anglers from both CT and NY make over 1,000,000 fishing trips each year, generating approximately \$149.3 million. The overall value to harvesters of commercial finfish and shellfish landings exceeds \$30 million a year, according to the DEEP. In 2007, shellfish harvested by CT license holders had a market value of almost \$26 million and shellfishing generates over \$910,000 a year in direct state income from leases of growing areas alone.^{iv} **But there's more...**

Shippers, the military, fishermen, aquaculturists, recreational boaters, charter and ferry operators, marina owners and a host of other businesses are not alone in their dependence on Long Island Sound for its resources and amenities. We all rely on the Sound for a multitude of environmental services including the Sound's role in nutrient cycling, regulating atmospheric gases, moderating regional climate as well as the hydrological cycle. Another service is the ability to mitigate coastal hazards such as storms, floods, and droughts. Recent research indicates that every 2 ½ acres of Connecticut's coastal wetlands prevents about \$28,500 in storm-related damage each year.^v These crucial ecosystem services are likely to grow in importance in a world of changing climate and rising seas.

Taken altogether, Long Island Sound's contributions to Connecticut's economy are stunning. The Long Island Sound Assembly urges the General Assembly to work to augment these contributions. Many opportunities exist to increase economic benefits for Connecticut residents and businesses, while at the same time safe-guarding and improving the environmental quality of the Sound. The bottom line is that the Sound is a precious resource, which will either increase in value as a result of good stewardship, careful planning and wise investment; or decrease if we do not engage in these efforts.

The following pages contain the recommendations of the Long Island Assembly and Councils to the Connecticut State Legislature. We urge you to review and implement them in the coming year. We stand ready to provide additional information or support to you in these efforts.

(See p.37 for references to statistics quoted above)

EXECUTIVE SUMMARY

LONG ISLAND SOUND ASSEMBLY 2011 REPORT

The Long Island Sound Assembly (LISA) herewith submits its TWENTIETH annual report to the Connecticut General Assembly. The following summary sets forth the primary recommendations, accomplishments and concerns of LISA. Full reports follow on pages after the colored divider.

Section 1: Open Water Dredge Disposal in Long Island Sound

INTRODUCTION

The Long Island Sound Assembly continues to maintain that, to remain operational, Connecticut's ports and harbors must have access to the four designated sites that can be used for the deposition of dredged sediments deemed suitable for open water disposal. These projects maintain access to port facilities, military bases such as the United States Naval Submarine Base, oil terminals, marinas, commercial fishing and other marine facilities. **If Connecticut's ports and harbors are denied use of these four sites, the impact on Connecticut's economy will be devastating with business failures and the loss of jobs. If the United States Naval Submarine Base at Groton / New London Connecticut is denied use of its local dredge disposal site, our country's National Defense will be adversely impacted.**

REQUESTED ACTION

The Long Island Sound Assembly (LISA) requests that the Connecticut General Assembly:

- Through the Congressional Delegation, continue all efforts to obtain federal financial support for the Regional Dredged Material Management Plan (DMMP) for Long Island Sound without which the **Central Long Island Sound Disposal Site (CLIS) off New Haven and the Western Long Island Sound Disposal Site (WLIS) off Norwalk will both be closed by the U.S. Environmental Protection Agency (EPA) in 2013.** While the Army Corps of Engineers and the EPA have begun significant work on the DMMP, funding is needed to complete the project.
- Through the Congressional Delegation continue to pursue federal funding for the development of the Supplemental Environmental Impact Statement (SEIS) for the designation of dredge sediment disposal sites in Eastern Long Island Sound that was agreed to in the 2005 EPA Final Rule that created the DMMP for Central and Western Long Island Sound. In the absence of the SEIS, the New London Dredge Disposal Site was slated to close in October 2011 and the Cornfield Shoals Dredge Disposal Site is slated to close in 2013.

- Fund P.A. 08-101, the Harbor Improvement Act, by allocating a bond issue to support state harbor improvement projects including, but not limited to, projects such as the preparation of a DMMP, harbor planning coordination, dredging, and other coastal facility repairs which support commercial and recreational maritime activities. This is presently being done in other New England States.
- Urge the Congressional Delegation continue to pursue increased federal funding of Connecticut dredging projects.
- Urge the Congressional Delegation continue to pursue federal funding for research and development of innovative dredge disposal technologies to enable economically viable upland reuse.

In addition, the Long Island Sound Assembly requests the General Assembly to:

- Support the CT DEEP Commissioner in efforts to enlist the aid of Connecticut's Congressional Delegation and New York regulators to ensure that provisions of the DMMP:
 - Reflect the needs of Connecticut harbor cities and towns for a streamlined dredge disposal permitting process utilizing the Connecticut Department of Transportation's Dredging Project Coordinator.
 - Are effective and reasonable in protecting the environment of Long Island Sound and Connecticut waterways.
 - Are timely to ensure continued accessibility to the four designated sites that can be used for the deposition of dredged sediments, including the New London and Cornfield Shoals sites.
 - Recognize that background concentrations of some constituents, such as cadmium, that are found in sediments in Long Island Sound may be naturally occurring and may not be contaminants.
 - Provide regulatory alternatives with a flexibility that does not currently exist in the so-called Ambro Amendment to the Ocean Dumping Act.
- In the absence of timely action in the development and issuance of a DMMP and absent the cooperation of New York State representatives, to initiate measures to support the repeal of the Ambro Amendment to the Ocean Dumping Act.
- Support the DEEP research projects designed to investigate alternative technologies for upland dredge reuse and support development of general permits for the reuse of soils and sediments to comply with the stated DMMP goal of reducing or eliminating open water dredge disposal.
- Accord additional support to DEEP research projects to design, in cooperation with the Army Corps of Engineers, appropriate Confined Aquatic Disposal (CAD) cells that can be used as a disposal alternative for dredged material which has been determined to be unsuitable for unconfined aquatic disposal. The CAD cells should be large enough for federal projects plus any additional private projects that might occur. The CAD cells

should remain open for use until full and ready for capping as is done in both Rhode Island and Massachusetts.

Section 2: Living Marine Resources: Finfish, Lobster, Shellfish

REQUESTED ACTION

The Long Island Sound Assembly (LISA) would like to emphasize the importance of the protection and preservation of habitat and populations of Long Island Sound’s naturally renewable and sustainable marine resources

LISA requests that the Connecticut General Assembly:

- Support a DEEP program to identify and remove derelict fishing gear, such as old lobster pots, whelk traps, eel pots, and fishing nets and cages left on the bottom of the Sound.
- Commit additional funding to support population restoration and sustainable management of the economically valuable and currently depleted lobster fishery.
- Provide funding to further investigate the effects of diseases, pharmaceuticals and other contaminants, on lobsters and shellfish in Long Island Sound (LIS).
- Investigate and promote aquaculture production alternatives for commercially and recreationally harvested bivalve species, including longline and bottom-cage technologies, and allocate funds to develop a planning process whereby stakeholders identify areas in LIS where such methods can take place without interfering with other commercial and recreational uses.
- Prioritize the identification and mitigation of non-point sources of pollution which degrade water quality and directly impact the health and abundance of shellfish.
- Reactivate the Department of Agriculture’s research vessel “John H. Volk,” which is currently dry-docked, so that it may be utilized as part of cooperative partnerships with universities, Aquaculture (VoAg) schools, and other fiscally strapped research organizations in need of a vessel to conduct LIS studies.
- Continue to support funding for the Agriculture Farm Viability Grants for Municipalities and 501 c (3) agricultural non-profits.

Section 3: Marine Law Enforcement

REQUESTED ACTION

The Long Island Sound Assembly (LISA) requests that the Connecticut General Assembly:

- Develop legislation to allow affordable marine law enforcement for shoreline and waterfront municipalities and for state use. LISA urges confirming the provisions of C.G.S. Sec. 15-154a allowing for the appointment of town marine officers to enforce narrowly defined, non-custodial marine infractions on the waterfront.
- Develop a long term funding program to expand the number of active Environmental Conservation (EnCon) Police Officers with DEEP to enable the Department's responsibilities to be addressed.
- Fund "special project" staffing of DEEP EnCon Officers to supervise and assess removal of derelict fishing gear to clean up and enhance the safety of the waters of the Sound.
- Develop legislation to enable funding for training for Harbormasters and Deputy Harbormasters to provide for smoother operation.

Section 4: Clean Water Fund Bond Authorization

REQUESTED ACTION

The Long Island Sound Assembly (LISA) requests that the Connecticut General Assembly:

- Continue its strong efforts in providing funds for the Clean Water Fund General Obligation Bonds and the Clean Water Fund Revenue Bonds after fiscal year 2012/2013.
- Provide a mechanism for continued funding for those projects that may experience a change in scope or completion date.

Section 5: Prescription Drugs and Personal Care Products in Long Island Sound

REQUESTED ACTION

The Long Island Assembly (LISA) requests that the General Assembly:

- Convene a group consisting of, but not limited to, representatives from Connecticut universities, Connecticut Hospital Association, Connecticut Medical Society, American College of Healthcare Executives (representing nursing homes), water companies, law enforcement agencies, and representatives from the environmental community, to devise a meaningful and practical cost effective plan to:
 - Reduce the amount of pharmaceuticals that must be disposed of;

- Dispose of pharmaceutical prescription and non-prescription products in an environmentally sound manner;
 - Identify and quantify the metabolites being discharged into Long Island Sound after sewage treatment through normal use;
 - Implement testing to collect base line data for a wide range of pharmaceutical compounds in our water supply.
- Establish partnerships with state and town health departments, law enforcement organizations, water pollution control authorities, water companies, medical professionals and pharmaceutical companies to develop an education program to inform the public of the correct safe disposal procedure for excess, unused or expired medications on a continuous basis.
- Establish active and continuous statewide disposal programs for unwanted, unused, or expired prescription drugs and over-the-counter medications. Create a mandate for licensed pharmacies and/or local police departments throughout the state to accept unused prescription and selected non-prescription drugs for proper disposal.
- The Legislature should work with academia and the pharmaceutical companies to:
- Identify and assess the pharmaceutical metabolites which are and are not removed following sewage and/or septic treatment;
 - Quantify the amounts of each of these metabolites released from sewage treatment systems into LIS.

Section 6: Stormwater and Domestic Wastewater Management

REQUESTED ACTION

The Long Island Sound Assembly requests that the Connecticut General Assembly:

- Support and prioritize continued funding to finish the separation of the combined sewers in Bridgeport, New Haven, Norwich and other municipalities.
- Support greater leadership from state agencies (e.g. CT DEEP) and develop funding mechanisms to assist municipalities in identifying and separating Combined Sewer Overflow (CSO) and implementing stormwater management to meet EPA Phase II stormwater mandates.
- Support a policy requiring all state projects and projects using state funds to seek Leadership in Energy and Environmental Design (LEED) certification and use Low Impact Development (LID) methods.

- Facilitate cooperative efforts among State Agencies to substantially reduce stormwater runoff from the State roadway system, including bridges, with the common goal of reducing pollution in the State's waterways.
- Provide increased enforcement support for municipal officials overseeing sediment and erosion control on construction projects, thereby reducing the need for costly municipal dredging.
- Provide economic incentives to the building community to incorporate LID methods for stormwater reduction and treatment into development projects.
- Encourage communities to adopt zoning and subdivision regulations as well as Smart Growth incentives that reduce the amount of impervious surface areas in their communities.

Section 7: Climate Change, Sea Level Rise and Coastal Hazards

REQUESTED ACTION

In order to minimize the potential negative impacts associated with climate change, sea level rise and coastal hazards, the Long Island Sound Assembly requests that the Connecticut General Assembly:

- Amend the Connecticut Coastal Management Act (CCMA) (C.G.S., Section 22a-90, et. seq.) by modifying coastal setbacks and freeboard requirements to comply with the federal mandates of the Coastal Zone Management Act.
- Urge state agencies to explicitly consider climate change and sea level rise (SLR) impacts in planning and permitting processes, and capital construction and infrastructure projects.
- Amend C.G.S., Sections 16a-24 through 16a-33 which mandates the development and updating of a State Plan of Conservation and Development (POCD) every five years to explicitly consider during the planning process the identification, adaptation to and mitigation of these impacts.
- Amend C.G.S. Section 8-23 which mandates that each municipality adopt and revise a POCD at least once every 10 years, to explicitly consider during the planning process the identification, adaptation to and mitigation of these impacts.
- Revise Title 28, Chapter 517 of the C.G.S., which addresses public safety and emergency planning, so that municipal and state emergency operations plans consider current and potentially increasing hazard vulnerabilities.

- Consider amending the state building code (C.G.S., Section 29-252) by adjusting high wind and establishing high water building, setbacks and freeboard requirements accordingly.
- Facilitate the adoption of updated FEMA floodplain regulations and maps in state and municipal regulatory and permitting processes.
- Develop outreach and education efforts for municipal administrators and coastal property owners about these impacts, and means of decreasing vulnerability.
- Extend administrative, technical and financial assistance to municipalities for development of adaptation plans to minimize negative environmental, economic and community impacts.
- Develop a green subdivision certification program similar to that in Georgia, as well as a Storm Smart program similar to that in Massachusetts.
- Adopt a law similar to California Proposition 22 to prohibit the State from seizing revenues dedicated to environmental services such as the Energy Efficiency Fund.

Thank you for Restoring Funding to the Long Island Sound Councils

The Long Island Sound Councils and Assembly (LISA) would like to take this opportunity to thank the CT General Assembly for their much appreciated efforts and success in restoring funding in 2011. The funding makes possible the publishing of this report submitted annually to the Connecticut General Assembly and gives a voice to the concerns of Connecticut coastal and inland communities/municipalities on important issues relating to Long Island Sound. It also helps support state-wide environmental educational initiatives (listed below).

REQUESTED ACTION

The Long Island Sound Assembly requests that the Connecticut General Assembly:

- Continue its efforts to keep the Councils funded in the years to come.

**LONG ISLAND SOUND COUNCILS AND ASSEMBLY
ENVIRONMENTAL EDUCATION ACHIEVEMENTS 1992-2011**

Achievements through the Long Island Sound Foundation's funding:

1992 to present: Biennial research conference held for scientists doing research on Long Island Sound (most recently, October 29 & 30, 2010). 300 copies of Proceedings published for each conference for attendees, universities and State libraries.

1997: The General Assembly, at the urging of LISA, declared the Friday before Memorial Day as Long Island Sound Day in Connecticut.

1998 to present: Annual statewide drawing contest for grades K-6. Calendar with winning entries (12,000 copies) published yearly starting 1999.

1999 and 2001: Public Access Guides for CT compiled and published in conjunction with DEP.

2002: Resource Directory published of environmental agencies and organizations working for the environment and Long Island Sound. An updated version will be published, spring 2011, on the website of the Long Island Foundation (lisfoundation.org) and of the Long Island Councils and Assembly (lisassembly.org).

2002 to present: State wide Marine Science Day for 5th-8th grade students, with workshops both on land and on the Sound. 89 students participated the first year while last year, 509 students experienced the day's event. Grant monies provided to some schools to enable participation.

2003 to present: Scholarship funding provided to CT Science Fair contestants (high school juniors and seniors). Up to 6 students annually receive awards of \$500 to \$1,000 toward college studies in the environmental field.

2004: Statewide photography contest for high school students. 10,000 copies of two educational posters for teachers and students produced – one for grades K-6, one for grades 7-12.

2012: New program for pre-school children in development.

SECTION 1**OPEN WATER DREDGE DISPOSAL IN LONG ISLAND SOUND****ALERT**

There is a problem regarding the New London Dredge Disposal Site (NLDS). EPA's 2005 commitment to conduct a Supplemental Environmental Impact Statement (SEIS) for Eastern Long Island Sound (i.e. NLDS) is no longer certain.

The EPA must be moved to immediately declare the start time and completion date for the SEIS for Eastern Long Island Sound. Use of the NLDS for all federal navigation projects and any non-federal projects over 25,000 cubic yards expired during the first week of October 2011.

Closure of the NLDS will be disastrous to all maritime stakeholders that utilize Eastern Long Island Sound, Fisher's Island Sound and other nearby bodies of water. Affected interests include the United States Naval Submarine Base, the General Dynamics Electric Boat Company, the Connecticut State Pier, the Dow Chemical Company, the United States Coast Guard Academy, Hess Oil Corporation, Thames Shipyard, Cross Sound Ferry Services Inc. and many other maritime facilities.

Applying pressure and holding EPA to its commitment regarding the SEIS should force it to take the necessary action to keep Connecticut's ports and maritime industry fully functioning and contributing jobs to the state's economy. Taking the recommended action here is in the best interests of all Connecticut citizens.

If the EPA fails to honor its commitment for any reason, the alternatives are to either repeal the discriminatory Ambro Amendment or obtain a special executive order keeping the NLDS open.

INTRODUCTION

The Long Island Sound Assembly continues to maintain that, to remain operational, Connecticut's ports and harbors must have access to the four designated sites that can be used for the deposition of dredged sediments deemed suitable for open water disposal. These projects maintain access to port facilities, military bases such as the United States Naval Submarine Base, oil terminals, marinas, commercial fishing and other marine facilities. **If Connecticut's ports and harbors are denied use of these four sites, the impact on Connecticut's economy will be devastating with business failures and the loss of jobs. If the United States Naval Submarine Base at Groton / New London Connecticut is denied use of its local dredge disposal site, our country's National Defense will be adversely impacted.** It is imperative to

keep these sites open as potential dredge disposal sites. It is imperative to keep Connecticut's ports open and commercially viable. Dredging projects and disposal operations must be performed both in an environmentally **and economically** viable manner.

REQUESTED ACTION

The Long Island Sound Assembly (LISA) requests that the Connecticut General Assembly:

- Through the Congressional Delegation continue all efforts to obtain federal financial support for the Regional Dredged Material Management Plan (DMMP) for Long Island Sound without which the Central Long Island Sound Disposal Site (CLIS) off New Haven and the Western Long Island Sound Disposal Site (WLIS) off Norwalk will both be closed by the U.S. Environmental Protection Agency (EPA) in 2013. While the Army Corps of Engineers and the EPA have begun significant work on the DMMP, funding is needed to complete the project.
- Through the Congressional Delegation continue to pursue federal funding for the development of the Supplemental Environmental Impact Statement (SEIS) for the designation of dredge sediment disposal sites in Eastern Long Island Sound that was agreed to in the 2005 EPA Final Rule that created the DMMP for Central and Western Long Island Sound. In the absence of this SEIS, the New London Dredge Disposal Site was slated to close in October 2011 and the Cornfield Shoals Dredge Disposal Site is slated to close in 2013.
- Fund P.A. 08-101, the Harbor Improvement Act, by allocating a bond issue to support state harbor improvement projects including, but not limited to, projects such as the preparation of the DMMP, harbor planning coordination, dredging, and other coastal facility repairs which support commercial and recreational maritime activities. This is presently being done in other New England States.
- Urge the Congressional Delegation continue to pursue increased federal funding of Connecticut dredging projects.
- Urge the Congressional Delegation continue to pursue federal funding for research and development of innovative dredge disposal technologies to enable economically viable upland reuse.

In addition, the Long Island Sound Assembly requests the General Assembly to:

- Support the CT DEEP Commissioner in efforts to enlist the aid of Connecticut's Congressional Delegation and New York regulators to ensure that provisions of the DMMP:
 - Reflect the needs of Connecticut harbor cities and towns for a streamlined dredge disposal permitting process utilizing the Connecticut Department of Transportation's Dredging Project Coordinator.

- Are effective and reasonable in protecting the environment of Long Island Sound and Connecticut waterways.
 - Are timely to ensure continued accessibility to the four designated sites that can be used for the deposition of dredged sediments, including the New London and Cornfield Shoals sites.
 - Recognize that background concentrations of some constituents, such as cadmium, that are found in sediments in Long Island Sound may be naturally occurring and may not be contaminants.
 - Provide regulatory alternatives with a flexibility that does not currently exist in the so-called Ambro Amendment to the Ocean Dumping Act.
- In the absence of timely action in the development and issuance of a DMMP and absent the cooperation of New York State representatives, should initiate measures to support the repeal of the Ambro Amendment to the Ocean Dumping Act.
- Support the DEEP research projects designed to investigate alternative technologies for upland dredge reuse and support development of general permits for the reuse of soils and sediments to comply with the stated DMMP goal of reducing or eliminating open water dredge disposal.
- Accord additional support to DEEP research projects to design, in cooperation with the Army Corps of Engineers, appropriate Confined Aquatic Disposal (CAD) cells that can be used as a disposal alternative for dredged material which has been determined to be unsuitable for unconfined aquatic disposal. The CAD cells should be large enough for federal projects plus any additional private projects that might occur. The CAD cells should remain open for use until full and ready for capping as is done in both Rhode Island and Massachusetts.

BACKGROUND

The Regional Dredged Material Management Plan (DMMP)

On May 13, 2005, then Governors Rell and Pataki announced a joint agreement with the U.S. Environmental Protection Agency and the Army Corps of Engineers that outlines conditions requiring state and federal agencies to work cooperatively to develop and implement a regional Dredged Material Management Plan (DMMP). The agreement, which involved negotiations between the New York Governor's Office, New York Department of State, the federal Environmental Protection Agency, the Army Corps of Engineers, and the State of Connecticut Governor's Office, will continue Connecticut and New York efforts to protect and restore Long Island Sound. The agreement has a sunset date of 2013 and imposes 14 specific restrictions designed to ensure that alternatives to open water disposal are sought, and only if absolutely necessary, allow for the safe disposal of dredging materials in two sites. If any of the restrictions are not met, the EPA has agreed to rescind the two disposal site designations and cease open water disposals there.

The U.S. Environmental Protection Agency and the Army Corps of Engineers have held scoping meetings, public meetings, workshops and a dredging needs survey as part of the DMMP

development process. At present a working group composed of stakeholders and regulators from Connecticut and New York, together with the Army Corps of Engineers (ACOE) and United States Environmental Protection Agency (EPA) personnel, has completed three of six scheduled meetings on dredging and disposal of dredged materials. The meetings have been both professional and expansive. To date, nothing has been discovered that would prevent a timely report favoring the continued use of both the WLIS and CLIS sites.

Absent timely action in the development and issuance of the Central and Western Long Island Sound DMMP, the General Assembly should initiate measures to support the repeal of the Ambro Amendment to the Ocean Dumping Act. Connecticut DEEP and Army Corps of Engineers, in addition to other stakeholders have recognized that the Ambro Amendment:

- Does not affect any other estuary in the entire country;
- Has driven EPA's interpretation to not allow capping of contaminated sediments in Long Island Sound, although many agencies view capping as a viable best management practice;
- Is estimated to add a factor of up to ten times (10x) to the cost of a project, in addition to time delays;
- Results in less regulatory flexibility in analyses, testing, and suitability determinations of dredged sediments;
- Continues to be the subject of repeal.

Research and Development

Because one of the goals of the DMMP is to ensure that alternatives to open water disposal are sought, support needs to be accorded to DEEP for research projects designed to investigate alternative technologies for upland dredge reuse and to further develop its General Permits for the reuse of Soils and Sediments.

An alternative to open water disposal, which has been used successfully in New England, is the creation and use of Confined Aquatic Disposal (CAD) cells. These cells are cost-effective and environmentally sound options whereby in-harbor pits are dug to a specific depth below the seafloor, filled with dredged contaminated sediments, and then capped with specific amounts of clean sediments. This option was chosen for the Boston Harbor Navigation Improvement Project. Additional support needs to be accorded to DEEP research projects to design, in cooperation with the Army Corps of Engineers, appropriate Confined Aquatic Disposal (CAD) cells that can be used as a disposal alternative for dredged material which has been determined to be unsuitable for unconfined aquatic disposal. The CAD cells should be large enough for federal projects plus any additional private projects that might occur. The CAD cells should remain open for use until full and ready for capping as is done in both Rhode Island and Massachusetts.

One of the impediments to open water disposal of dredged material has been the concept that referenced background samples do not accurately reflect background concentrations of sediment in Long Island Sound. By letter dated October 5, 2007 to the Connecticut Department of Environmental Protection, Sailer Environmental Inc. on behalf of the Connecticut Marine Trades Association (CMTA), presented a preliminary study on the occurrence of cadmium in sediments dredged from Connecticut marinas. In essence, background concentrations of cadmium found in sediments in Long Island Sound, may be naturally occurring and should not be automatically

excluded from relocation to established disposal sites. Support needs to be accorded to the DEEP to review the latest studies of sediment analyses of Long Island Sound, including the study presented on behalf of the CMTA. There appears to be more than sufficient information to warrant a reevaluation of the current method of determining what levels of constituents such as cadmium are acceptable for open water disposal.

As has been clearly stated in the preface to our recommendations, the General Assembly must be advised of the need to promote Connecticut’s economic interests by protecting the ability of the state’s harbors and ports to economically dispose of dredged sediments.

Funding Opportunities

Immediate action is necessary to address the scheduled dredge site closings. The New London Dredge Disposal Site was scheduled to close in October 2011, and the Cornfield Shoals Dredge Disposal Site is scheduled to close in 2013. Federal funding and actions are necessary to create the Supplemental Environmental Impact Statement (SEIS) to investigate the continued use of these sites and for alternative disposal sites.

Funding to improve the coordination and scheduling of dredge projects can also facilitate the use/reuse of sediments from various projects, e.g., available cap materials.

Additional funding is needed for critical Connecticut dredging projects at both state and federal levels. On the home front, 2008 saw the passage of P.A. 08-101, The Harbor Improvement Act, which was passed but not funded. In 2012 we need to allocate a bond issue to support state harbor improvement projects including, but not limited to, preparation of DMMPs, harbor planning coordination, dredging, and other coastal facility repairs which support commercial and recreational maritime activities.

SECTION 2

LIVING MARINE RESOURCES: FINFISH, LOBSTER, SHELLFISH

REQUESTED ACTION

The Long Island Sound Assembly (LISA) would like to emphasize the importance of the protection and preservation of habitat and populations of Long Island Sound’s naturally renewable and sustainable marine resources

The Long Island Sound Assembly requests that the Connecticut General Assembly:

- Support a DEEP program to identify and remove derelict fishing gear, such as old lobster pots, whelk traps, eel pots, and fishing nets and cages left on the bottom of the Sound.

- Commit additional funding to support population restoration and sustainable management of the economically valuable and currently depleted lobster fishery.
- Provide funding to further investigate the effects of diseases, pharmaceuticals and other contaminants, on lobsters and shellfish in Long Island Sound (LIS).
- Investigate and promote aquaculture production alternatives for commercially and recreationally harvested bivalve species, including longline and bottom-cage technologies, and allocate funds to develop a planning process whereby stakeholders identify areas in LIS where such methods can take place without interfering with other commercial and recreational uses.
- Prioritize the identification and mitigation of non-point sources of pollution which degrade water quality and directly impact the health and abundance of shellfish.
- Reactivate the Department of Agriculture’s research vessel “John H. Volk,” which is currently dry-docked, so that it may be utilized as part of cooperative partnerships with universities, Aquaculture (VoAg) schools, and other fiscally strapped research organizations in need of a vessel to conduct LIS studies.
- Continue to support funding for the Agriculture Farm Viability Grants for Municipalities and 501 c (3) agricultural non-profits.

BACKGROUND

Economic value of fisheries

There are more than 200,000 recreational anglers annually in Long Island Sound from both CT and NY who make more than one million fishing trips a year catching more than 10 million fish. Recreational fishing supports the economy through the sale of gear, bait, and fuel. The average economic value for the Long Island Sound recreational fishery between 2000 and 2004 was \$149.3 million.

The economic value of Connecticut commercial finfish and shellfish landings has been monitored by CT DEP since 1978. Data for Connecticut show that the ex-vessel value of total landings steadily increased from a few million dollars before 1980 to a record high value of over \$61 million in 1992, boosted by increasingly large shellfish landings (CT DEP MFIS 2010). Despite declines in total weight harvested, the overall value of total landings has generally increased, providing over \$30 million to harvesters annually since 2005 (CT DEP MFIS 2010). These figures represent only the value of these landings at the dock. The total economic impact of commercial fishing on the Sound’s coastal communities is far greater. Commercial fishing and shellfishing contributes approximately three percent to Long Island Sound’s overall 2007 estimated value of \$8.25 billion.

CT DEEP reports 2010 dockside commercial values of Connecticut’s ten top seafood species (sea scallop, lobster, squid, and seven finfish) at greater than \$16.1 million with finfish contributing \$3,585,000. In 2010 there were 32 licensed seafood dealers with 217 fishing vessels (excluding shellfish). Seafood harvesting supports satellite businesses such as the maintenance

and operation of boating and shipping, marketing, and sales all of which support jobs in a time of needed employment.

Shellfish

Commercial shellfishing with its 44 licensed harvesters and more than 110 harvest vessels brings in more than \$910,000 in income to the State from the annual leasing of grounds. In addition there are more than 32 shellfish wholesalers throughout the state with many more retail operations.

In 2007, 48.9 million hard clams, and 13.5 million oysters were harvested by Connecticut license holders, worth a total of \$25.7 million in market value. Farm-raised shellfish in Long Island Sound is presently supplied by approximately 40 companies concentrating on oysters and hard clam. Attempts to restore oyster populations and rebuild the resource through general cultch planting, reef rebuilding and oyster sanctuaries/reserves are also becoming common management tools (OEBRT 2007). However, the industry has learned the hard lesson that depending on the culture of a single species can lead to catastrophic loss from disease or predation, and is working hard to diversify aquaculture efforts. Experimental culture operations have been initiated for blue mussels, razor clams, macroalgae and bay scallops for restoration purposes (Getchis 2005). Currently, 271 km² of Long Island Sound benthos is leased for aquaculture that generates more than \$12 million annually (Getchis 2005), using techniques almost unchanged for 200 years.

Hazards of derelict fishing gear

Lobster traps, along with other types of fishing gear are considered to be private property and may only be moved or retrieved by the owner or law enforcement officers. Such gear, when deployed in LIS but no longer tended, is biologically and economically detrimental. This “ghost gear” entraps and kills a wide range of living resources including lobster and finfish such as black sea bass, scup (porgy), tautog (black fish), striped bass, and flounder. The DEEP estimates between 54 and 136 metric tons of derelict fishing gear could be removed from LIS in one year. Additional Department of Energy and Environmental Protection (DEEP) Environmental Conservation Officers (ENCON) are needed to supervise this project.

Removal of derelict gear will eliminate by-catch mortality of other harvestable fishery resources as well as eliminate lost time and equipment for all research and commercial activities on the Sound which are prone to entanglement in this gear. Similar abandoned gear retrieval programs are operating in the states of Washington (fish nets/traps), Hawaii (fishing nets), Florida (crab and spiny lobster pots), North Carolina (black sea bass traps), and Virginia (blue crab traps).

Lobster disease

State and federal landings data show that prior to the lobster die-off, Connecticut and New York commercial lobster landings ranged from 7 to 11.7 million pounds annually, with an ex-vessel value of \$18 to \$40 million. Participation in the fishery peaked in 1998 when over 1200 residents of the two states bought licenses to fish commercially. However, by 2002 fewer than 900 residents purchased licenses and by 2009 that number declined to 592. Commercial landings also plummeted to about 1 million pounds by 2009, with an ex-vessel value under \$3.5 million (CT DEP MFIS 2010).

Thirty percent of lobsters in coastal areas of southern New England are affected by shell disease which is now found in lobsters from LIS to Maine. The disease is caused by bacteria that invade

from the outside of the lobster through pores in its shell. Larger female lobsters are severely affected and egg-bearing lobsters can be weakened and die prematurely. Environmental stressors such as elevated temperatures, hypoxia, contaminants (including endocrine mimics), have been implicated in the initiation or exacerbation of the disease, although specific mechanisms and causative links remain unclear. Recent studies suggest that alkylphenol exposure may play a role in shell disease as lobsters with shell disease have been found to have higher concentrations of alkyl phenols than unaffected animals. Alkyl phenols are found in a wide variety of products from detergents to surfactants, paints, and plastics. Research on lobster health is paramount to understanding the causes and consequences of shell disease and other diseases affecting the lobster stocks. The continuation of funding dedicated to lobster health is key to understanding the effects of these diseases on both the resource and the fishery.

Economic viability

Resource depletion and restricted harvesting areas result in economic losses to the shellfish industry. The ability to harvest other species using non-traditional methods provides a more stable income to fishermen and buffers the effects of natural population declines. Aquaculture offers the opportunity to control harvests and manipulate production without relying on natural reproductive processes.

In 1992, \$49.2 million (combined clam and oyster) was contributed to the state's economy. From 1997-2004 the shellfish harvests declined to less than thirteen million dollars combined. But since 2004, the numbers have been rebounding with clamming becoming the dominant shellfish harvest. The commercial shellfish industry (combined clam and oyster) contributed \$25.6 million to the state's economy in 2007.

Water quality issues

Commercial and recreational shell fishing is inextricably connected to water quality. Recent downgrading of the classification of harvestable shellfish areas all along our coastline threatens this special asset and activity for all residents.

High levels of nitrogen and other nutrients discharged by sewage treatment plants and combined sewer overflows (CSOs), deplete dissolved oxygen and create hypoxia events in LIS (http://ctenvironment.org/images/stories/cso_hypoxia_cleanwater.jpg). These conditions, coupled with high counts of fecal coliform bacteria, can lead to recreational and commercial shellfish closures and significant die-offs. At this time, none of the major Connecticut rivers is open for direct harvest of shellfish due to non-point and point sources of pollution.

Research vessel

At this time, the Department of Agriculture's Bureau of Aquaculture shellfish research vessel "John H Volk" is dry docked and not in state service. This vessel is a scientifically valuable piece of equipment and until recently has been available for use by outside agencies since its purchase by the State in 1983. The availability of this research vessel to organizations conducting important much needed research on LIS resources is of great value. Federal, state and local agencies as well as universities should continue to be able to utilize this vessel to collect LIS data including information on shellfish populations and water quality. Since the vessel is steel-hulled and has been routinely maintained, it is fiscally prudent to continue to maintain it and make it available to organizations engaged in the protection of LIS.

Habitat protection

Coastal and estuarine habitats are critical to supporting healthy populations of fish and shellfish and viable fisheries in the State. Continued support of management programs prioritizing habitat protection, especially for vulnerable species including flounder, lobster and seed oysters, is needed. The protection of high quality habitats is more cost effective than the restoration of degraded habitats. The CT Agriculture Viability Grants for municipalities was established during 2006. Shellfish resource projects were approved during 2006, 2007, 2008, and 2010 in the shoreline towns of Stratford, Branford, Clinton, Westport and Darien for water quality and shellfish projects. These funds require matching funds and allow for extended resource enhancement projects for the shellfish industry and the shellfish resources of the state.

SECTION 3**MARINE LAW ENFORCEMENT****REQUESTED ACTION**

The Long Island Sound Assembly (LISA) requests that the Connecticut General Assembly:

- Develop legislation to allow affordable marine law enforcement for shoreline and waterfront municipalities and for state use. LISA urges confirming the provisions of C.G.S. Sec. 15-154a allowing for the appointment of town marine officers to enforce narrowly defined, non-custodial marine infractions on the waterfront.
- Develop a long term funding program to expand the number of active Environmental Conservation (EnCon) Police Officers with DEEP to enable the Department's responsibilities to be addressed.
- Fund "special project" staffing of DEEP EnCon Police Officers to supervise and assess removal of derelict fishing gear to clean up and enhance the safety of the waters of the Sound.
- Develop legislation to enable funding for training for Harbormasters and Deputy Harbormasters to provide for smoother operation.

BACKGROUND

Protection and enforcement on the water is as important as on the land. It is the responsibility of every waterfront (freshwater and marine) municipality but, with limited and shrinking resources, certified police officers may not be affordable. The waterfront can easily be a seasonal enforcement district as it was for many years until the early '90s.

Prior to 1992 a town could appoint town marine officers to enforce a limited number of marine statutes. These were usually part-time positions and did not require the personnel to attend lengthy training at an academy. To the towns, the cost of a marine officer was well below that of an expensive, academy trained and certified police officer on the street. An Attorney General opinion prompted by the Police Officer Standards and Training Council (and following declining enrollment at the state academy), ended the practice of affordable town appointments of marine officers. This decision needs to be rescinded.

The DEEP Boating Division should prioritize developing a narrowly defined curriculum and training program to train and certify part-time town marine officers for the many municipalities that have a waterfront. This would provide for affordable and manageable waterfront enforcement to address seasonal public safety demands and responsibilities. DEEP already has a training program for Lake Authority Patrolmen who, after training and certification by the DEEP Commissioner are empowered to enforce a narrowly defined number of marine statutes. This limited enforcement capability does not require POST certification and is therefore much less expensive for a municipality. Merging this existing program with the aforementioned Marine Officer program will make the waterfront and waterways significantly safer for the public.

DEEP relies on their law enforcement division, Connecticut Environmental Conservation Police. Historically understaffed and under funded for the 24/7 jobs they perform, a long term strategy for significant staff additions needs to be developed and funded to manage their inland, marine and wildlife duties as well as the many state parks falling under their purview.

Harbormasters are under the direct purview of the Department of Transportation but are appointments by the Governor. A training program needs to be developed for them and their Deputies for more efficient management.

SECTION 4

CLEAN WATER FUND BOND AUTHORIZATION

REQUESTED ACTION

The Long Island Sound Assembly (LISA) requests that the Connecticut General Assembly:

- Continue its strong efforts in providing funds for the Clean Water Fund General Obligation Bonds and the Clean Water Fund Revenue Bonds after fiscal year 2012/2013.
- Provide a mechanism for continued funding for those projects that may experience a change in scope or completion date.

BACKGROUND

Bond Authorizations for the Clean Water Fund Grant and Loan Programs are used to provide low interest loans and grants to towns for water pollution control projects in response to the Department of Energy and Environmental Protection mandates. Project examples include wastewater treatment plant upgrades, nutrient (nitrogen and phosphorous) removal, elimination of combined sewage discharges from rivers by separating sanitary sewage from stormwater, sewer rehabilitation of the piping and pumping systems, and the extension of sewers to areas with inadequate septic systems in order to eliminate community pollution problems.

However, bonding allocations have not been consistent in the early to mid 2000s. The General Assembly reinvested itself for funding of the Clean Water Fund in fiscal year 2008, and needs to continue this momentum for future years.

In addition, the General Assembly needs to provide a mechanism for continued funding for approved projects that may experience a change in scope or completion date due to unforeseen circumstances. There have been instances where actual construction work and funding authorizations have not coincided. The result has placed an additional financial burden on the affected municipalities.

Not only are the environmental rewards significant from completion of these projects, but these projects create jobs for people in engineering services, for people in construction trades, and for people who operate the infrastructure.

The Clean Water Fund allows both the state and towns to finance these important water pollution control projects with significantly less money, but if we do not tend to these wastewater projects now, as time passes they will only increase in cost. Pushing these projects off to the future will ultimately burden taxpayers with additional costs, and prolong the time that it will take to clean up our water bodies. Funding water quality projects now and planning for additional funding in the future are the fiscally responsible approaches towards:

- Eliminating raw sewage from flowing into our rivers and the Sound during rain storms;
- Addressing hypoxia, or low dissolved oxygen, problems in Long Island Sound;
- Addressing nutrients, heavy metals, organics and many other contaminants from runoff into Long Island Sound;
- Restoring the dead zone in Long Island Sound;
- Creating jobs and stimulating the economy.

SECTION 5**PRESCRIPTION DRUGS IN LONG ISLAND SOUND****REQUESTED ACTION**

The Long Island Assembly (LISA) requests that the General Assembly:

- Convene a group consisting of, but not limited to, representatives from Connecticut universities, Connecticut Hospital Association, Connecticut Medical Society, American College of Healthcare Executives (representing nursing homes), water companies, law enforcement agencies, and representatives from the environmental community, to devise a meaningful and practical cost effective plan to:
 - Reduce the amount of pharmaceuticals that must be disposed of;
 - Dispose of pharmaceutical prescription and non-prescription products in an environmentally sound manner;
 - Identify and quantify the metabolites being discharged into Long Island Sound after sewage treatment through normal use;
 - Implement testing to collect base line data for a wide range of pharmaceutical compounds in our water supply.
- Establish partnerships with state and town health departments, law enforcement organizations, water pollution control authorities, water companies, medical professionals and pharmaceutical companies to develop an education program to inform the public of the correct safe disposal procedure for excess, unused or expired medications on a continuous basis.
- Establish active and continuous statewide disposal programs for unwanted, unused, or expired prescription drugs and over-the-counter medications. Create a mandate for licensed pharmacies and/or local police departments throughout the state to accept unused prescription and selected non-prescription drugs for proper disposal.
- The Legislature should work with academia and the pharmaceutical companies to:
 - Identify and assess the pharmaceutical metabolites which are and are not removed following sewage and/or septic treatment;
 - Quantify the amounts of each of these metabolites released from sewage treatment systems into LIS.

BACKGROUND

Research over the years has shown that flushing medications and personal care products down the toilet or sink causes water pollution, impacts drinking water and has adverse effects on septic systems, fish and other aquatic wildlife. In addition, for many prescription and over-the-counter drugs, more than 90 percent passes directly through the patient into the waste stream. A nationwide study done in 1999 and 2000 by the United States Geological Survey (USGS) found low levels of drugs such as antibiotics, hormones, contraceptives and steroids in 80% of the rivers and streams tested. A 2008 investigation by the Associated Press National Investigative Team found small quantities of prescription drugs and over-the-counter medicines in public drinking water across the United States.

Connecticut, working with the U.S. Department of Drug Enforcement Administration has provided its residents with a successful program ‘Take Back Day’ to dispose of unwanted, unused, or expired medication. Over 5,000 pounds of drugs were collected and destroyed in 48 communities in September 2010. We propose that local licensed pharmacies and/or local law enforcement departments be allowed to accept unused prescription and selected drugs for proper disposal on a continuous basis.

SECTION 6

STORMWATER AND DOMESTIC WASTEWATER MANAGEMENT

REQUESTED ACTION

The Long Island Sound Assembly requests that the Connecticut General Assembly:

- Support and prioritize continued funding to finish the separation of the combined sewers in Bridgeport, New Haven, Norwich and other municipalities.
- Support greater leadership from state agencies (e.g. CT DEEP) and develop funding mechanisms to assist municipalities in identifying and separating Combined Sewer Overflow (CSO) and implementing stormwater management to meet EPA Phase II stormwater mandates.
- Support a policy requiring all state projects and projects using state funds to seek Leadership in Energy and Environmental Design (LEED) certification and use Low Impact Development (LID) methods.
- Facilitate cooperative efforts among State Agencies to substantially reduce stormwater runoff from the State roadway system, including bridges, with the common goal of reducing pollution in the State’s waterways.

- Provide increased enforcement support for municipal officials overseeing sediment and erosion control on construction projects, thereby reducing the need for costly municipal dredging.
- Provide economic incentives to the building community to incorporate LID methods for stormwater reduction and treatment into development projects.
- Encourage communities to adopt zoning and subdivision regulations as well as Smart Growth incentives that reduce the amount of impervious surface areas in their communities.

BACKGROUND

The US Environmental Protection Agency (EPA) describes combined sewer overflows (CSOs) as sewers that are designed to collect rainwater runoff, domestic sewage, and industrial wastewater in the same pipe. Most of the time, combined sewer systems transport all of their wastewater to a sewage treatment plant, where it is treated and then discharged to a water body. During periods of heavy rainfall or snowmelt, however, the wastewater volume in a combined sewer system can exceed the capacity of the sewer system or treatment plant. For this reason, combined sewer systems are designed to overflow occasionally and discharge excess wastewater directly to nearby streams, rivers, or other water bodies. These CSOs, contain not only storm water but also untreated human and industrial waste, toxic materials, and debris. They are a major water pollution concern for the approximately 772 cities in the U.S. that have combined sewer systems. CSOs may be thought of as a type of "urban wet weather" discharge. This means that, like sanitary sewer overflows (SSOs) and storm water discharges, they are discharges from a municipality's wastewater conveyance infrastructure that are caused by precipitation events such as rainfall or heavy snowmelt.

Combined stormwater and wastewater sewage collection systems directly impact bathing and shellfishing areas of Long Island Sound (LIS) with untreated sewage entering the stormwater drains and flowing to the Sound. Such cross connections allow for bacterial and chemical contaminants to shut down economically important beaches and shellfish harvest areas.

The Bridgeport Wastewater Pollution Control Authority (WPCA) is currently in the process of updating its Long Term Control Plan (LTCP) and implementation schedule. The goal of the LTCP is to eliminate all CSO discharges for a 1-year storm event. Currently, Bridgeport has no dry weather CSOs but still has **34 active wet weather CSOs**.

The City of New Haven WPCA's CSO LTCP was approved by DEEP in 2003 and contained the old New Haven WPCA's plan to eliminate CSOs by 2020. The goal of the LTCP is to eliminate all CSO discharges for a 2-year storm event. Since the LTCP approval in 2003 and regionalization of the area sewer systems, 10 CSOs have been eliminated for a reduction of 22% CSO volume during a 2-year storm event. Currently, **twenty-eight (28) active CSOs remain in New Haven and discharge up to 51 million gallons per 2-year storm event into Long Island Sound**. The Greater New Haven Wastewater Pollution Control Authority (GNHWPCA) has recently updated the original City of New Haven's LTCP. The GNHWPCA continues its

program of sewer separation projects, infiltration and inflow improvements projects and is negotiating the scope of work for the initial phase of upgrading its East Shore Water Pollution Abatement Facility. The treatment plant upgrade will include an expansion of its hydraulic capacity for treating additional wet weather flows and improving nitrogen reduction processes at the treatment plant.

The Clean Water Fund has been utilized since the 1970's to reduce the 43 CSOs in the town of Norwich, CT down to 15. The current 15 CSOs discharge diluted, but untreated, waste into the Thames River basin (Shetucket, Thames and Yantic Rivers). The town of West Haven also used Clean Water funds to separate their CSOs which resulted in the water pollution control facility being able to adequately treat all its wet weather flows. Subsequently, commercial shellfishing was allowed in offshore areas of West Haven due to reduced coliform bacterial levels.

A 2007 Massachusetts report described 82 CSOs that flow to the Connecticut River. The CT DEEP 2007 Impact Evaluation for the Metropolitan District Long Term Plan reported 38 current CSO outfalls in the towns of Hartford, West Hartford, Bloomfield, Newington, Wethersfield, Rocky Hill, and Windsor discharging an estimated 1.04 billion gallons annually into those areas' tributaries.

Non-point source pollution is considered the number one water quality problem in the United States, and stormwater runoff is the primary contributor to non-point source pollution. Studies have shown that if 10-25% of a watershed is covered with impervious surfaces, water quality declines. With increasing levels of impervious covering, a greater proportion of the precipitation which falls runs over land, rather than infiltrating into soil, ending up eventually in Long Island Sound. Pollutants are introduced into stormwater runoff from a variety of sources including failing septic systems, lawn and garden care products such as fertilizers and pesticides, animal wastes, road and parking lot sands, salts and hydrocarbons. Ultimately, stormwater runoff can pollute drinking water wells, streams and ponds, as well as coastal waters and shellfish beds, adversely affecting the overall health of Long Island Sound.

The Phase II stormwater management requirements of the EPA mandate municipalities over a certain population size to address the issues of stormwater runoff. In 2004 the Department of Environmental Protection (DEP now DEEP) prepared the Connecticut Stormwater Quality Manual, which provides regulators and professionals with design recommendations to reduce and/or treat pollutant loads in stormwater runoff. Changes in legislation could prompt the adoption of stricter regulations to ensure incorporation of these design standards and Best Management Practices into site development plans.

Low Impact Development (LID) and Smart Growth

LID methods have proven to be effective in treating nutrients in stormwater runoff that are not treated effectively by engineered stormwater treatment devices. Incorporating strategies such as vegetated buffers along watercourses, bioretention swales, rain gardens and permeable pavement can help to manage stormwater runoff and reduce pollution.

Smart Growth initiatives have been shown to improve the water quality of stormwater runoff associated with land development. Smart Growth approaches allow communities to plan for development based on local needs and priorities; accommodating economic growth while protecting water quality and water supply. Restoring inner cities and older suburbs, cleaning up

and reusing abandoned brownfields, protecting open space and flood plains, and keeping development from encroaching on wetlands and prime agricultural lands are smart growth practices that can reduce the negative impacts of development. Other Smart Growth practices include phased development, grading and seeding, and using, where possible, porous pavement, while discouraging non-water dependent development on steep slopes, near wetlands and riparian corridors.

Smart Growth efforts have taken different forms around the country. Some communities have focused on preserving open space and clustering development to maximize the open ground that absorbs and filters storm water, while others have looked at creating more transportation options to reduce the number of new roads and parking lots they need to build. Still, in other localities, plans call for allowing a mix of uses to foster more compact development.

To summarize, there are two basic principles of Smart Growth that make it a good solution for stormwater management: building more compactly, and building on redevelopment and infill sites. More compact developments disturb less land and require less new impervious surface area per unit – whether a unit is a home or a square foot of commercial space – so they produce less construction runoff and less runoff per unit over time. Redevelopment and infill sites may require no new impervious surface and may actually reduce impervious cover. At the same time they increase the tax base existing communities can rely on to maintain their existing stormwater infrastructure.

Providing economic incentives to the building community to incorporate LID methods for stormwater reduction and treatment into site development plans is “smart” for all.

Best Management Practices (BMPs)

State agencies should provide design guidance for the engineering community and regulators implementing best management practices in the State’s stormwater management plan.

CT State Agencies should be encouraged to utilize best management practices including the following:

- Routine cleaning of roadways, annual cleaning of catch basins at bridge crossings and retrofitting existing basins with hooded traps and sumps, or filter bags in these locations to collect sediment before discharge into the waterways including from bridges.
- Implement additional sediment reduction controls making the strong connection between erosion and the need for costly dredging.
- Assist municipalities with pilot catch basin filter programs.
- Use non-toxic alternatives to treat roadside invasive species and weeds on roadways adjacent to waterways.

Local Code Enforcement Officials are often unable to effectively prevent sediment and erosion control problems. Effective sediment control greatly reduces the need for dredging in turn reducing the use of taxpayer dollars for costly dredging projects. Effective enforcement is needed by municipal officials for violators discharging wastes into the storm systems (catch basins) which flow to tributaries and Long Island Sound. Often such discharges go unaddressed unless a violation is reported or observed from a neighboring property. Permission by property owners

must be granted unless the local official has just cause to investigate a property. These types of discharges and sedimentation are easily hidden from sight unless the property is walked and surveyed and intersecting tributaries are sampled for contamination. This includes illegal dumping by commercial establishments.

SECTION 7

CLIMATE CHANGE, SEA LEVEL RISE AND COASTAL HAZARDS

REQUESTED ACTION

In order to minimize the potential negative impacts associated with climate change, sea level rise and coastal hazards, the Long Island Sound Assembly requests that the Connecticut General Assembly:

- Amend the Connecticut Coastal Management Act (CCMA) (C.G.S., Section 22a-90, et. seq.) by modifying coastal setbacks and freeboard requirements to comply with the federal mandates of the Coastal Zone Management Act.
- Urge state agencies to explicitly consider climate change and sea level rise (SLR) impacts in planning and permitting processes, and capital construction and infrastructure projects.
- Amend C.G.S., Sections 16a-24 through 16a-33 which mandates the development and updating of a State Plan of Conservation and Development (POCD) every five years to explicitly consider during the planning process the identification, adaptation to and mitigation of these impacts.
- Amend C.G.S. Section 8-23 which mandates that each municipality adopt and revise a POCD at least once every 10 years, to explicitly consider during the planning process the identification, adaptation to and mitigation of these impacts.
- Revise Title 28, Chapter 517 of the C.G.S., which addresses public safety and emergency planning, so that municipal and state emergency operations plans consider current and potentially increasing hazard vulnerabilities.
- Consider amending the state building code (C.G.S., Section 29-252) by adjusting high wind and establishing high water building, setbacks and freeboard requirements accordingly.
- Facilitate the adoption of updated FEMA floodplain regulations and maps in state and municipal regulatory and permitting processes.

- Develop outreach and education efforts for municipal administrators and coastal property owners about these impacts, and means of decreasing vulnerability.
- Extend administrative, technical and financial assistance to municipalities for development of adaptation plans to minimize negative environmental, economic and community impacts.
- Develop a green subdivision certification program similar to that in Georgia, as well as a Storm Smart program similar to that in Massachusetts.
- Adopt a law similar to California Proposition 22 to prohibit the State from seizing revenues dedicated to environmental services such as the Energy Efficiency Fund.

BACKGROUND

The most recent International Panel on Climate Change (IPCC) Assessment report (2007) states that evidence of a warming climate on earth is now undeniable and that the climate is already changing significantly in many regions of the world. This conclusion is supported by empirical evidence of increasing average global air and ocean temperatures, alterations in precipitation patterns, melting glaciers, changes in the seasonal loss of sea ice, increases in the numbers of wildfires, and rising global average sea level.

The IPCC predicts that even if greenhouse gas emissions were to remain at the level they were in 2000 (a substantial decrease from current emission levels), global average surface temperature will increase by 1.08 °F (with a range of 0.54 and 1.62°F) in the next 100 years. Higher emission scenarios projected by the IPCC yield surface temperature increases from 2 to 11.5°F. More localized models of New England project air temperature increases of about 2.5°F with a range of 4 to 9°F (Gornitz et al. 2004).

Associated with these predictions of air temperature changes are increases in sea level. With greenhouse gas emissions at 2000 levels (substantially lower than exist today), the IPCC projects a sea level rise between 7 and 23 inches by the end of the 21st century. Great uncertainties over the rate of melting of the Antarctic and Greenland ice sheets, in addition to other variables, limit the accuracy of these estimates. Other studies, such as Rahmstorf (2007), have forecast even higher rates of sea level rise. Connecticut is forecast to experience more rapid sea level rise than other areas due to subsidence associated with its recent geological history, with its land sinking at a rate of about 0.03-0.035 inches a year. Corresponding to this, local projections of sea level rise in Connecticut have forecast increases on the high end of IPCC projections, in the order of 9 to 35 inches by 2080 (Gornitz et al. 2004).

The CT DEEP and University of Connecticut Coastal Hazards Portal and Visualization Tool (<http://coastalhazards.uconn.edu/visualizationtool/>) provides a means of visualizing potential inundation impacts associated with different sea level rise scenarios.

Along the Connecticut coast of Long Island Sound, sea level rise will inundate coastal areas. Wetlands will be forced to migrate inland where topography permits. In areas where the migration of wetlands is prevented by elevation or development, these habitats may be

lost entirely thereby eliminating or reducing their ability to buffer storm surges, mitigate coastal flooding and ameliorate impacts to coastal development and upland ecosystems. Coastal wetlands act as “horizontal levees” and are associated with preventing approximately \$23 billion in damage each year on the northeast and gulf coasts according to Costanza et al. (2008). More specifically, the study found that on the Connecticut coast of the Long Island Sound (LIS), every 2.5 acres (approximately) of coastal wetland prevents about \$28,500 in storm damage on an annual basis. This is essentially a free environmental service provided by intact functioning coastal wetlands which, if they are diminished or eliminated by sea level rise, will have to be replaced by human-made levees or will result in increased losses of coastal properties.

Accompanying these predictions of higher average surface temperatures are projections for elevated sea surface and bottom water temperatures, with an estimated increase along the Northeast coast ranging from 4°F to 8°F (Frumhoff et al. 2007).

Recent research by the National Oceanic and Atmospheric Administration found that over the last four decades many North Atlantic fish stocks (half of the 36 fish stocks studied) have shifted north as ocean temperatures have increased, moving to stay in their preferred temperature zones (Nye et al. 2009). The 1999 die-off and on-going decline of Long Island Sound lobster stocks was attributable to a large extent by “sustained, hostile environmental conditions, driven by above-average water temperatures” which made the immune systems of lobsters more vulnerable to disease and pathogens, specifically paramoebiasis. (Balcom and Howell 2002).

Other impacts of rising water temperatures include environmental and human health problems caused by the proliferation of harmful algal blooms, waterborne diseases, pathogens, pests, predators, eutrophication and hypoxia events. These changes will also have economic impacts on both Long Island Sound aquaculture production and commercial harvesting operations.

One critical and understudied impact associated with increasing atmospheric carbon dioxide concentrations is the acidification of marine waters. Surface ocean pH has decreased by an average of 0.1 units since 1750 and yielded an over 30% increase in ocean acidity during the same time period (Allison et al. 2009). Acidification is projected to continue to increase over the next 50 years, decreasing average ocean surface pH to 7.9 or 7.8. As a coastal estuary, Long Island Sound possesses less buffering to pH changes than the open ocean and thus acidification impacts are projected to be greater. The potential ramifications of this acidification are enormous with coral reefs and calcifying organisms (e.g. shellfish) the most vulnerable and some deleterious impacts have already been observed. In Long Island Sound, given the economic importance of shellfish, impacts on oyster, mussel and clam production may pose a significant challenge.

Warm water is the “fuel” that drives hurricane-type storm events and with warming waters, it is predicted that there will be an increase in intense tropical hurricane activity in the North Atlantic, including Connecticut. This could cause a storm that has been considered to be a 100 year storm event to occur more frequently. Kirshen et al. (2008) have projected that by 2100 the frequency of the 100-year storm surge event in the New London/Groton area will increase, as compared to 2005, recurring every 3 to 50 years depending upon the emission scenario used in the model. More intense storms have the capacity to increase beach erosion and even lower intensity, but more frequent, winter storms may have significant erosive impact on the Connecticut shoreline (Johnson 2009). Connecticut has also been projected to experience more intense winter

precipitation events in the future (Frumhoff et al. 2007) and this coupled with storms of greater intensity is likely to cause more coastal and upland flooding events with corresponding increases in property damage.

These projected climatic changes coupled with increases in sea level will have impacts on the human population of Connecticut too. Connecticut is one of the most densely populated states in the nation. Forty percent of the state's population lives in 36 coastal municipalities, over 95% live within 50 miles of Long Island Sound and all live within watersheds that eventually drain to the Sound. Rising sea level will put more people and structures in high risk flood zones. Indeed new Federal Emergency Management Agency (FEMA) flood maps, which are currently being introduced around the state, have already indicated that this is true even without sea level rise. Insurance companies continue to assess these risks and are currently changing policies to require additional storm protections for structures and higher premiums to insure properties.

The Infrastructure Workgroup of the Adaptation Sub-Committee currently envisions greater damage to infrastructure like roads, bridges, dams, airports, railroads, ports, harbors, water, wastewater and electrical utilities resulting from these climate changes (CT Infrastructure Workgroup 2010). In addition, critical use facilities such as schools, government buildings, hospitals, and nursing homes will also be vulnerable to damage and disruption. The potential economic loss in Connecticut, including property losses and business interruptions, associated with a 100-year flood scenario has been estimated, using a FEMA HAZUS (risk assessment methodology) analysis, to be in the order of \$18,683,770,000, with the greatest losses in Fairfield, New Haven and Hartford counties (CT Infrastructure Workgroup 2010).

Given the preceding information and scenario outcomes, the question of how to respond to climate change and sea level rise needs to be answered with mitigation and adaptation. Mitigation refers to efforts to slow or reverse atmospheric changes resulting in climate change, and adaptation refers to efforts to develop strategies to adapt, reduce vulnerabilities and enhance resilience to climate induced changes and hazards. Connecticut has already developed a mitigation plan (2005), the *CT Climate Action Plan*, and is in the process of implementing it. Connecticut has also passed PA 08-98, *An Act Concerning Connecticut Global Warming Solutions*, which established an Adaptation Subcommittee composed of several workgroups: Natural Resources and Ecological Habitats, Infrastructure, Agriculture, and Public Health, which are currently finalizing their adaptation plans. Some municipalities are also engaged in developing mitigation and adaptation plans. Several CT municipalities are members of ICLEI (an international association of local governments committed to sustainable development) and have established climate change committees and taskforces, and have even begun planning for climate change and sea level rise. Other avenues for developing municipal climate change response plans include the plans of conservation and development (POCDs) which are revised every 10 years, and municipal emergency preparedness plans.

In 2005, seven New England and Mid-Atlantic states, including Connecticut, signed an agreement to create the Regional Greenhouse Gas Initiative (RGGI), a market-based emissions trading program aimed at reducing CO₂ emissions from power plants. The program, currently in operation, now includes 10 states and aims to cut CO₂ emissions by 10% by 2018. The funds generated by the RGGI program are earmarked for energy conservation efforts. In a misguided effort to balance their fiscal budgets in recent years, states, including New Hampshire, New Jersey and New York, have raided these funds for non-environmental programs. Last year

California passed Proposition 22 which prohibits the state, even during a period of severe financial hardship, from delaying the distribution of tax revenues for transportation, redevelopment, or local government projects and services. The initiative stemmed from the California State Legislature's action in 2009 when it raided approximately \$5 billion in such funds. In Connecticut, there have been transfers of funds and revenues designated for or generated by various state environmental programs to non-environmental uses. Examples of this include the recent move to transfer funds in the CT Energy Efficiency Fund, which are derived from Connecticut's electricity ratepayers and earmarked for energy conservation, to other uses.

The adoption of a law similar to California's would ensure that funds designated for environmental programs continue to remain in these programs. In essence, Connecticut needs to enact a law which would prohibit the state, even during periods of financial hardship, "from seizing, diverting, shifting, borrowing, transferring, suspending, or otherwise taking or interfering with revenues that are dedicated to environmental, energy efficiency and conservation, and renewable energy projects and services."

References and links are available at the LISA website: lisassembly.org

APPENDIX I
MEMBERSHIP OF THE LONG ISLAND SOUND
REGIONAL ADVISORY COUNCILS

Eastern Council

William Spicer, Chair

Honorable Thomas Marsh
Honorable William Fritz
Honorable Richard Smith
Honorable Paul Formica
Honorable Philip Miller
Honorable Fred Allyn
Honorable Dennis Popp
Honorable Harry Watson
Honorable Ralph Eno
Honorable Joseph Jaskiewicz
Honorable Lloyd Beachy
Honorable Peter Nystrom
Honorable Timothy C. Griswold
Honorable Michael A. Pace
Honorable Edward Haberek
Honorable Daniel Steward
Honorable Noel Bishop
Grant Westerson
Syma Ebbin
Thaxter Tewksbury
Thomas Simones
Marvin Schutt
Katrina Barrett
Diana Payne
Dr. K.J. Lee
Sidney Holbrook
William Clayton

Legislative Appointee

First Selectman, Chester
First Selectman, Clinton
First Selectman, Deep River
First Selectman, East Lyme
First Selectman, Essex
Mayor, Ledyard
Mayor, City of Groton
Mayor, Town of Groton
First Selectman, Lyme
First Selectman, Montville
Mayor, New London
Mayor, Norwich
First Selectman, Old Lyme
First Selectman, Old Saybrook
First Selectman, Stonington
First Selectman, Waterford
First Selectman, Westbrook
Governor’s Appointment
Governor’s Appointment
Governor’s Appointment
Governor’s Appointment
Governor’s Appointment
Legislative Appointment
Legislative Appointment
Legislative Appointment
Legislative Appointment
Legislative Appointment

Central Council

Joy Ford, Chair

Robert Silvestri, Co-Chair
Honorable Anthony DaRos

Designee, City of New Haven

Designee, Hamden
First Selectman, Branford

Honorable April Almon
 Honorable Carl Balestracci, Jr.
 Honorable Scott Jackson
 Honorable Al Goldberg
 Honorable Janet McCarty
 Shelley Wheeler-Carreiro
 Honorable James Zeoli
 Carol Martin
 Honorable John DeStefano
 Honorable John Picard
 Mark Paine
 Steven Sosensky
 Rives Potts
 Rosemarie Bonito
 Kristen Andrews
 Herbert Gram
 Joseph MacDougald

Mayor, East Haven
 First Selectman, Guilford
 Mayor, Hamden
 First Selectman, Madison
 Mayor, North Haven
 Designee, North Haven
 Mayor, Orange
 Designee, Orange
 Mayor, New Haven
 Mayor, West Haven
 Designee, West Haven
 Governor’s Appointment
 Governor’s Appointment
 Legislative Appointment
 Legislative Appointment
 Legislative Appointment
 Legislative Appointment

Western Council

Michael Griffin, Chair
Lisette Henrey, Co-Chair
 Honorable Evonne Klein
 Honorable Kenneth Flatto
 Mary von Conta
 Honorable Peter Tesei
 Honorable James Richetti, Jr.
 Lori Romick
 Honorable Richard Moccia
 Honorable Mark Lauretti
 Honorable John Harkins
 Honorable James Miron
 William Rock
 Honorable Michael Pavia
 Honorable Gordan Joseloff
 Alicia Mozian
 Clarinda Higgins
 Amy Townsley
 Joseph Riccio
 Mark Beekey
 Daniel Donovan
 Paul Shearer
 Jonathan Maggio

Designee Norwalk
Designee, Greenwich
 First Selectman, Darien
 First Selectman, Fairfield
 Designee, Fairfield
 First Selectman, Greenwich
 Mayor, Milford
 Designee, Milford
 Mayor, Norwalk
 Mayor, Shelton
 Mayor, Stratford
 Councilman, Stratford
 Designee, Stratford
 Mayor, Stamford
 First Selectman, Westport
 Designee, Westport
 Designee, Westport
 Governor’s Appointment
 Governor’s Appointment
 Governor’s Appointment
 Governor’s Appointment
 Governor’s Appointment
 Legislative Appointment

APPENDIX II

MEMBERSHIP OF THE LONG ISLAND SOUND ASSEMBLY

William Spicer, Chair
Joy Ford, Chair
Robert Silvestri, Co-Chair
Rosemarie Bonito
Michael Griffin, Chair
Lisette Henrey, Co-Chair

Susan McNamara

Eastern Council
Central Council
Designee, Hamden
Legislative Appointment
Western Council
Designee, Greenwich

Program Coordinator

APPENDIX III**FORMATION OF THE LONG ISLAND SOUND ASSEMBLY**

In 1989 the Connecticut General Assembly established the Long Island Sound Assembly ("LISA") and three Long Island Sound Advisory Councils ("Regional Councils") pursuant to Public Act No. 89-344.

The Long Island Sound Assembly is comprised of seven members from each of the three Regional Councils. The Regional Councils each consist of the chief executive officer of the various coastal municipalities (36 in total) within a given region (Eastern, Central, and Western) and nine other individuals appointed by the governor and house and senate leadership who represent academic institutions, industry, environmental experts and environmental organizations.

The Long Island Sound Assembly was charged with coordinating reports from the Regional Councils and submitting annual reports to the Connecticut General Assembly, DEP and the Connecticut-New York Bi-State Long Island Sound Committee concerning recommendations for the improvement of and public access to Long Island Sound (the "Sound") as well as a prioritization of the concerns of citizens as to the future of the Sound.

Although there are a number of agencies and environmental organizations which have been involved with Long Island Sound related issues, the Connecticut General Assembly, in creating LISA and the Regional Councils, acknowledged the importance of participation by those communities which are most affected by the Sound and its natural resources.

SUBSTITUTE SENATE BILL NO. 983
PUBLIC ACT NO. 89-344

AN ACT ESTABLISHING THE LONG ISLAND SOUND ASSEMBLY AND REGIONAL LONG ISLAND SOUND ADVISORY COUNCILS AND MAKING APPROPRIATIONS TO THE DEPARTMENT OF ENVIRONMENTAL PROTECTION FOR THE ASSEMBLY AND ADVISORY COUNCILS AND THE BI-STATE LONG ISLAND SOUND MARINE RESOURCES COMMITTEE AND ADDITIONAL STAFF FOR THE DEPARTMENT.

Be it enacted by the Senate and House of Representatives in General Assembly convened:

Section 1. (NEW) (a) There is established the Long Island Sound Assembly consisting of seven members of each Long Island Sound Advisory Council. The members shall be appointed

by the chairman of each advisory council, three of whom shall be chief executive officers, and four shall be appointed from the members of such councils appointed by the governor or the legislature, at least one of whom shall be a public member, one shall represent an environmental organization and one shall represent a volunteer or citizen organization.

(b) The assembly shall review the report of each advisory council submitted pursuant to section 2 of this act for compatibility with the reports of the other councils and for coordination with federal and state law and the activities of the Bi-State Long Island Sound Marine Resources Committee. The assembly shall submit a report of its review and any recommendations to the general assembly on or before January first, annually.

(c) The assembly shall hold its first meeting, to be called by the commissioner of environmental protection, on or before September 1, 1989.

Sec. 2. (NEW) (a) There are established three Long Island Sound Advisory Councils as follows: (1) An Eastern Long Island Sound Advisory Council consisting of the towns of Stonington, Groton, Ledyard, Preston, Norwich, Montville, New London, Waterford, East Lyme, Old Lyme, Lyme, Old Saybrook, Essex, Chester, Deep River, Clinton and Westbrook; (2) a Central Long Island Sound Advisory Council consisting of the towns of Madison, Guilford, Branford, East Haven, North Haven, Hamden, New Haven, West Haven and Orange and (3) a Western Long Island Sound Advisory Council consisting of the towns of Milford, Shelton, Stratford, Bridgeport, Fairfield, Westport, Norwalk, Darien, Stamford and Greenwich.

(b) The membership of each council shall be comprised of the chief executive officer, or his designee, of each municipality in such council and nine members as follows: One appointed by the president pro tempore of the senate, one appointed by the minority leader of the senate, one appointed by the speaker of the house of representatives, one appointed by the minority leader of the house of representatives, and five appointed by the governor, one of whom shall represent an academic institution located within the boundaries of the council, one of whom shall represent industry, one of whom shall be an environmental specialist, one of whom shall be a member of an environmental organization, and one of whom shall represent a volunteer or citizen organization. No more than four of the governor's appointments may be members of the same political party as the governor. The governor shall designate one of the members of each council appointed by him to call the first meeting of such council. The first meeting of each council shall be called on or before August 1, 1989. At the first meeting of each council a chairman and vice-chairman shall be elected by majority vote of the members of the council.

(c) Each council shall prepare a report concerning the use and preservation of Long Island Sound within its boundaries. Such report shall include, but not be limited to, provisions prioritizing the concerns of citizens and organizations for the future of Long Island Sound and identification of available resources concerning Long Island Sound. Such report shall be revised as each council deems necessary.

(d) Each council may organize, as it deems necessary, and utilize public or private resources in accomplishing its duties, including those made available from educational institutions and industry.

(e) Each council shall submit its report to the Long Island Sound Assembly not more than one year after the first meeting of such council. Any revision shall be submitted to said assembly within thirty days.

Sec. 3. The sum of seventy-five thousand dollars is appropriated to the department of environmental protection, for the fiscal year ending June 30, 1990, from any available sums appropriated to the finance advisory committee for such fiscal year, for 1989 acts without appropriations, for (1) the activities of the Long Island Sound Assembly, established under section 1 of this act, and the Long Island Sound Advisory Councils, established under section 2 of this act, (2) the activities of the Bi-State Long Island Sound Marine Resources Committee and (3) additional staff for the department of environmental protection to coordinate programs related to Long Island Sound.

Sec. 4. This act shall take effect from its passage except that section 3 shall take effect July 1, 1989.

For previous reports please visit: LISASSEMBLY.ORG

The End Notes below are references noted in the Preface (page 2 of this report) :

ⁱ Mark Parker, (2007) *Maritime Commerce Contributes to the Value of Long Island Sound*. Sound Outlook, CTDEP Newsletter. June, No. 25.

ⁱⁱ Marilyn A. Altobello, (1992) *The Economic Importance of Long Island Sound's Water Quality Dependent Activities* University of Connecticut, (unpublished report on file with LISS).

ⁱⁱⁱ Apex Companies LLC & FXM Associates. (2010) *Economic Impact Study of Maritime Industries in Connecticut*, (report prepared for CT Maritime Coalition Inc and CT DECD).
New London Day Editorial, (10/17/2011). *Study, then action, for Connecticut ports*.

^{iv} See chapter on Marine Living Resources for references.

^v Robert Costanza, et al. (2008). *The Value of Coastal Wetlands for Hurricane Protection*, Ambio June.