



A Partnership to Restore and Protect the Sound

**1999 CCMP
IMPLEMENTATION
TRACKING REPORT
January-December 1999**

**The
Comprehensive
Conservation and
Management Plan
May 2000**

**THE
LONG
ISLAND
SOUND
STUDY**



ACKNOWLEDGMENTS

This Report is the product of the Long Island Sound Study partnership of Federal, state, local and private agencies and organizations. The diversity of the Comprehensive Conservation and Management Plan for Long Island Sound increases the difficulty and complexity in obtaining the information and data for this report. We wish to thank the states of Connecticut and New York for their invaluable assistance in compiling the data for the report and in coordinating their efforts with the many other state and local agencies and organizations participating in the Study.

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Foreword



This 1999 report documents the fifth year of implementation of the *Long Island Sound Study (LISS) Comprehensive Conservation and Management Plan (CCMP) for Long Island Sound (LIS)*. This Report summarizes the continuing work of the *LISS Management Conference* partners in carrying out the 232 commitments and recommendations in the CCMP.

The LISS Management Conference is sponsored by the U.S. Environmental Protection Agency (EPA), the New York State Department of Environmental Conservation (NYSDEC), and the state of Connecticut Department of Environmental Protection (CTDEP). Additional partners include the:

- ❖ **Interstate Sanitation Commission (ISC);**
- ❖ **U.S. National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS);**
- ❖ **New York City Department of Environmental Protection (NYCDEP);**
- ❖ **U.S. Department of Agriculture Natural Resource Conservation Service (NRCS);**
- ❖ **New York State Department of State;**
- ❖ **LISS Technical Advisory Committee (TAC); and the**
- ❖ **LISS Citizens Advisory Committee (CAC).**

Many other federal, state, municipal academic, and local public and private organizations contribute to implementation of the CCMP. Among these are the:

U.S. Army Corps of Engineers (ACOE);

U.S. Department of the Interior's Fish and Wildlife Service (USFWS) and Geological Survey (USGS);

U.S. Department of Agriculture's Cooperative Extension Service;

Connecticut Department of Agriculture Bureau of Aquaculture (CTDOA/BA);

New York State and State of Connecticut Departments of Health;

New York and Connecticut Sea Grant programs;

New England Interstate Water Pollution Control Commission;

University of Connecticut (UConn) campuses; and

State University of New York (SUNY) campuses.

Together, these Federal, state, local, academic, and citizen partners combine their efforts to achieve the common CCMP vision for the long-term health, restoration, and economic well-being of Long Island Sound, its watersheds and tributaries, and living marine and marine-dependent resources.



Executive Summary



SUMMARY OF 1999 CCMP ACCOMPLISHMENTS

The most significant CCMP implementation accomplishment in 1999 was the development of a draft Total Maximum Daily Load (TMDL) for nitrogen in Long Island Sound. In November 1999 the states of New York and Connecticut released the draft TMDL for public comment, and extended the comment deadline into early 2000. The states and EPA are continuing work to finalize and issue the TMDL in 2000.

Interim to the final TMDL, both states have continued their commitment to reduce nitrogen loads from sewage treatment plants (STPs), and the loading trend from these point sources continues downward.

Nitrogen Loading Down

In 1999 the total point source nitrogen load to the Sound was estimated at 151,245 lbs/day, a decrease of nearly 36,000 lbs/day from 1990 levels, and nearly 10,000 lbs/day less than 1998. New York loadings totalled 105,759 lbs/day; Connecticut loads totalled 45,486 lbs/day.

Hypoxia Monitoring Continued

As LIS nitrogen loads continued to decrease in 1999, the primary indicator of excessive nitrogen, low (< 3mg/l) dissolved oxygen (DO) lessened in the Sound in 1999. The maximum area of low DO in LIS was estimated at 314 square kilometers (km²)(121mi²), with an overall duration of 50 days. This was less than the 1998 levels of 436 km² (167 mi²) and 73 days, and less than the 10 year averages of 470 km² (181 mi²) and 57 days.

Progress on Habitat Goals

The States of Connecticut and New York made good overall progress toward the LISS goal of restoring 2000 acres of tidal wetlands and 100 miles of river corridors for anadromous fish access within 10 years. To date, Connecticut has restored 68

acres of tidal wetland habitat, treated or retreated many acres of phragmites-infested habitat, and restored 22.5 miles of river corridor to anadromous fish access. The state of New York Department of Environmental Conservation awarded over \$2.5 million in 1999 Bond Act funds to communities on Long Island and in Bronx and Westchester counties for 9 projects to restore over 85 acres of aquatic habitat.

The LISS selected 373 sites for restoration, 228 in Connecticut, and 145 in New York, from the 450 sites nominated in both states. A total of 111 sites in both states have been designated as high-priority sites.

Addressing Toxic Contamination, Pathogens and Floatable Debris

Communities on and around the Sound are continuing to adopt watershed management-based approaches to controlling sources of pollution to the Sound, including point and nonpoint sources, CSOs, and land use practices. Many communities have formed watershed management committees or groups that cross local, municipal, or even state jurisdictions, to work together in addressing environmental management problems that have no boundaries.

New LIS Research Fund

The Management Committee established a new research program fund in 1999. The committee approved an initial \$100,000 for the fund from the LISS Federal appropriation. In addition, the New York and Connecticut Sea Grant programs contributed an additional \$25,000 each for a total 1999 fund of \$150,000. The LISS issued a Request for Proposals in November 1999 that netted 30 proposals totalling over \$3,000,000 in funding. Research projects will be selected after peer review in early 2000.

Reaching and Educating the Public

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The LISS outreach and education programs continued to conduct many meetings, conferences and workshops attended by hundreds of public officials and concerned citizens.

The Citizens Advisory Committee (CAC) met in March, June, September, and December in 1999, and developed key recommendations to the Policy Committee, especially endorsing the creation of a Long Island Sound Reserve system, as called for in the CCMP. The CAC supported increased Federal funding to match the significant state financial commitments to the Sound, and provided comments on the draft TMDL for the public record.

At the initiative of the CAC, the LISS produced and distributed 5,000 copies of a series of four nonpoint source management posters that use humor to persuade people to take personal action to pick up after their pets, repair automobile oil leaks, reduce use of home fertilizers, and use conservation techniques when washing the car.

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The LISS produced and distributed many thousands of copies of its quarterly LIS newsletter, *UPDATE*, as well as fact sheets, publications, and brochures covering timely and critical LIS topics. Many of these documents were posted on the LISS web page: <http://www.epa.gov/region01/eco/lis>. The LISS webpage continued to be the most visited page on the EPA New England Region website, with over 35,000 hits in 1999, or nearly 3,000 per month.

LISS staff continued to provide LIS displays at annual public events, such as Earth Day and LIS Days in Connecticut and New York; the Norwalk Oyster Festival, New Haven County Conservation Fair; address scores of teachers, educators, school children, groups and classes; and issue press releases, make public service announcements, and give radio and press interviews on LIS issues.



About the 1999 Report



UNDERSTANDING THIS REPORT

As in 1998, this 1999 CCMP Implementation Tracking Report is organized into seven sections, each corresponding to the seven priority management areas identified in the CCMP:

- 1) Continuing the Management Conference;
- 2) Hypoxia;
- 3) Pathogen Contamination;
- 4) Toxic Substances;
- 5) Floatable Debris;
- 6) Management and Conservation of Living Resources and Their Habitats; and
- 7) Public Involvement and Education.

Each of these sections contains a brief narrative that highlights accomplishments of the Management Conference in that area in 1999.

The charts following each narrative section in this report correspond to the appropriate table in the CCMP for each priority area. For tracking purposes, numbers have been assigned to each original CCMP action, e.g., H1-5 for Hypoxia, priority problem area number 1, action number 5, "Conduct feasibility studies and pilot demonstrations for nitrogen removal at 13 of 14 NYC STPs..."

The charts contain self-explanatory information on each of 232 action items identified in the CCMP, such as:

- ! Responsible Parties;
- ! Status;
- ! Description; and
- ! Upcoming Action

The charts distinguish actions under each of the seven priority areas as either:

*Ongoing Programs or
CCMP Actions.*

Ongoing Programs support CCMP commitments through the continuing environmental programs of the Management

Conference, such as state permitting, enforcement, or monitoring programs.

CCMP Actions are specific activities described in the CCMP that directly implement the LISS, and are further identified by Type as:

- N Commitment; or*
- N Recommendation.*

Commitments are programs for which the CCMP identified existing funding sources;

Recommendations are programs for which no existing funding streams had been identified.

Estimated Cost is provided if the 1994 CCMP established projected funding for the proposed action item.

CCMP Actions with target dates are designated as:

- Complete;
- Ahead of Schedule;
- On Schedule;
- Behind Schedule;
- Partially Addressed;
- Not Initiated.

For the convenience of the reader, *CCMP Actions that have been Completed* are "greyed out" in the report.

Status for Ongoing Programs or continuing CCMP Actions is designated as:

- "Fully Met;
- "Substantive Progress;
- "Partial Progress;
- "Discontinued.

An Annual Snapshot of Progress

Because of the inherent long-term nature of initiating and assessing the results of environmental restoration and improvement efforts, this report should be viewed as a one-year snapshot of accomplishments against the 232 actions identified in the CCMP. This report is not an expression of environmental results.

Long Island Sound Study

Environmental Indicators

The LISS is continuing to develop a basic set of environmental indicators for Long Island Sound, with an ultimate goal of linking progress on the CCMP to actual environmental improvements in the Long Island Sound ecosystem. In this way, environmental results may be used in the future to assess the effectiveness of CCMP actions, and the Management Conference will be in a better position to consider and adjust CCMP plans, actions, and resources according to the environmental results desired or achieved.

The Management Conference partners plan to issue the first Long Island Sound environmental indicators report in 2000.

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IMPLEMENTING THE PLAN – 1999

Of the 232 action items identified in the CCMP, 28 percent (65) are being carried out by the Management Conference partners as part of their ongoing federal, state, or local environmental management programs. Substantive progress has been reported on the majority of *Ongoing Programs*.

The remaining 167 CCMP Actions represent 72 percent of the CCMP. Of these in 1999, 33 are reported as *Complete*; 38 are reported as *Substantive Progress/Fully Met*; 59 are reported as *Partial Progress/Behind Schedule*; and 34 are reported as *Not Initiated*, Three actions have been *Discontinued*.



Continuing the Management Conference

Carrying out the CCMP is the combined responsibility of the Management Conference partners. Through their ongoing programs and operations, and through Federal, state, local, and private LIS funding initiatives and activities, CCMP priorities are assessed and implemented.

Strategy:

The essential element of the CCMP implementation strategy was to continue the Management Conference partnership in carrying out the CCMP. There are 13 actions identified in the CCMP to address this strategy, many of which have been accomplished, and which were key to the viability of the LISS partnership. Federal legislation in 1990 created the EPA Long Island Sound Office to bridge the bi-state, multi-agency and public/private stakeholder efforts to restore and protect the Sound. The Long Island Sound Agreement, signed by the Governors of New York and Connecticut and the EPA Administrator in 1994, and updated in 1996, formally committed the agency and the states to the Management Conference as a primary means of coordinating CCMP work to restore and protect LIS. The Clean Water Act was amended in 1996 to extend the Management Conference and authorize continued federal funding.



Highlights:

- The New York and Connecticut Sea Grant Program Directors were added as full members of the Management Committee in 1999. This action enhances the capability of the LISS to communicate and address issues of concern to LIS stakeholders.
- The Management Committee met quarterly in January, April, July, and October 1999. Management Committee meetings follow the quarterly CAC meetings, which enables committee members to more quickly consider and respond to issues identified by the CAC.
- The Citizens Advisory Committee provided comments for the public record concerning the draft nitrogen TMDL that was released for public comment in 1999. The CAC also strongly supported the creation of a Long Island Sound Reserve in testimony before Congress in October 1999.
- The Management Committee continued to explore methods to increase local and municipal participation in the work of the Conference in 1999. The Committee approved funds in 1999 to conduct a second municipal conference to be co-hosted by the City of Stamford and the town of Glen Cove, Long Island in June 2000.

SUMMARY OF MANAGEMENT ACTIONS: CONTINUING THE MANAGEMENT CONFERENCE

1. SUPPORTING IMPLEMENTATION (CCMP TABLE 50, P. 141)							
CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
M1-1. Formally extend the Management Conference for a minimum of five years to continue coordination and oversee implementation of the management plan. The Citizens Advisory Committee will remain part of the Management Conference structure.	C	EPA Administrator	Initiated upon approval of the plan. Completion date July 1, 1994.	Redirection of base program	Complete	The 1994 Long Island Sound Agreement committed the EPA and states to continue the Management Conference. §119 of the CWA was modified in 1996 to extend the Management Conference and authorize continued funding.	
M1-2. Continue and expand the role of the EPA Long Island Sound Office, consistent with the requirements of the LIS Improvement Act of 1990. Funding is available in FY 1994, but will be required in future years.	C	EPA Regions I and II	Ongoing. The office has facilities in Stamford, CT and Stony Brook, NY	Operational costs approximately \$175,000 per year	Fully Met	EPA continued to provide support for Long Island Sound Office under §119 and §320 of the CWA Act. In 1999, the EPA Administrator has proposed funding for the Long Island Sound Office as part of EPA's FY2001 budget.	
M1-3. Continue state program coordination and involvement in the Management Conference. Funding is available in FY 1994, but will be required in future years.	C	EPA-LIS Office	Ongoing, starting in FY 1994.	\$150,000 per year	Fully Met	The Management Conference provided funding for state coordination efforts through FY 1999.	
M1-4. Maintain public involvement and education efforts with an added focus on local government involvement. Funding is available in FY 1994, but will be required in future years.	C	EPA-LIS Office	Ongoing, starting in FY 1994	\$150,000 per year	Fully Met	The LISS has continued support for its public outreach and education program. See the <i>Public Involvement and Education</i> section for details.	
M1-5. Establish delegation of authority to allow the EPA Long Island Sound Office to support projects of studies as authorized by the Long Island Sound Improvement Act.	C	EPA-Headquarters	Upon approval of the plan	Redirection of base program	Complete	Delegation of Authority No. 2-94 was authorized by the EPA Administrator November 1, 1994.	
M1-6. Advocate modification to Clean Water Act § 320(g)(2) to allow the EPA to provide base funding through cooperative agreements to National Estuary Programs that complete their management plans.	C	CTDEP NYSDEC	Ongoing	Redirection of base program	Complete	EPA has provided post-CCMP funds to the Management Conference under CWA§320. Legislation passed in 1996 allows EPA to fund the Management Conference's implementation of the CCMP with federal funds.	

KEY

1) Type: Commitment; Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated

Status for ongoing programs and ongoing CCMP actions: Fully Met, Substantive Progress, Partial Progress, Discontinued

1. SUPPORTING IMPLEMENTATION (CCMP TABLE 50, P. 141)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
M1-7. Develop a coordinated monitoring plan to assess the effectiveness of implementation, considering innovative approaches and building upon existing programs.	C	LISS	Completed in early 1994	\$25,000	Complete	A LISS monitoring workshop was held in 1993. The workshop integrated findings of the LISS to develop a comprehensive, Soundwide monitoring plan. Portions of the Monitoring Plan are being implemented. Ongoing coordination is facilitated by a monitoring workgroup. A LIS Marine Monitoring Network of several moored, continuous data stations was established in 1999 under EPA's EMPACT program.	
M1-8. Coordinate data management efforts between Long Island Sound and New York-New Jersey Harbor Estuary Program (HEP), including support for a systemwide data manager.	C	LISS and HEP Management Conferences	Funded for 1994	\$25,000 per year from each program	Partial Progress	Both the HEP and LISS funded efforts to identify and load priority datasets onto a common Internet access server. The focus of efforts is to make data easily accessible over the Internet.	
M1-9. Modify the current structure of the LISS as needed to oversee implementation of the plan.	C	LISS Management Conference	Completed by the end of 1994	Redirection of base program	Complete	The Management Conference has been refocused. The Citizen Advisory Committee has been expanded, the Technical Advisory Committee reestablished, and implementation teams and work groups have continued.	
M1-10. Ensure that the LISS is consistent with existing state coastal zone management (CZM) policies.	C	EPA	Concurrent with the submittal of the plan to the Governors of New York state and Connecticut	Redirection of base program	Complete	The LISS CCMP was judged to be consistent with the state coastal zone management policies.	
M1-11. Incorporate relevant elements of the plan into the state CZM program for federal consistency review.	C	CTDEP NYSDOS	Complete by the end of 1994	Redirection of base program	Substantive Progress	NYSDOS's LIS Coastal Management program to incorporate water and habitat quality concerns identified in the LISS CCMP. NYSDOS convened a LIS Coastal Advisory Commission in 1999 to advise the NY Secretary of State on program implementation. CTDEP considers the LISS CCMP in carrying out its CZM policies. The CCMP was incorporated in the Coastal Nonpoint Pollution Control Program in CT.	

KEY

1) Type: Commitment; Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated
Status for ongoing programs and ongoing CCMP actions: Fully Met, Substantive Progress, Partial Progress, Discontinued

1. SUPPORTING IMPLEMENTATION (CCMP TABLE 50, P. 141)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
M1-12. Continue to support and enhance data management, analysis and reporting.	R	LISS Management Conference	Ongoing	\$200,000 per year	Substantive Progress	Data analysis and reporting of hypoxia monitoring by CTDEP, ISC, and NYCDEP have been expanded in 1999. Each agency continued its monitoring activities and made available all data. In addition, a monitoring work group completed a 1998 <i>State of the Sound</i> report and finalized its 1999 report in early 2000. CTDEP is storing data in the <i>ACCESS</i> computer program. These stored data will also be loaded into <i>STORET</i> .	CTDEP and NYSDEC are planning to participate in EPA's Coastal 2000 Initiative for LIS.
M1-13. Prepare an annual progress report on implementation including recommendations to redirect efforts.	R	LISS Management Conference	Ongoing	\$35,000 per issue; included under operational costs of LIS Office.	Fully Met	An annual 1998 CCMP Implementation Tracking Report was completed in May 1999. The LISS successfully completed EPA's Biennial Review process in 1999.	The 1999 report will be finalized by May 2000.

KEY

1) Type: Commitment; Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated
Status for ongoing programs and ongoing CCMP actions: Fully Met, Substantive Progress, Partial Progress, Discontinued

Eliminating Adverse Impacts of Low Dissolved Oxygen in the Sound

The Long Island Sound Study identified low dissolved oxygen (hypoxia) as the most significant water quality problem in LIS. Since 1990, EPA and the States of Connecticut and New York have implemented a phased program that first capped, and will subsequently reduce, human-caused nitrogen loads to LIS over a 15-year period.

Strategy:

The CCMP identified a five part strategy to address the elimination of adverse impacts of low dissolved oxygen in the Sound: 1) reducing nitrogen from sewage treatment plants (STPs) and other point sources; 2) reducing nitrogen loads from nonpoint sources; 3) continuing management of hypoxia; 4) funding implementation of hypoxia management plans; and 5) monitoring and assessing hypoxia. There are 8 *Ongoing Programs* and 35 *CCMP Actions* to implement this strategy. In 1999, of the 35 *CCMP Actions*, 13 are reported *Complete*; 8 *Substantive Progress/Fully Met*; 10 *Partial Progress/Behind Schedule*; 3 *Not Initiated*; and 1 *Discontinued*.



Highlights:

- The states of New York and Connecticut released a draft Total Maximum Daily Load (TMDL) for nitrogen to public comment in November 1999. The TMDL is consistent with the July 1998 *Phase III Actions for Hypoxia Management*, a bi-state agreement calling for a 58.5 percent reduction in human-caused (anthropogenic) nitrogen loads to the Sound over a 15 year period beginning in 1999.

The agreement includes interim targets to achieve 40 percent of the goal in 5 years, and 75 percent of the goal in 10 years. This level of reduction is expected to reduce the maximum area of the Sound that is unhealthy for fish and shellfish by 75 percent, and the duration of unhealthy conditions in the Sound by 85 percent.

- The estimated nitrogen load from STPs in the LIS drainage basin that entered the LIS in 1999 is approximately 151,245 lbs/day, a decrease of nearly 36,000 lbs/day from 1990 levels, and nearly 10,000 lbs/day less than 1998.
- New York's 1999 point source nitrogen loading was 105,759 lbs/day, compared with 110,595

lbs/day in 1998. Connecticut's point source nitrogen loading was 45,486 lbs/day in 1999 compared with 49,846 lbs/day in 1998. Figure 1 shows point source nitrogen load trends in New York and Connecticut since 1990.

- In 1999, the maximum area and duration of dissolved oxygen (DO) levels less than 3 mg/l in LIS was 314 km² (121 mi²) and 50 days. This was less than the 1998 levels of 436 km² (168 mi²) and 73 days, and below the 10 year average of 470 km² (181 mi²) and 57 days. Figure 2 shows the timing and duration of hypoxia in LIS since 1987; Figure 3 shows the maximum area of hypoxia in LIS since 1990; Figure 4 shows the percent of the total area of LIS hypoxic conditions from 1990.
- Both states continued to prioritize funding for nonpoint source pollution control projects benefitting the Sound.
- The Norwalk River Watershed Advisory Committee met monthly in 1999 to guide implementation of the Plan.
- The lawsuit initiated in 1998 by NYSDEC

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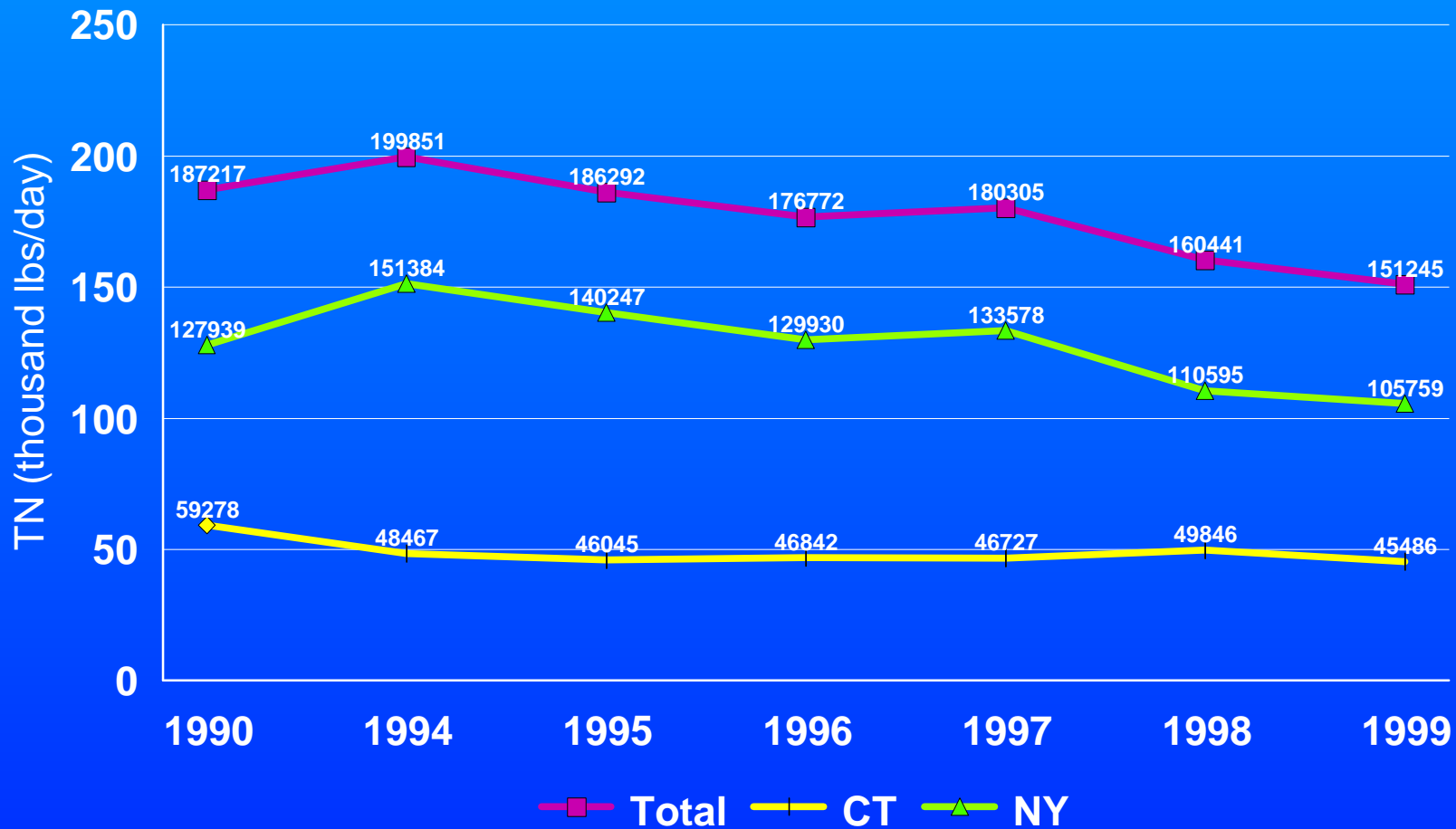
against New York City for violations at its sewage treatment facilities has been resolved. Under the resolution, New York City will pay \$1.5 million (\$50K penalty to NYS and \$1 million into a trust account to be established by the Hudson River

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Foundation) and will undertake plant and sewer system upgrades.

❖❖❖❖

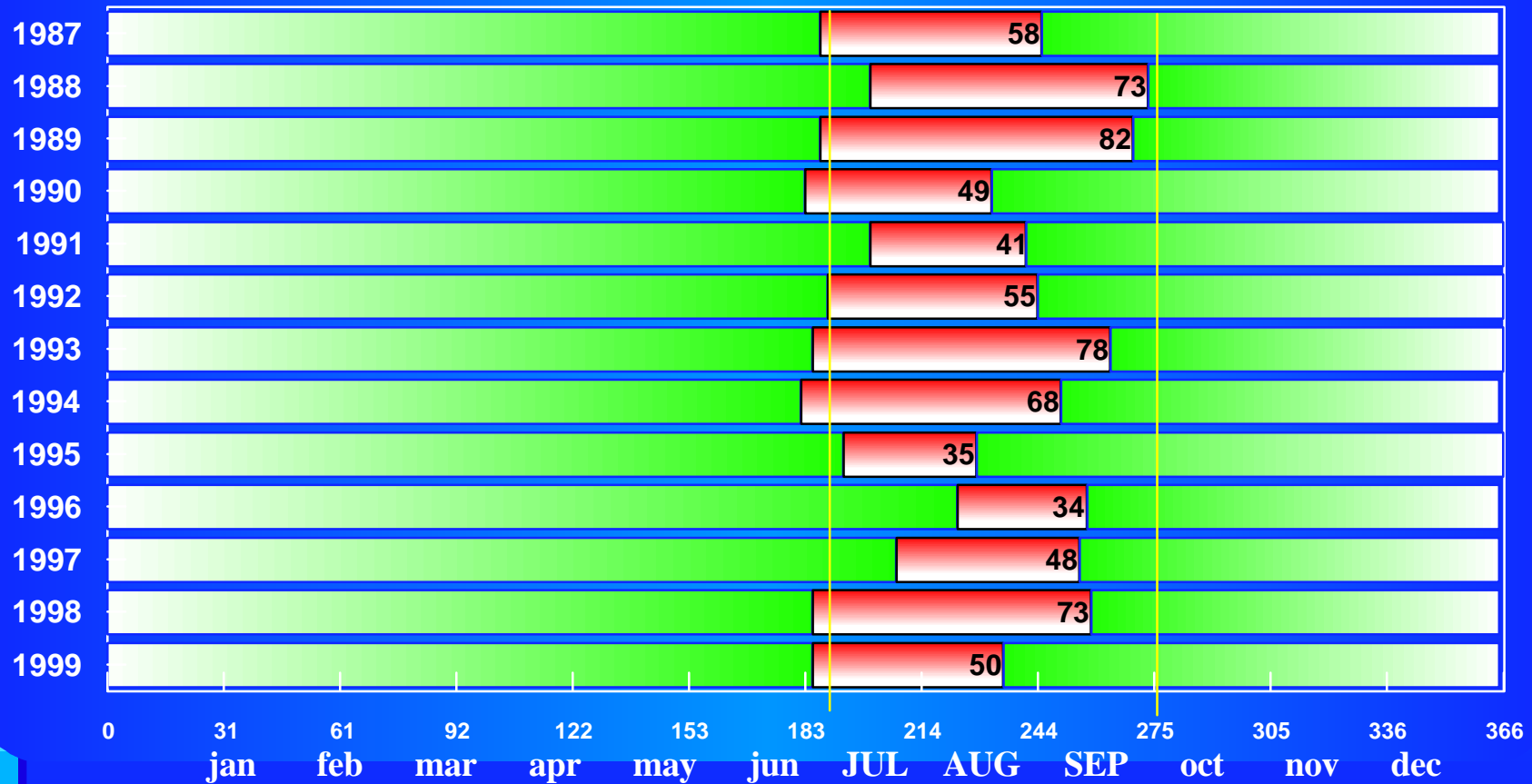
Fig. 1: Point Source Nitrogen Load to Long Island Sound



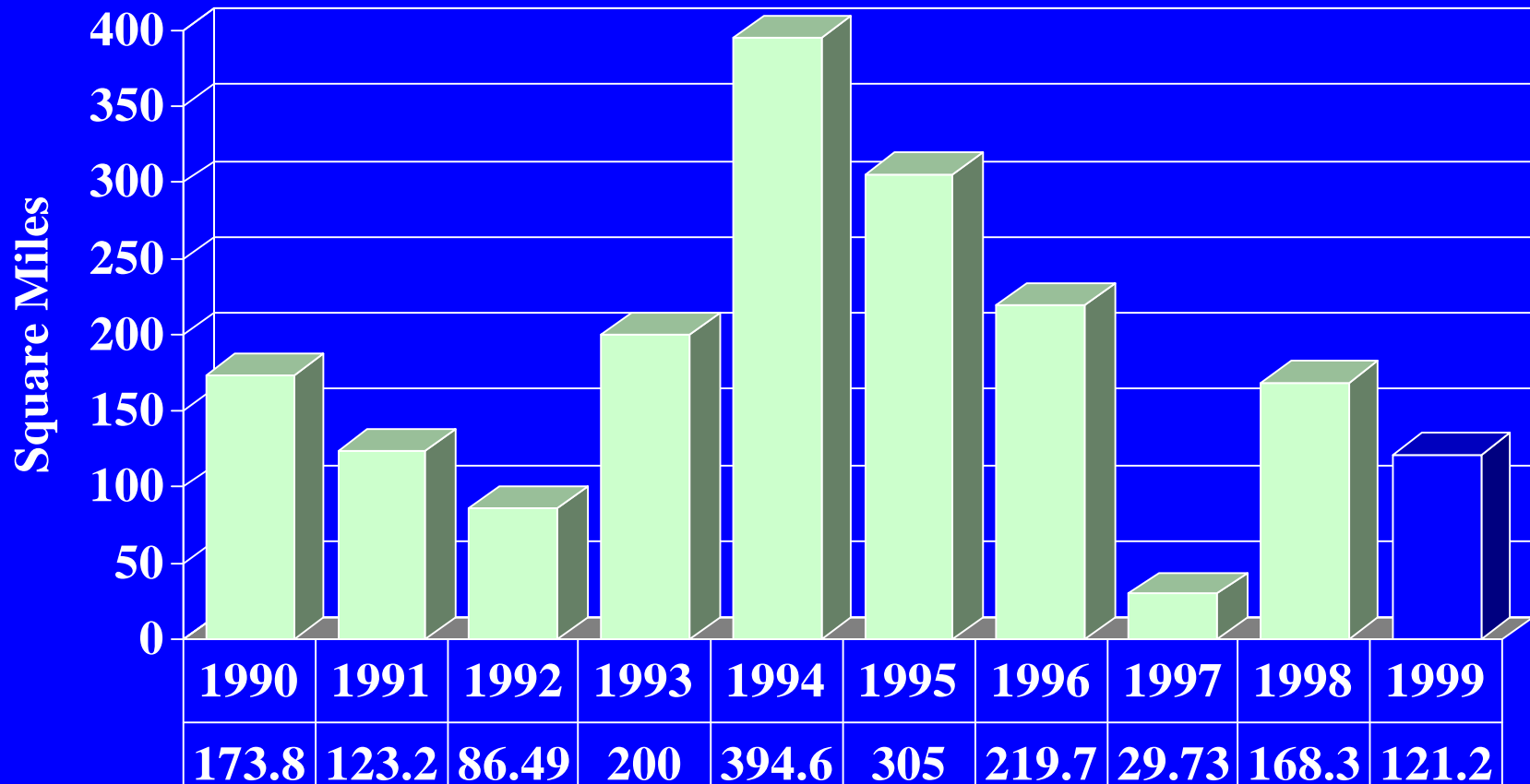
These estimates include 98 municipal, 4 state, 3 private, and 4 industrial discharges = 109

Fig. 2: Timing and Duration of Hypoxia in Long Island Sound

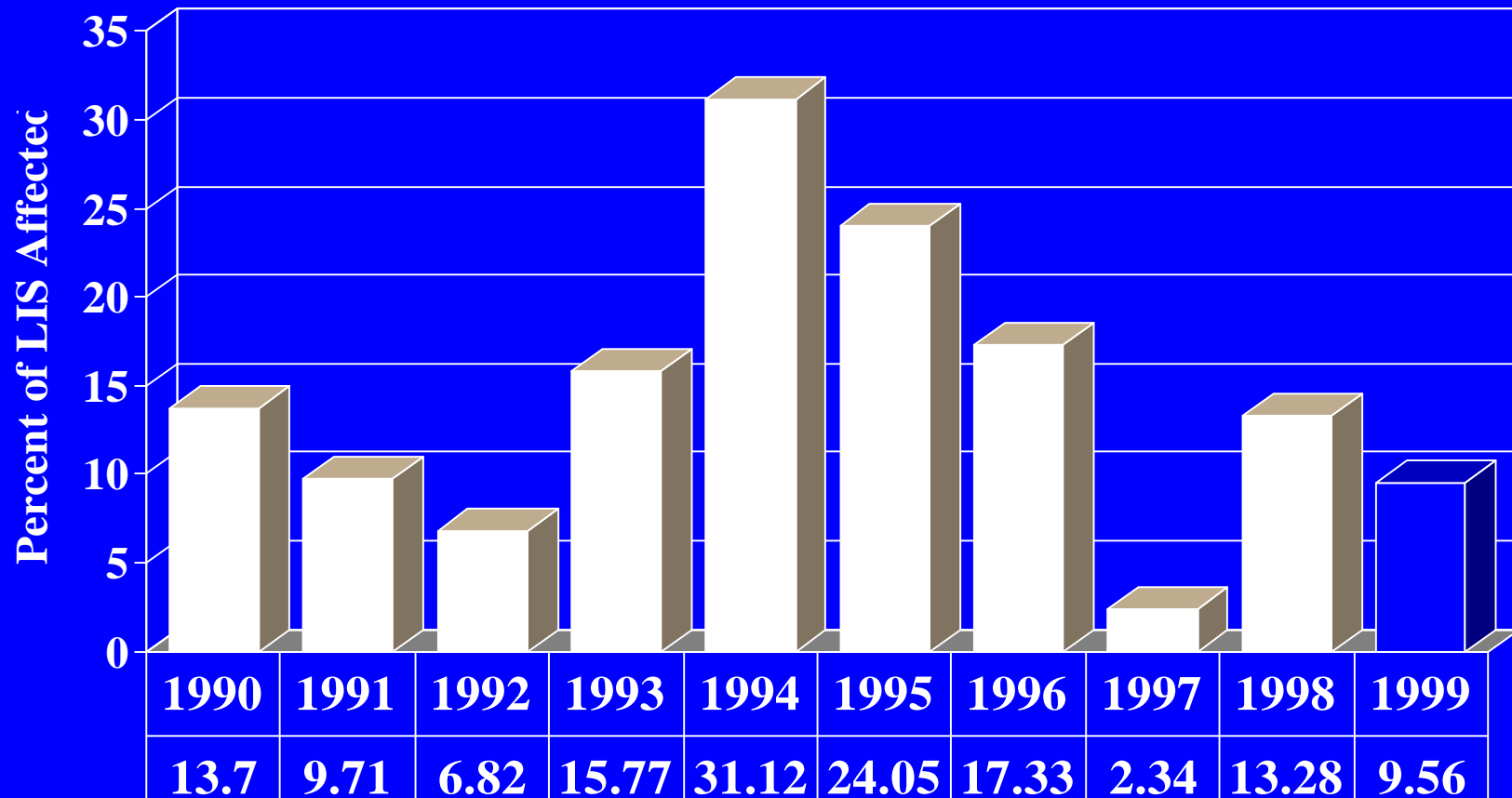
1987-1990 University of Connecticut
1991-1999 Connecticut Department of Environmental Protection



**Fig. 3: Maximum Area of
Long Island Sound
During Summer Hypoxic Event
(D.O. Concentrations Less than 3.0 mg/l)**



**Fig. 4: Percent Total Area of
Long Island Sound
During Summer Hypoxic Event
(D.O. Concentrations Less than 3.0 mg/l)**



SUMMARY OF MANAGEMENT ACTIONS: HYPOXIA

1. REDUCING NITROGEN FROM SEWAGE TREATMENT PLANTS AND OTHER POINT SOURCES (CCMP TABLE 4, P. 32)				
Ongoing Programs	Responsible Parties	Status ²	Description	Upcoming Action
H1-1. The states of New York and Connecticut will continue their point and non-point source permitting and enforcement programs as a primary mechanism of pollutant load reduction. Fundamental to the direction of these programs are the states' water quality standards and classifications that provide the basis for management policies and decisions.	CTDEP NYSDEC	Substantive Progress	<p>In Connecticut, CTDEP has used this authority to implement nitrogen retrofits at sewage treatment plants, encourage full upgrades for nitrogen removal at plants scheduled for reconstruction and reduce nitrogen loads at major industries.</p> <p>In New York, NYSDEC issued permits with nitrogen limits requiring compliance with 1990 "no-net-increase" load limits. Limits for the NYC STPs went into full effect on January 1, 1997. NYSDEC filed suit against NYCDEP in March 1998 for not meeting these limits. In June 1999, the suit was resolved. Through implementation of the NYCDEP nitrogen control program, the four Upper East River WPCPs are now operating well below the aggregate SPDES effluent limits for total nitrogen.</p>	New denitrifying facilities are planned for Branford (2001), Fairfield (2001) and upgrade to the Stamford facility (2001). Nitrogen permit and trading programs are under development in Connecticut.
H1-2. The state of New York will ensure compliance with the consent order to upgrade the Newtown Creek plant to provide secondary treatment with biological nutrient removal retrofit modifications.	NYSDEC NYCDEP	Substantive Progress	<p>A two track facility plan for upgrading Newtown has been approved by NYSDEC. The plan is to provide 50% influent nitrogen removal either through step denitrification or through the use of biofilters. Estimated project cost is \$2 B, with construction to be completed by 2010. A \$12 million biofilter evaluation (4 mgd capacity) began operation in December 1996. In 1997, the biofilter was evaluated and final design for Phase I common elements was completed.</p> <p>NYCDEP has submitted a track III facility plan (cost \$1.3 B) which would achieve secondary treatment at Newtown Creek and the NYCDEP would remove additional nitrogen at the four Upper East River plants to meet the original intent of the Newtown Creek consent order. The NYSDEC is currently reviewing the track III proposal.</p> <p>Upgrading and expansion construction is continuing with Phase VI.</p>	New additions planned for the facility include a new wing to the main building, a support and disinfection building, sludge handling facilities, a sludge force main/docking facility and aeration upgrades.
H1-3. The state of Connecticut will freeze nitrogen discharges and, if appropriate, explore opportunities to reduce nitrogen discharges at three industrial facilities with significant nitrogen discharges.	CTDEP	Fully Met	<i>Upjohn</i> has discontinued production, is no longer treating process water, and is currently conducting ground water remediation <i>Pfizer's</i> treatment facility has been in operation over 2 years and a manufacturing process has been discontinued which formerly had generated high nutrient waste. <i>Pfizer's</i> waste water nutrient loads are less than 25% of baseline. <i>Cytec</i> was issued a new permit (April 1998) which included language to conduct a scope of study to evaluate options for treatment of total nitrogen in its waste water. A report has been submitted to CTDEP. The <i>Cytec</i> permit expires 2003.	CTDEP will be reviewing the <i>Cytec</i> scope of study report.

KEY: 1) Type: Commitment; Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated
 Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

1. REDUCING NITROGEN FROM SEWAGE TREATMENT PLANTS AND OTHER POINT SOURCES (CCMP TABLE 4, P. 32)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
H1-4. The municipalities in the states of Connecticut and New York will implement biological nutrient removal retrofits to reduce the load of nitrogen to the Sound on an interim basis.	C	CTDEP	By 1995	\$18.1 M	Complete	CT State Clean Water Fund awarded \$15 M to retrofit 11 southwestern Connecticut sewage treatment plants. All the projects have been completed and have resulted in achievement of the Phase II reduction goal of 850 tons per year.	Keep running the facilities as designed under the Phase II retrofit program.
		NYSDEC	1995 for 5 plants 1996 for 4 plants 2000 for centrate	\$103.1 M	Substantive Progress	<p>NYCDEP presented a comprehensive progress report on its efforts at a December 1999 session. Biological Nutrient Reduction (BNR) retrofits at upper East River facilities resulted in attainment of permit limits by July 1998.</p> <p>The total point source nitrogen load to LIS in 1999 was 151,245 lbs/day, well-below the 1990 target of 187,217 lbs/day. In CT, the point source load to LIS was 45,486 lbs/day; in NY the point source load was 105,759 lbs/day.</p> <p>Three projects will be awarded approximately \$38 M from NYS Bond Act funds in 2000.</p> <p>The County of Westchester Board of Legislators approved bonds to fulfill federal mandates and upgrade STPs. The STPs in Port Chester, Mamaroneck and New Rochelle will receive \$2.6, \$8, and \$11.5 million dollars, respectively.</p>	NYS Bond Act funds will continue to be awarded and more projects will be initiated.
H1-5. Conduct feasibility studies and pilot demonstrations for nitrogen removal at 13 of its [NYC] 14 sewage treatment plants, with actual design for Newtown Creek.	C	NYCDEP	1994-1998	\$5 M	Complete	NYCDEP completed a Nitrogen Control Feasibility Plan in December 1998 to identify the feasibility of removing nitrogen from each of its 14 STPs.	NYCDEP will continue conducting pilot work to test new processes and technologies.
H1-6. Westchester County will investigate sludge rehandling at their four facilities to determine if opportunities exist for nitrogen load reduction.	C	Westchester County	1993-1994	\$500,000	Substantive Progress	Westchester County will hire a contractor to haul away liquid sludge from its STP in Port Chester. The new contract means that trucks will haul the sludge produced at the Blind Brook and Port Chester plants, which is now burned in Port Chester, to a facility in New Jersey and turn it into a product that could be used either in landfills or for open space reclamation in Pennsylvania. This is expected to reduce the amount of nitrogen that the county dumps into Long Island Sound from Port Chester by 3 percent.	Westchester Count will begin phasing out the use of incinerators at the Port Chester STP by May 1, 2000.

KEY: 1) Type: Commitment; Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated
 Status for Ongoing Programs and ongoing CCMP Actions: Fully Met, Substantive Progress, Partial Progress, Discontinued

1. REDUCING NITROGEN FROM SEWAGE TREATMENT PLANTS AND OTHER POINT SOURCES (CCMP TABLE 4, P. 32)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
H1-7. The state of New York will continue to seek to reach agreement with Belgrave, Great Neck East Shore, Huntington, Oyster Bay, Port Washington, and Kings Park on permit modifications for implementing the <i>no net increase</i> in nitrogen policy.	C	NYSDEC	1994	Redirection of base program	Complete	Agreement was reached in August 1994 on an aggregate limit to freeze the loads at 1990 levels.	None

2. REDUCING NITROGEN LOADS FROM NON-POINT SOURCES (CCMP TABLE 5, P.34)

Ongoing Program	Responsible Parties	Status ²	Description	Upcoming Action
H2-1. The states of Connecticut and New York will continue to use their existing authority to manage non-point source pollution and appropriate federal grants such as CWA§ 319, 604(b), and 104(b) to carry out projects that will help prevent increases and, to the extent practicable, achieve reductions in the non-point source loads from high priority drainage identified in the CT and NY portions of the watershed.	CTDEP NYSDEC EPA	Partial Progress	<p>CTDEP is working to implement broad non-point source controls that include nitrogen benefits. Currently, 92 active §319 projects are being implemented from FY94-2000 grants, a watershed model is being developed, and a watershed program has been implemented with early emphasis on the Quinnipiac River. Watershed initiatives are being conducted for the Norwalk and Quinnipiac rivers and Sasco Creek. 19 projects funded under 319 were closed out in 1999.</p> <p>NYSDEC has completed §319 funded projects in Conscience Bay (Town of Brookhaven) and Goose Creek (Town of Southhold), and is implementing projects in Centerport Harbor (Town of Huntington) and Dyke Road (Town of Brookhaven). In addition, a §604(b) funded project is being implemented in Oyster Bay.</p>	<p>CTDEP will expand its watershed program and complete the watershed model.</p> <p>NYSDEC is awaiting response from Town of Oyster Bay on project design.</p>
H2-2. The states of CT and NY are developing their coastal non-point source control programs, as required by §6217 of the Coastal Zone Management Act.	EPA NOAA CTDEP NYSDOS	Substantive Progress	<p>CTDEP has received conditional approval for its Coastal Non-point Pollution Control Plan (CNPCP).</p> <p>NYSDOS has completed its LIS Coastal Management program report. A LIS Coastal Advisory Commission has been created in NYSDOS. The Commission met during 1999.</p> <p>USGS is preparing estimates of nitrogen load to Long Island Sound derived from ground water and surface water on the north shore of Long Island using historical water-quality data, model-simulated ground-water discharges, and mean annual streamflow discharges. The effect of land use in three selected areas along the north shore of Long Island on nitrogen load is also being evaluated.</p>	<p>CTDEP will be addressing conditions of the CNPCP.</p> <p>The NY plan is awaiting approval by the Governor.</p>

KEY: 1) Type: Commitment; Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated
 Status for Ongoing Programs and ongoing CCMP Actions: Fully Met, Substantive Progress, Partial Progress, Discontinued

2. REDUCING NITROGEN LOADS FROM NON-POINT SOURCES (CCMP TABLE 5, P.34)

Ongoing Program	Responsible Parties	Status ²	Description	Upcoming Action
<p>H2-3. The states of CT and NY will continue to implement general storm water permit programs to control the discharge of storm water from industrial, construction, and municipal activities, in accordance with EPA's national program regulations. These permits will regulate discharges from construction activity greater than five acres and from eleven industrial categories.</p>	<p>CTDEP NYSDEC</p>	<p>Substantive Progress</p>	<p>CTDEP has three general storm water permits (industrial, construction, and commercial) for which approximately 2000 registrants have been recorded. Presently, Stamford is the only community in CT that is covered under the EPA's Phase I municipal permit program.</p> <p>In December 1999, EPA released its Phase II regulations for smaller cities and construction sites. CT anticipates 40-50 municipalities will be required to obtain permits under the Phase II storm water regulations.</p> <p>NYSDEC has three general storm water permits (industrial, construction, and commercial).</p>	
<p>H2-4. The states of CT and NY will continue to implement their existing permitting programs, such as the inland and tidal wetland programs, to address non-point nutrient control with respect to LIS management needs, as appropriate.</p>	<p>CTDEP NYSDEC</p>	<p>Substantive Progress</p>	<p>Connecticut has virtually eliminated losses of existing tidal wetlands and has restored hundreds of acres in the past few years. Inland wetlands are strictly regulated based on restrictive soil categories with no minimum threshold size.</p> <p>The net area of vegetated tidal wetlands has increased in New York, partly due to the tidal wetlands permitting program.</p>	
<p>H2-5. The states of CT and NY will implement the requirements of the reauthorized Clean Air Act to achieve additional nitrogen emission controls. Major actions include reduction of nitrous oxide emissions through adoption of statewide enhanced vehicle inspection and maintenance programs and stricter emission controls for stationary sources such as power plants.</p>	<p>CTDEP NYSDEC</p>	<p>Partial Progress</p>	<p>CTDEP Air and Water Bureaus have been evaluating mutual ozone/nitrogen deposition needs. Nitrogen monitoring and research has been funded through UConn to detail sources and sinks of nitrogen and mercury. States, including CT and NY, have completed "NOx SIP Call" plans, which will result in significant nitrogen reductions from atmospheric sources to LIS and other East Coast estuaries..</p> <p>NYS has adopted stricter standards for its automobile inspection program. NYS is ahead of schedule in its goal of reducing NOx emissions from electricity generating facilities by 35% by the year 2000.</p>	<p>New York State will continue to reduce NOx emissions by 20,000 tons annually.</p>

KEY: 1) Type: Commitment; Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated
 Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

2. REDUCING NITROGEN LOADS FROM NON-POINT SOURCES (CCMP TABLE 5, P.34)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
H2-6. The EPA will make non-point source management of nitrogen and other pollutants identified by the LISS, through wetlands and riparian zone protection as well as best management practices implementation, high priorities for funding under §319, 104(b), and 604(b) of the Clean Water Act.	C	EPA	Annually starting in 1994		Substantive Progress	<p>NYSDOS is soliciting applications for \$4.5M in statewide 50/50 matching Environmental Protection Fund (EPF) grants for Local Waterfront Revitalization Projects. NYSDOS is focusing on EPF funds for planning and design projects. In addition to non-point source pollution control projects, activities may include restoration of former natural coastal areas or enhancement of existing natural coastal areas, stream corridor restoration plans, and designing public access improvements. NYSDOS has received applications for EPF funding in 1999.</p> <p>For FY99 EPA and CTDEP awarded funds for NPS control projects in the amount of \$1,276,759 of which \$617,500 went to Long Island Sound non-point control projects.</p>	EPA and the states will continue to make NPS management of nitrogen and other LISS-priority pollutants a priority for funding under §319, §104(b)(3), and §604(b) of the Clean Water Act, taking into consideration the increased discretion the states have in directing grant funds under EPA's Performance Partnership Grant system. CT DEP anticipates similar funding for FY2000.
H2-7. Investigate expansion of storm water permitting programs to regulate communities with populations fewer than 100,000 that border Long Island Sound within high priority management zones.	C	CTDEP NYSDEC	1994	Redirection of base program	Behind Schedule	<p>EPA issued Phase II storm water regulations in December 1999 that apply to communities less than 100,000 population and to developments less than 1 but greater than 5 acres.</p> <p>CTDEP has evaluated a general municipal storm water permit that would add cities that meet certain density and population criteria. CTDEP is implementing EPA's final Phase II storm water regulations for municipalities. It is expected that 40-50 municipalities will be issued General Storm water permits.</p>	

KEY: 1) Type: Commitment; Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated
 Status for Ongoing Programs and ongoing CCMP Actions: Fully Met, Substantive Progress, Partial Progress, Discontinued

2. REDUCING NITROGEN LOADS FROM NON-POINT SOURCES (CCMP TABLE 5, P.34)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
<p>H2-8. In cooperation with the state of New York, Westchester County is developing a non-point source management plan that will include implementing best management practices for non-point source nitrogen control, monitoring their effectiveness and establishing a Westchester County management zone (or bubble) for assessing compliance with the nitrogen load freeze.</p> <p>The LISS will explore extending the bubble concept to other management zones throughout Connecticut and New York state portions of the Long Island Sound drainage.</p>	C	NYSDEC Westchester County EPA	1993 - 1996	\$500,000 one time cost	Substantive Progress	<p>The second full year of a 3-year sampling program was completed in 1999 as part of a \$335,000 project by Manhattan College to analyze nutrient and pathogen loads from the Mamaroneck River and Blind Brook. The work will better identify baseline and storm water non-point source loads that can be managed under the Westchester County management zone "bubble". The Westchester County Dept. of Planning has applied for a state grant to analyze the data collected under the project through the LIS 3.0 model.</p> <p>Westchester County's intermunicipal watershed planning efforts to reduce nonpoint source pollution in LIS drainage basin are progressing. The watershed management plans for study areas 3 and 5 were completed in April 1998 and June 1997, respectively.</p> <p>Watershed planning is being initiated in Nassau and Suffolk counties to address local water quality concerns as well as nitrogen loads from these zones.</p> <p>In Nassau county, inter-municipal confederations of watershed communities around Hempstead Harbor and Manhasset Bay have been formed to control and abate non-point pollution in their respective water bodies.</p> <p>Hempstead Harbor Protection Committee released its Water Quality Improvement Plan in May 1998.</p> <p>The Manhasset Bay Protection Committee completed a final report and released it during November 1999 .</p>	<p>The project will be completed in May 2000. The plan for study area 4 will be completed by June 2000. The plan for study areas 1,2, and 6 will begin over the next several years.</p> <p>NYSDEC may provide funding to Suffolk County to coordinate watershed planning effort.</p>
<p>H2-9. Westchester County will implement the recommendations of the County Executive's Citizens Committee on Non-point Source Pollution in Long Island Sound.</p>	C	Westchester County, Local Government	1993 initiation and continuing	<p>\$200K/year for the first 3 years \$600K for implementation</p> <p>[Through 1997, \$1.7 million has been received for preparation and implementation of the plans.]</p>	Substantive Progress	<p>The Westchester County Department of Planning is coordinating and providing technical and administrative assistance for the preparation of six subwatershed-specific plans to control nonpoint source pollution in the County's Long Island Sound watershed. [see H2-8]</p>	

KEY: 1) Type: Commitment; Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated
 Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

2. REDUCING NITROGEN LOADS FROM NON-POINT SOURCES (CCMP TABLE 5, P.34)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
H2-10. Point and non-point nitrogen load estimates will be made in the City of Stamford to assess feasibility of a point/non-point source <i>trading</i> program. A cost-effective mix of management options will be proposed that may be used to help decide how nitrogen reduction targets can be met once they are established.	C	CTDEP City of Stamford	1992-1994	\$97,000 in EPA funds, 239,182 in match from Stamford and CH2MHill	Complete	Report completed by CH2M-Hill, the City of Stamford, and New England Interstate Water Pollution Control Commission. The information is being used to develop cost estimates for point source controls and to assess feasibility of non-point source management	None
H2-11. New York state will pursue the expansion of the State Building Code to include provisions for erosion and sediment control and storm water practices for all construction activities in order to prevent increases in non-point nitrogen runoff.	C	NYSDEC NYSDOS	1993-1994	Redirection of base program	Behind Schedule	[See P2-5]	NYSDEC will try to address this through its storm water provisions.
H2-12. Provide technical assistance to coastal municipalities to address impacts of hypoxia in their municipal regulations and plans of development, as required by law.	C	CTDEP	1993 and continuing	Redirection of base program	Substantive Progress	<p>Connecticut Public Act 91-170 mandated that coastal municipal zoning regulations and plans of development be established with regard to non-point source and potential pollution of coastal waters with specific reference to hypoxia, toxic contamination, pathogens, and floatable debris.</p> <p>In 1999 CTDEP continued to conduct workshops for local land use officials using its manual, <i>Coastal Water Quality: A Guide for Local Officials</i>. The manual, funded under §309 of the Coastal Zone Management Act, contains information on how and use decisions and development impact coastal water quality, and how officials can minimize development effects by requiring the incorporation of appropriate best management practices into proper site design, construction and maintenance. Also included in the manual are model ordinances pertaining to soil erosion and sediment control and storm water management for towns to adopt. The manual was based, in part, on a brochure developed by the Connecticut River Estuary Regional Planning Agency using FY1994 §319 funds.</p>	In CT, municipal outreach will be enhanced through updated workshop materials in support of the municipal best management practices manual. Intended audiences will be expanded to include municipal engineering and public works departments in addition to planning and zoning commissions to focus on implementation as well as planning, to reduce hypoxia conditions in the Sound.
H2-13. Advocate the use of the June nitrate test on agricultural lands to ensure that fertilizer applications to crops do not exceed crop needs.	C	CTDEP NYSDEC	1993 and continuing	Redirection of base program	Partial Progress	The June nitrate and fall stalk tests have been found to effectively reduce the amount of nitrogenous fertilizers used on agricultural lands without affecting crop yield. The Housatonic Hydrologic Project, and projects for the Scantic, Quinnipiac, and Yantic Rivers involve June nitrate and fall stalk testing.	CTDEP, NRCS, CT Cooperative Extension, and Soil and Water Conservation Districts will continue to advocate its use.

KEY: 1) Type: Commitment; Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated
 Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

2. REDUCING NITROGEN LOADS FROM NON-POINT SOURCES (CCMP TABLE 5, P.34)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
H2-14. In addition to continuing general storm water permitting programs, the state of New York should determine if the general permit adequately regulates nitrogen from activities subject to national storm water regulations.	R	NYSDEC		\$50,000	Not Initiated	Funding and staffing limitations.	
H2-15. Explore the expansion of current requirements for federally licensed or permitted projects to obtain a water quality certification in New York to protect water quality from sources of pollution to include all projects adjacent to wetlands and other sensitive areas (e.g., adjacent to wetlands) or those that exceed a minimum size (e.g., greater than one acre).	R	NYSDEC	1994-1995	\$50,000	Not Initiated	Funding and staffing limitations.	
H2-16. The states of Connecticut and New York should develop a habitat restoration plan that includes a list of potential project sites and priorities. Wetland projects that are in close proximity to priority nitrogen management areas should be highlighted.	R	CTDEP NYSDEC NYSDOS	1996-1998	\$300,000 to develop plan	Complete	See Living Resources and Habitat section (Action L1-13.)	
H2-17. Evaluate Maryland's <i>Critical Areas</i> regulations and the reported nutrient reduction benefits and make recommendations of the potential value of a similar program for Long Island Sound.	R	LISS	1993-1995	\$50,000.	Not Initiated	Funding and staffing limitations.	

3. CONTINUING MANAGEMENT OF HYPOXIA (CCMP TABLE 6, P. 39)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
H3-1. The LISS will complete work on the LIS 3.0 model and the necessary management scenario projection runs.	C	LISS	Complete by June 1994	LISS Funded	Complete	Management scenarios were run in summer of 1996. Model reports are available. Model results were summarized for the September 1997 public meetings on the nitrogen reduction targets.	

KEY: 1) Type: Commitment; Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated
 Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

3. CONTINUING MANAGEMENT OF HYPOXIA (CCMP TABLE 6, P. 39)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
H3-2. Develop LIS 3.0-based dissolved oxygen targets and nitrogen load reduction targets for each management zone.	C	LISS	Propose by December 1994	Redirection of base program	Complete	The LISS proposed the nitrogen reduction targets in February 1997 and approved them after soliciting public comment in February 1998.	
H3-3. Establish a firm timetable for achieving, within 15 years, the load reduction targets by zone, with progress measured in five year increments.	C	CTDEP NYSDEC	Propose by December 1994	Redirection of base program	Complete	The TMDL for LIS was released for public comment in November 1999. The nitrogen reduction targets include a 15-year reduction schedule for both point and non-point sources, after providing for time to develop management zone plans and make permit modifications.	The TMDL is to be finalized and submitted to EPA for approval.
H3-4. Develop zone-by-zone plans to achieve the nitrogen load reduction targets.	R	CTDEP NYSDEC Local and County Governments	1995-1997* *modified to 8/99 in the Phase III Hypoxia Agreement	\$1 M committed for three New York zones; \$700,000 per year for three years needed	Behind Schedule	The TMDL released for public comment included a WLA/LA by zone. In CT, the TMDL and WLA/LA will serve as Zone Plans.	The final TMDL must include a facility-specific WLA. NY still intends to prepare more detailed zone-by-zone plans.
H3-5. Encourage and support development of innovative, cost-effective technologies to reduce point and non-point sources of nitrogen.	R	LISS	Ongoing	LISO Base Program	Partial Progress	CTDEP sponsored workshops BNR technologies.	
H3-6. Periodically recalibrate LIS 3.0 to reflect the changing conditions of the Sound and use it to explain these changing conditions and to evaluate proposals to modify the management plan, as necessary.	R	LISS	As Needed	\$300,000 per recalibration	Substantive Progress	The LISS is participating in a system wide nutrient workgroup that will evaluate the system wide eutrophication model (SWEM) developed by NYCDEP. A Model Evaluation Group (MEG) has been formed to provide independent peer review. MEG and Nutrient Reduction Work Group Meetings were held during 1999 to assess calibration and validation procedures.	

KEY: 1) Type: Commitment; Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated
 Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

4. FUNDING TO IMPLEMENT HYPOXIA MANAGEMENT PLANS (CCMP TABLE 7, P. 41)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	DESCRIPTION	Upcoming Action
H4-1. Increase funding of the Connecticut and New York State Revolving Fund Programs to meet statewide wastewater control needs, including Long Island Sound nitrogen control needs.	R	Congress Connecticut New York	Over 20 years	Federal cost of \$700 M per year. Cost to states of \$175 M per year.	Partial Progress	In 1996-99, CT committed \$350 M for sewage treatment plant reconstruction projects that will benefit LIS and estimates that Clean Water Funding, if maintained at current levels, will be adequate to finance Phase III upgrade requirements. In CT the 1999 commitment was \$75 M.	For FY2000 the CT Bond Commission approved over \$26 M for the Branford STP upgrade and over \$4 M for additional upgrades at the Stamford STP. Fairfield will begin upgrade construction with funds from the \$30.4 M grant awarded in 1999.
H4-2. Appropriate \$50 M to fund a Long Island Sound Challenge Grant Program, a significant portion of which would be used to ensure that the Phase III nitrogen control efforts get off to a fast start with full local government cooperation.	R	Congress	Over five years	\$50 M	Partial Progress	Legislative proposals have been introduced into Congress that would fund implementation of the LISS. The Long Island Sound Restoration Act was reintroduced in November 1999 to extend authorization for the LISS to 2003 and authorize annual appropriations of \$80 million, including grants for nitrogen reduction under CWA §119.	
H4-3. Fully fund the non-point source control programs under §319 of the Clean Water Act and §6217 of the Coastal Zone Act Reauthorization Amendments to support additional non-point source management activities.	R	Congress	Ongoing	\$ 319 - \$130 M nationwide \$ 6217 - \$12 M nationwide	Partial Progress	§319 was funded at \$200 M for FY 1999. As part of the Clean Water Action Plan, the administration has proposed FY 2000 funding of \$200 M.	The LISS, through its citizen participants, will advocate for increased funding under §319.

5. MONITORING AND ASSESSMENT OF HYPOXIA (CCMP TABLE 8, P. 42)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
H5-1. The states of Connecticut and New York, New York City, and the Interstate Sanitation Commission will monitor dissolved oxygen and nutrients in Long Island Sound, its major tributaries, and key sewage treatment plants.	C	CTDEP NYSDEC NYCDEP ISC	1994	\$340,000	Complete	Monitoring was performed as planned and the results summarized by each agency.	
H5-2. Develop a coordinated monitoring plan to assess the effectiveness of implementation, considering innovative approaches and building upon existing programs.	C	LISS	Completed in early 1994	\$25,000	Complete	A LISS monitoring workshop was held in 1993. The workshop integrated findings of the LISS to develop a comprehensive, Sound wide monitoring plan. Portions of the plan are being implemented.	

KEY: 1) Type: Commitment; Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated
Status for Ongoing Programs and ongoing CCMP Actions: Fully Met, Substantive Progress, Partial Progress, Discontinued

5. MONITORING AND ASSESSMENT OF HYPOXIA (CCMP TABLE 8, P. 42)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
H5-3. As part of a combined National Estuary Program Action Plan Demonstration Project and a CTDEP Long Island Sound Research Fund project, the EPA and the state of Connecticut will complete a demonstration project designed to evaluate and quantify the benefits of a riparian zone in the denitrification process.	C	CTDEP	1992-1994	\$100,000 for Phase I	Complete	This project will help quantify the benefits of vegetated riparian zones in nitrogen removal. Monitoring at the site was completed in June 1997. A final report is available. Interested parties should contact CT-DEP's Office of Long Island Sound Programs at (860) 424-3034.	
H5-4. The state of Connecticut, through its Long Island Sound Research Program, has solicited proposals to identify the role of riverine transport in attenuating the load of nitrogen delivered to the Sound in the Housatonic or Naugatuck Rivers. If an acceptable proposal is identified, it will be a priority for funding in 1994.	C	CTDEP	1993-1995	\$150,000	Partially addressed	CTDEP was not successful in funding a comprehensive project to study a watershed in detail through the Long Island Sound Research Fund. Some projects are looking at portions of the problem. CTDEP hired a consultant using federal 104(b) funds to develop a comprehensive watershed model for the state. The project began in early 1997.	The Research Fund project is on hiatus. Continue development of the watershed model.
H5-5. The state of Connecticut, through its Long Island Sound Research Program, will continue to fund atmospheric deposition monitoring of nitrogen at two coastal locations through May, 1994.	C	CTDEP	1991-1994	\$50,000 per year	Complete	Report for two years of atmospheric wet and dry deposition monitoring has been accepted by CTDEP. The original action has been completed but CT has continued the project and enhanced monitoring at 8 locations since 1997 with the University of Connecticut.	Monitoring is continuing through 2000 using SEP funds.
H5-6. The EPA Office of Research and Development will continue to develop regional dissolved oxygen criteria for marine and estuarine waters.	C	EPA	Complete 1994	Redirection of base program	Partially Addressed	EPA issued draft DO criteria for the Virginian Province in November 1999.	The public comment period is 45 days beginning January 27, 2000.
H5-7. The NYSDEC will complete its initial study on the effects of hypoxia and disease on Long Island Sound lobsters.	C	NYSDEC	1994	LISS Funded	Complete	A report is available from the EPA LIS Office or from the NYSDEC Division of Marine Resources.	

KEY: 1) Type: Commitment; Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated
 Status for Ongoing Programs and ongoing CCMP Actions: Fully Met, Substantive Progress, Partial Progress, Discontinued

5. MONITORING AND ASSESSMENT OF HYPOXIA (CCMP TABLE 8, P. 42)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
H5-8. Continue long-term dissolved oxygen and nutrient monitoring of the Sound, its major tributaries, and key sewage treatment plants.	R	CTDEP NYSDEC ISC EPA NYCDEP	Continuing	\$300,000 per year	Substantive Progress	Ambient monitoring was continued in 1999. CTDEP funds the USGS to monitor tributaries and both NYSDEC and CTDEP have expanded monitoring requirements for point source discharges. The ISC and NYCDEP also perform ambient monitoring of LIS.	Monitoring has been funded for 2000 EPA's EMPACT project will supplement monitoring efforts. EPA's Coastal 2000 program may fund CTDEP and NYSDEC for special monitoring in LIS, including several embayments in Summer 2000.
H5-9. Continue to monitor finfish and crustaceans of the Sound with emphasis on determining population response to low dissolved oxygen.	R	CTDEP	Continuing		Substantive Progress	Special studies to identify hypoxic impacts on fish distribution are completed and reports are available from CTDEP Marine Fisheries. See Living Marine Resources and Habitat (Action L9-1.)	CTDEP continues to monitor finfish and lobster resources, but the studies are analyzed now to manage the state of fish and lobster resource stocks in light of DO's role.
H5-10. Continue to monitor the effects of hypoxia on disease of lobsters.	R	NYSDEC	Continuing	\$65,000	Discontinued	See Living Marine Resources and Habitat (Action L9-8.) The LISS in partnership with NY and CT Sea Grant programs released a Request for Proposals covering research in November 1999.	Work under the RFP will commence in 2000. Additional FY2000 LISS funds will be reserved for research in 2000.

KEY: 1) Type: Commitment; Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated
Status for Ongoing Programs and ongoing CCMP Actions: Fully Met, Substantive Progress, Partial Progress, Discontinued

Protecting the Sound from the Adverse Effects of Toxic Substances

Toxic substances can cause adverse human and ecosystem health risks, and can result in significant negative economic impacts on the value of the natural resources of the Sound.

Strategy:

The CCMP strategy to address toxic contamination in LIS has five principal elements: 1) toxic contaminant source controls and prevention; 2) addressing sediment contamination; 3) improving human health risk management; 4) monitoring and assessment of toxic contaminants; and 5) research to investigate toxic contamination. There are 5 *Ongoing Programs* and 26 *CCMP Actions* for this priority area. In 1999, of the 26 *CCMP Actions*, 5 are *Complete*; 4 are either *Partially Addressed*, or *Behind Schedule*; 13 are classified as *Not Initiated*; 3 are reported elsewhere in this report.



Highlights:

- EPA and ACOE signed a Letter of Agreement in April 1998 to designate open water disposal sites under the Marine Protection, Research and Sanctuaries Act (MPRSA). The agencies jointly held public meetings in Connecticut and New York in 1999 to gather public comment and input on the site designation process, proposed workplan, and site selection evaluation criteria and methodology. The designation process is expected to be completed by March 2002.
- The LISS held a *Dredging and the Environment* workshop in March 1999 for Connecticut and New York residents to increase the opportunity for public discussion, input and feedback to the regulatory agencies on dredged material management in LIS. The workshop complemented efforts by EPA and the ACOE to begin the process of designating dredged material disposal sites in LIS.
- In 1999 CTDEP received a fellowship award from NOAA's Coastal Services Center for development of a Long Island Sound Sediment Quality Information Database (SQUID) using GIS and associated databases, which include such spatial and attribute data as: sewer treatment outfalls; combined sewer outfalls; industrial discharges; oil & chemical spills; landfills; stormwater outfalls; and locations in the Sound and harbors where sediment testing has been conducted. The Coastal Management Fellow began work at DEP in November 1999.



SUMMARY OF MANAGEMENT ACTIONS: TOXIC SUBSTANCES

1. TOXIC CONTAMINANT SOURCE CONTROLS AND POLLUTION PREVENTION (CCMP TABLE 21, P. 65)				
Ongoing Program	Responsible Parties	Status ²	Description	Upcoming Action
T1-1. The states of Connecticut and New York and the Army Corps of Engineers will continue to regulate dredging and the disposal of dredged sediments through the existing permit programs.	CTDEP NYSDEC NYSDOH NYSDOH ACOE EPA	Fully Met	<p>The LISS sponsored a <i>Dredging and the Environment</i> workshop on March 19, 1999 to facilitate public discussion and input to enable the states of NY and CT to propose a final Plan for Disposal of Dredged Material in Long Island Sound. EPA/ACOE held a series of public meetings in NY/CT in 1999 to obtain public input into the dredged material EIS process.</p> <p>The states of Connecticut and New York continue to regulate and enforce dredging activities. CTDEP, with LISS funding produced a report in 1998, <i>Long Island Sound Dredged Material Management Approach</i>.</p> <p>Dredging of Mamaroneck Harbor and disposal of dredged material was completed in 1999.</p> <p>EPA and ACOE signed a Letter of Agreement in 1998 on site designation under MPRSA in LIS, which schedules completion of the process by March 2002.</p>	<p>LISS will develop recommendations on whether to update the interim Plan for Disposal of Dredged Material in LIS.</p> <p>EPA will conduct public workshops in 2000 as part of the EIS workplan.</p>
T1-2. The states of Connecticut and New York and the EPA will continue their pretreatment programs to ensure that toxic discharges to sewage treatment plants are controlled. The states of Connecticut and New York, through their Pollution Discharge Elimination System Programs, will continue to ensure that facilities comply with their permit limits.	CTDEP NYSDEC EPA	Substantive Progress	<p>CTDEP's municipal facilities program continues to oversee municipal reports of monitoring discharges to ensure toxic contaminants are within individual permit limits.</p> <p>The NYC pretreatment of influent is being implemented.</p>	
T1-3. The states of Connecticut and New York and the EPA will apply pollution-prevention techniques, as appropriate, to both direct and indirect discharges of toxic substances by emphasizing wastewater minimization, recycling of wastewater, and alternative processes and chemicals to reduce toxicity and toxics loads and to minimize effects on all environmental media.	CTDEP NYSDEC EPA	Partial Progress	<p>Connecticut's policy is embodied in state legislation (P.A. 91-376). CTDEP published its Pollution Prevention Plan in October 1996, targeting consumers, industry, and government to control targeted substances. A special section on nonpoint source runoff to LIS highlights these needs.</p> <p>NYSDEC launched an enforcement initiative designed to bolster compliance with regulations requiring registration and tightness testing of petroleum bulk storage tanks. In NYS, as a result of a negotiated regulatory rule making during 1999, dry cleaners were required to control emissions of toxic perchloroethylene.</p>	

KEY

1) Type: Commitment; Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated

Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

1. TOXIC CONTAMINANT SOURCE CONTROLS AND POLLUTION PREVENTION (CCMP TABLE 21, P. 65)				
Ongoing Program	Responsible Parties	Status ²	Description	Upcoming Action
T1-4. The states of Connecticut and New York will review municipal and industrial discharge permits to surface waters to reduce the allowable concentrations of toxic pollutants from the previous permitted values.	CTDEP NYSDEC EPA	Partial Progress	<p>NYSDEC analyses municipal and industrial discharge permits in response to applications and renewal applications on a regular schedule.</p> <p>CTDEP, through permitting and enforcement programs, regularly reviews and monitors permit compliance. An aggressive tracking and testing (bioassay) program is in place for municipal, industrial and storm water permittees to ensure point source discharges are adequately treated and protective of aquatic resources. TMDL analyses will further reduce toxic contaminant loads, where needed. Eighty-five municipal and more than 20 private and/or state facilities are covered by this program. From 1989-1999 approximately 4,700 toxicity tests have been performed and results reported to DEP. A 75 percent reduction in the number of CT facilities discharging potentially toxic effluent has been observed over the last ten years.</p>	<p>Two facilities upgrading treatment of effluent. It is anticipated that these upgrades will follow the current (historical) trend of non-toxic effluents observed at upgraded facilities.</p> <p>CTDEP will continue toxicity testing of STP discharges in 2000.</p>

1. TOXIC CONTAMINANT SOURCE CONTROLS AND POLLUTION PREVENTION (CCMP TABLE 21, P. 65)CCMP							
CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
T1-5. The LISS will encourage adequate funding to continue and expand pollution prevention site visit programs targeting industrial dischargers to the Sound and its tributaries.	C	LISS	Initiated 1993/ Continuing	Minimal staff time	Complete	EPA awarded \$105,000 in FY94 to the Connecticut Hazardous Waste Management Service's Technical Assistance Program (ConnTAP) to target its existing pollution prevention site visit program at industries with direct and indirect wastewater discharges to Long Island Sound and its tributaries. The grant funds were supplemented with several other funding sources for a total of \$253,500. ConTAP completed the project in June 1997 and submitted a final report in January 1998. ConTAP was eliminated from State budget effective July 1, 1997.	
T1-6. As part of the NY-NJ Harbor Estuary Program, total maximum daily loads, wasteload allocations for point sources, and load allocations for nonpoint sources will be developed to ensure that water quality standards for mercury are met in the Harbor, the East River, and Long Island Sound.	C	HEP NJDEP NYSDEC EPA	1994	Redirection of base program	Complete	Phase I TMDL for mercury has been completed. EPA, NYSDEC, and NJDEP convened a workgroup in 1998 to develop Phase II mercury TMDL and TMDLs as necessary for toxic organics.	

KEY

1) Type: Commitment; Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated

Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

1. TOXIC CONTAMINANT SOURCE CONTROLS AND POLLUTION PREVENTION (CCMP TABLE 21, P. 65)CCMP

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
T1-7. As part of the New York - New Jersey Harbor Estuary Program, the states of New York and New Jersey will establish water quality-based effluent limits for copper, mercury, and six other toxic metals, as necessary. Permits will be subsequently modified.	C	NJDEP NYSDEC	Complete by 12/94	Redirection of base program	Complete	NYSDEC has modified NYC sewage treatment plant permit limits for metals. Additional WLAs will be developed through the TMDLs described in T1-6.	
T1-8. Support education on the environmental impact of using home, garden, and commercial hazardous chemicals and pesticides and continue to provide guidance on how to minimize use of these chemicals and properly dispose of them through household hazardous waste collection.	R	LISS	Initiated 1993/ Continuing	\$20,000. See Public Involvement and Education		See Public Involvement and Education.	
T1-9. Evaluate mass loadings of toxic contaminants and determine their relationship to ambient water and sediment quality.	R	LISS CTDEP NYSDEC		\$200,000 per year	Partially Addressed	In 1999 CTDEP received a fellowship award from NOAA's Coastal Services Center for development of a Long Island Sound Sediment Quality Information Database (SQUID) using GIS and associated databases, which include such spatial and attribute data as: sewer treatment outfalls; combined sewer outfalls; industrial discharges; oil & chemical spills; landfills; stormwater outfalls; and locations in the Sound and harbors where sediment testing has been conducted. The Coastal Management Fellow began work at DEP in November 1999.	For 2000 it is expected the SQUID project will have a base GIS established and completion of a bulk chemistry database.
T1-10. Identify and assign priorities to toxic substances which should be banned from use and for which <i>virtual elimination of discharge</i> should be the goal.	R	LISS CTDEP NYSDEC		\$200,000 per year	Not Initiated	Funding and staffing limitations.	

KEY

1) Type: Commitment; Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated

Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

2. ADDRESSING SEDIMENT CONTAMINATION (CCMP TABLE 22, P. 67)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
T2-1. The LISS will review the National Oceanic and Atmospheric Administration (NOAA) 1991 sediment chemistry and toxicity survey results of harbors and embayments, when available in the Spring 1994.	C	LISS NOAA	Upon report completion	Existing staff to be used	Not Initiated	Funding and staffing limitations.	
T2-2. The LISS will provide a preliminary review of the data on sediment contamination on a site-by-site basis. State and federal experts will evaluate the problem at each site and recommend additional assessments needed to fully characterize the problem, ascertain the need for and feasibility of remediation and prepare a remediation plan.	C	LISS	Ongoing	Existing staff to be used	Not Initiated	Funding and staffing limitations.	
T2-3. The City of Glen Cove plus their Review Committee will evaluate the contamination of Glen Cove Creek.	C	NYSDEC City of Glen Cove	1994/1995	\$250,000.	On Schedule	In 1999, dredging was completed in the mouth and downstream portions of Glen Cove Creek. The City was awarded \$1.4 million as part of a Federal initiative to restore polluted industrial sites for subsequent development for human use. Glen Cove and Stamford, CT are two of 16 communities in the U.S. chosen as Brownfields Showcase Communities. Bulkheading portions of Glen Cove Creek to permit further dredging was completed in 1999.	Dredging of mid- and upper portions of Glen Cove Creek to be completed. Stamford plans to reclaim the harbor area as an economic and recreational resource.
T2-4. The LISS will review and evaluate sediment remediation approaches developed in the Great Lakes ARCS Program and HEP.	C	LISS	1994/1995	Existing staff to be used	Not Initiated	Funding and staffing limitations.	

KEY

1) Type: Commitment; Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated

Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

2. ADDRESSING SEDIMENT CONTAMINATION (CCMP TABLE 22, P. 67)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
T2-5. Conduct further assessments and develop site plans addressing the feasibility, technical approach, cost and value of conducting remediation activities for Black Rock Harbor and Glen Cove Creek, where data may be sufficient to conduct case study analyses. Recommend other harbors for characterization and feasibility studies to be conducted at a rate of two harbors per year.	R	LISS	Ongoing	\$250,000 per harbor or \$500,000 per year.	Partial Progress	A contract for excavating and removing landfill at the Captain's Cove facility in Glen Cove was awarded in 1999. Demolition of shell structures for previously planned condominiums at the Captain's Cove facility were demolished in April 1999.	Demolition of the Captain's Cove site to be completed.

3. IMPROVING HUMAN HEALTH RISK MANAGEMENT (CCMP TABLE 23, P. 68)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
T3-1. The LISS will advocate the coordination between the states of Connecticut and New York to review health risk and advisory recommendations and formulate plans to ensure consistency.	C	LISS CTDEP CTDOHS NYSDEC NYSDOH	Initiated 1994/ Continuing	No Cost	Not Initiated	Funding and staffing limitations.	
T3-2. Develop strategies for controlling loadings of contaminants for which seafood consumption advisories have been issued.	R	LISS CTDEP NYSDEC		\$150,000 per year.	Partially Addressed	CTDEP is using SEP and Long Island Sound Research Funds to support: 1) a study of Hg abundances in LIS sediments(Complete); 2) an evaluation of seafood consumption rates in CT since national estimates of consumption may be too low and consumption advisories are based on these rates (Complete); and 3) an evaluation of Hg sources and cycling in LIS (On schedule). Also funded was a study of Hg levels in fish from LIS and the CT River.	Complete the third study. Continue monitoring Hg deposition in LIS (UCONN) in 2000.
T3-3. Develop a strategy for identifying toxic substances of human health risk concern in Long Island Sound seafood species and tolerance levels for those substances.	R	LISS		\$150,000 per year.	Not Initiated	Funding and staffing limitations.	

KEY

1) Type: Commitment; Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated

Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

4. MONITORING AND ASSESSMENT OF TOXIC CONTAMINANTS (CCMP TABLE 24, P. 71)

Ongoing Programs	Responsible Parties	Status ²	Description	Upcoming Action
T4-1. The mussel watch and benthic surveillance components of NOAA's Status and Trends Program and the EPA's Environmental Monitoring and Assessment Program provide regular and systematic sampling of contaminant levels in the Sound.	NOAA EPA	Partial Progress	NOAA's Status and Trends Program has continued. However, new sampling under EPA's EMAP program has been scaled back. The program is now focusing on data analysis and environmental indicator development.	CTDEP will participate in EPA's Coastal 2000 monitoring program that builds upon EMAP.

4. MONITORING AND ASSESSMENT OF TOXIC CONTAMINANTS (CCMP TABLE 24, P. 71)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
T4-2. A monitoring workshop was held to integrate findings of the LISS and develop a comprehensive, Soundwide monitoring plan for toxic substances.	C	LISS	Initiated 1993/ Completed 1994	\$25,000	Complete	See Action M 1-7.	
T4-3. Under the auspices of the New York- New Jersey Harbor Estuary Program (HEP), the U.S. Army Corps of Engineers has agreed to develop a work plan and budget to develop systemwide models for PCBs, mercury, and other toxic pollutants that will provide the technical foundation for comprehensive efforts to eliminate these contamination problems in the Sound-Harbor-Bight system. The Corps of Engineers and other participants have agreed to seek the funding necessary to complete these models. Special attention will be directed to fully account for nonpoint sources of mercury.	C	HEP USACOE	1994	Existing staff to be used	Partial Progress	A systemwide model has been developed (Farley-Thomann Model). Field sampling for HEP Contaminant Assessment Reduction Program (CARP) in support of Farley-Thomann Model improvement and validation began in 1999. This includes some sampling in LIS as boundary conditions to NY/NJ Harbor.	Additional modules or sub-models are to be developed. Also, improvements in the model's detail are planned.

KEY

1) Type: Commitment; Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated

Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

4. MONITORING AND ASSESSMENT OF TOXIC CONTAMINANTS (CCMP TABLE 24, P. 71)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
T4-4. Monitoring initiatives will be coordinated with the EPA Regional - Environmental Monitoring and Assessment Program (R-EMAP) to further the understanding of sediment toxicity and benthic community structure gradients in western Long Island Sound.	C	CTDEP NYSDEC EPA	Field Work Initiated 1993/ Completed 1994	\$200,000	Complete	A final report <i>Sediment Quality of the NY/NJ Harbor System</i> was issued in March 1998. The study area extended into western LIS.	
T4-5. Conduct site-specific characterization surveys of water, sediment and biota in harbors where active sources of toxic substances are believed to persist at a rate of two harbors per year.	R	CTDEP NYSDEC		\$200,000 per harbor; or \$400,000 per year.	Not Initiated	Funding not identified.	
T4-6. Identify sources and sites of PCB loadings to the Sound ecosystem from in-Sound and NY-NJ Harbor Estuary sources. Focus on reducing and eliminating PCB loadings on a priority basis, concentrating on areas of known contamination such as Black Rock Harbor.	R	CTDEP NYSDEC EPA		\$200,000 per year	Not Initiated	Funding not identified.	
T4-7. Monitor contaminant levels in selected estuarine organisms to ascertain their effects on the biology of the species and their effects on the edibility of the species.	R	LISS CTDEP NYSDEC EPA NMFS USFWS		\$300,000 per year	Not Initiated	CTDEP periodically assesses tissue contaminant levels for key seafood species.	Mercury study listed in T3-2 complete. Coastal 2000 will include tissue analysis of finfish.
T4-8. Implement the recommendations from the LISS Monitoring Plan to improve contaminant monitoring.	R	LISS		\$15,000.	Not Initiated	Funding not identified.	

KEY

1) Type: Commitment; Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated

Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

5. RESEARCH TO INVESTIGATE TOXIC CONTAMINATION (CCMP TABLE 25, P. 73)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
T5-1. The relationship between organism body burdens and their toxic response needs to be investigated as an important mechanism of toxic impact.	R	University Research		\$250,000 per year	Not Initiated	Funding not identified.	
T5-2. Trophic level transfer and bioaccumulation effects of contaminants up the food chain need to be quantified to better manage both the aquatic community and human health risk.	R	University Research - State Health Risk Agencies		\$500,000 per year	Not Initiated	Funding not identified.	
T5-3. While toxicity testing of sediments and waters is an efficient means of identifying toxicity problems, the relationship between toxicity and specific causative agents needs to be determined.	R	University Research/ Research Lab		\$500,000 per year	Not Initiated	Funding not identified.	
T5-4. Evaluate the use of an ecological risk assessment approach, demonstrated in the LISS Black Rock Harbor Action Plan Demonstration Project, for more widespread application to identify toxicity and its sources in embayments and harbors of the Sound.	R	LISS CTDEP NYSDEC EPA		\$100,000	Not Initiated	Funding not identified.	
T5-5. Continue to monitor finfish and crustaceans of the Sound with emphasis on determining population response to low dissolved oxygen.	R	CTDEP	Continuing	See Living Marine Resources and Habitat		(See Action L9-1)	

KEY

1) Type: Commitment; Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated

Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

Reducing Floatable Debris in the Sound

Litter, debris, and trash floating in LIS coastal waters and washing up on LIS shorelines can be a nuisance to, or hazard for boaters, beach-goers, bathers, fishermen, and other recreational or commercial LIS users, and can harm wildlife and reduce aesthetic enjoyment of the Sound.

Strategy:

This CCMP priority area has two principal management actions: 1) controlling floatable debris from combined sewer overflows (CSOs) and storm water sewers; and 2) increasing floatable debris cleanup efforts. There are a total of 14 action items in this category: 5 **Ongoing Programs**, and 9 **CCMP Actions**. In 1999, of the 5 **Ongoing Programs**, 4 are reported as **Fully Met/Substantive Progress**; 1 reported as **Partial Progress**. Of the 9 **CCMP Actions**, 6 are reported as **Completed, Substantive Progress**, or **Fully Met**; 3 are reported as **Not Initiated**.



Highlights:

- Efforts to control combined sewer overflows and improve stormwater management, described under **Pathogens**, are also helping to reduce the amount of litter reaching the Sound. Communities around the Sound are adopting a watershed management approach to controlling sources of pollution to the Sound, including point and nonpoint sources, CSOs, and land use practices. Many communities have formed watershed management committees or groups to work together in addressing environmental management problems that have no jurisdictional boundaries.
- In 1999, 1,264 volunteers from NYS removed 25,078 lbs of debris from the shoreline along the Sound. In Connecticut, over 598 volunteers removed over 6,680 pounds of trash from 23 miles of shoreline. There were fewer volunteers than in 1998 due to public concerns over mosquitos in the Fall 1999.
- Since 1991, over 18,650 storm drains have been stenciled with the message: **Don't Dump -- Drains to Long Island Sound**.
- In New York, over 3,330 drains have been stenciled with a bi-lingual (Spanish/English) "**Clean Streets = Clean Beaches**" slogan.
- The CT DEP is implementing the EPA Phase II Municipal Stormwater permit system. It is expected that 40 to 50 CT municipalities will be issued municipal general storm water permits.
- In December 1999 CTDEP released its Proposed Solid Waste Management Plan for the 21st Century for public comment. DEP plans hearings in early 2000 and will begin implementing the Plan in 2000.



SUMMARY OF MANAGEMENT ACTIONS: FLOATABLE DEBRIS

1. CONTROLLING FLOATABLE DEBRIS FROM CSOs AND STORMWATER SEWERS (CCMP TABLE 38, P. 96)				
Ongoing Programs	Responsible Parties	Status ²	Description	Upcoming Action
F1-1. Continue implementation of long-term CSO abatement programs to manage or eliminate all CSO areas remaining in the Long Island Sound region.	CTDEP NYSDEC NYCDEP and local municipalities	Substantive Progress	See CSO program description in item P1-1, under the Pathogens section.	
F1-2. Control discharge of stormwater from industrial, construction, and municipal activities in accordance with EPA's national program regulations.	EPA NYSDEC CTDEP local municipalities	Partial Progress	<p>CTDEP's three general stormwater permits for industrial, construction, and commercial activities address floatable debris and now have more than 2,000 registrants.</p> <p>The City of New Rochelle has received grants from the State of New York to construct grit and floatable removal on storm sewer outlets (SSOs). In addition, NYSDEC has an administrative order against Westchester County to require construction of settling and floatable removal devices on two SSOs in the New Rochelle sewer district. The system will be designed to handle an approximate two year storm. The City of Larchmont is operating its floatable debris boom at the mouth of Pine Brook..</p>	The CT DEP is implementing the EPA Phase II Municipal Stormwater permit system. It is expected that 40 to 50 CT municipalities will be issued municipal general storm water permits.

2. INCREASING FLOATABLE DEBRIS CLEANUP EFFORTS (CCMP TABLE 39, P. 99)				
Ongoing Programs	Responsible Parties	Status ²	Description	Upcoming Action
F2-1. Continue to implement the <i>Pack It In/Pack It Out</i> anti-litter campaign.	CTDEP and the public	Fully Met	CTDEP's Parks Division sponsors the "Pack it in-Pack it out" anti-litter campaign, which has led to the elimination of all trash barrels at state parks, including state beaches, except at campground areas. A single trash collection site is provided, which includes a dumpster and marked recycling bins, for people who don't want to transport their trash home. The program has been very successful with no noticeable increase in litter at the parks and beaches.	
F2-2. The New York-New Jersey Harbor Estuary Program has developed detailed short- and long-term floatable debris action plans for the New York-New Jersey Harbor.	USACOE NYSDEC NYCDEP NJDEP	Fully Met	The floatable debris action plan continues to be implemented. A Floatables Action Plan Assessment Report for the 1995-97 period was finalized by EPA Region II in March 1998.	

KEY

1) **Type:** Commitment, Recommendation

2) **Status** for dated actions: Complete; Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated
Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued.

2. INCREASING FLOATABLE DEBRIS CLEANUP EFFORTS (CCMP TABLE 39, P. 99)				
Ongoing Programs	Responsible Parties	Status ²	Description	Upcoming Action
F2-3. National Beach Cleanup Program. As part of this program, annual cleanups of Long Island Sound shorelines have taken place since 1988. This program costs \$10,000 per year per state to coordinate and support volunteer efforts.	NYSDEC CT Sea Grant Program American Littoral Society Volunteers	Fully Met	In Connecticut, the cleanups are coordinated by CT Sea Grant. In New York, data on debris is compiled and stored by the American Littoral Society and NYSDEC. The beach cleanup includes land and underwater cleanups. In addition, various non-profit LIS groups have clean-ups on a regular basis with CTDEP assistance. In 1999, 1,264 volunteers from NYS removed 25,078 lbs of debris from the shoreline along the Sound. In Connecticut, 598 volunteers removed 6,680 pounds of trash from 23 miles of shoreline. The number of volunteers was reduced from 1998 due to public concerns over mosquitos in the Fall 1999.	The next event is scheduled for September 2000.

2. INCREASING FLOATABLE DEBRIS CLEANUP EFFORTS (CCMP TABLE 39, P. 99)							
CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
F2-4. Continue to implement <i>Clean Streets/Clean Beaches</i> anti-litter campaign.	C	Coalition of public and private groups in New York and New Jersey	This action was initiated in 1992 and is ongoing.	\$100,000 grant from the EPA	Substantive Progress	NY Sea Grant developed stencils in English and Spanish with support from an EPA grant, and continues to distribute stencils in NY.	
F2-5. Conduct a demonstration project to encourage proper solid waste handling and recycling at five marinas.	C	NYSDEC	1991	\$71,000 grant from the EPA	Complete	Actions include recycling of materials and disposal of used fishing gear.	
F2-6. Expand involvement in <i>Coastweeks</i> program to include a second beach cleanup in the spring, prior to the beach season.	R	LISS Management Conference		\$20,000 per year	Not Initiated		

KEY

1) **Type:** Commitment, Recommendation

2) **Status** for dated actions: Complete; Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated
Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued.

2. INCREASING FLOATABLE DEBRIS CLEANUP EFFORTS (CCMP TABLE 39, P. 99)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
F2-7. Continue to coordinate volunteers to paint stenciled messages on storm drains, such as <i>Don't Dump - Drains to Long Island Sound</i>.	R	NY Sea Grant LISS Volunteers	Ongoing	\$5,000. See Public Involvement and Education	Fully Met	CTDEP has funded storm drain stenciling through \$319 funding and the CT License Plate Fund. More than 6,250 storm drains have been stenciled to date in Connecticut. NY Sea Grant distributed 92 stencils to 5 groups in 1999. Save the Sound, Inc. distributes stencils in Connecticut.	NY Sea Grant and Save the Sound, Inc. will continue the storm drain stenciling program. Possible storm drain stenciling is planned for the Vernon/Manchester and East Hartford area of the Hockanum River.
F2-8. Maintain clean beaches and minimize resuspension of debris back into Long Island Sound waters by: -Cleaning beaches in the evening to prevent resuspension overnight. -Using solid waste receptacles with lids instead of the open mesh type. -Providing recycling containers in convenient locations. -Using environmentally responsible containers for food and beverages at concession stands.	R	State and local governments	Ongoing	Varies with facility.	Substantive Progress	Many of the actions listed are being undertaken at local beaches throughout Long Island.	Continue program
F2-9. Distribute a directory of volunteer groups in the Long Island Sound watershed that work on projects and activities to reduce marine debris.	R	LISS		See Public Involvement and Education	Not Initiated		
F2-10. Encourage the public and manufacturers to promote recycling, use less packaging, and substitute products made from degradable material whenever possible.	R		Ongoing		Substantive Progress	The CTDEP proposed <i>Solid Waste Management Plan for the 21st Century</i> has set goals to reduce the quantity and toxicity of solid waste. Implementation includes developing packaging regulations to reduce the volume and weight of packaging and educating consumers and businesses to products with less toxicity and with recycled material content.	Finalize the Plan and implement most of the Plan elements by 2005.

KEY

1) **Type:** Commitment, Recommendation

2) **Status** for dated actions: Complete; Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated
Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued.

2. INCREASING FLOATABLE DEBRIS CLEANUP EFFORTS (CCMP TABLE 39, P. 99)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
F2-11. Encourage marina operators to accept responsibility for litter control and recycling.	R	NYSDEC CTDEP	Ongoing		Substantive Progress	NYSDEC's <i>Marina Management Guide</i> addresses a number of issues, including floatable debris. NYSDEC uses the <i>Guide</i> in its <i>Tidal Wetlands and Protection of Waters</i> permitting operations. CTDEP's <i>Marina Best Management Practices</i> manual addresses many potential pollution problems including litter.	
F2-12. Require floatation materials that are resistant to decomposition and fragmentation.	R	NYSDEC Local Municipals			Not Initiated		

KEY

1) **Type:** Commitment, Recommendation

2) **Status** for dated actions: Complete; Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated
Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued.

Managing and Conserving Living Resources and Their Habitats

Restoring and protecting the overall abundance and diversity of habitats and living marine resources in the Sound ultimately improves both its ecological balance and economic well-being.

Years of neglect, mismanagement, and damaging actions have diminished the abundance and diversity of habitats and marine resources, causing water quality problems, adversely affecting land use, and contributing to damaging economic impacts from flooding, erosion and runoff pollution.

Strategy:

The LIS Habitat Restoration Strategy was adopted by the LISS in February 1998. Its goals are to: 1) continue the active partnership among Federal agencies, states, local municipalities, and the public through the New York Sea Grant, the CAC, and environmental groups; 2) restore the ecological functions of degraded and lost habitat; 3) restore at least 2,000 acres and 100 miles of river corridor to anadromous fish within the first ten years of the initiative; and 4) complete a habitat restoration manual by Spring 1998.

There are 26 *Ongoing Programs* and 48 *CCMP Actions* in this priority area. In 1999, the majority of *Ongoing Programs* are reported as *Substantial Progress*; of the 48 *CCMP Actions*, 3 are reported as *Complete*; 34 *Substantive Progress/Fully Met/Partial Progress*; 2 *Behind Schedule*; 8 *Not Initiated*; 1 *Discontinued*.



Highlights:

- The single most noteworthy event of 1999 affecting living resources in Long Island Sound was the significant loss of the American lobster, *Homarus americanus*, in the western Sound. At the urging of lobstermen, and at the request of the Governors of New York and Connecticut, the Secretary of Commerce declared a lobster fishery failure in the Sound. This opened the way for further Congressional action to provide Federal disaster relief to lobster fishers from both states, and research funds to assist in the investigation of the cause of the mortalities.

As of this writing, the cause of the lobster mortalities has not yet been determined by scientists and researchers engaged in studies and tests on affected western Long Island Sound lobsters. Scientists at the University of Connecticut have identified a parasite, *paramoeba*, in nerve tissues of affected lobsters. The exact species of this parasite, and its relationship to the lobster deaths has not of yet been scientifically established.
- The LISS issued a Request for Proposals in November 1999 to study, among other topics, the causes of the lobster mortalities in the Sound. In 1999, the Management Committee reserved funds to create a LIS research program to address basic understanding of the Sound as an ecosystem. The Connecticut and New York Sea Grant programs are partners in this effort, committing funds to the research program in 1999.
- The states of Connecticut and New York made excellent overall progress toward the goals of the Habitat Restoration Strategy. Connecticut has restored over 68 acres of tidal wetland and 22.5 miles of river corridor has been reopened to anadromous fish. New York has provided over \$2.5 million in state Bond Act funds in 1999 to restore 85 acres of aquatic habitat. The Baxter Pond project was completed in 1999.

Long Island Sound Study

- **During 1999, Connecticut acquired 2,910 acres for open space at a cost of nearly \$10.6 million, while assisting municipalities, land trusts, and water companies with the purchase of another 4,203 acres with \$10 million through the state DEP open space grant program.**
- **The Long Island Sound Watershed Alliance (LISWA) passed a Resolution at its April 1999 meeting supporting the creation of a Long Island Sound Reserve system, as called for in the CCMP.**

1999 CCMP Tracking Report

- **The CAC sent a letter to the Policy Committee in June 1999 supporting the creation of a LIS reserve that would identify and protect open space and underwater habitats in the Sound. A coalition of interest groups is working to implement this CCMP action.**



SUMMARY OF MANAGEMENT ACTIONS: MANAGEMENT AND CONSERVATION OF LIVING RESOURCES AND THEIR HABITATS

1. RESTORATION AND ENHANCEMENT OF AQUATIC AND TERRESTRIAL HABITATS (CCMP TABLE 40, P.107)				
Ongoing Programs	Responsible Parties	Status ²	Description	Upcoming Action
L1-1. Connecticut, New York, and federal agencies will continue to pursue restoration of degraded habitat.	NYSDEC NYSDOS CTDEP CTDOT USFWS USACE USEPA	Substantive progress	The LIS Habitat Restoration Plan to restore 2,000 acres of habitat and 100 miles of riverine migratory corridor is being implemented by an interagency team. In Connecticut for 1999, 5 tidal wetland restoration projects were completed for a total of 68 acres and 11 riverine migratory corridor projects were completed for a total of 22.5 miles. Significant progress was made in the development of a scope of work and the design contract language for the Old Field Creek wetland restoration that is funded through ISTEPA and EP's Coves and Embayments Program. DEP and NOAA have selected two riverine migratory projects that will be funded with oil spill recovery funds. The USACE reconnaissance study and associated scope of work was completed and evaluated by CTDEP. Due to funding constraints, only one of the riverine migratory corridor projects will enter the design stage. The Wetland Team and Riverine Migratory Team have each identified work priorities for the year 2000. DEP identified two new populations of the invasive water chestnut on the tidal Connecticut River in the Hartford area. One population was harvested and the second population was located too late to begin control measures.	Third phase of Orient Point County (NY) Park grassland restoration project scheduled to begin Spring 2000.
L1-2. Through Connecticut's coastal permit programs and consistency with the CT Coastal Management Act, applicants may be required to protect, restore or enhance aquatic resources.	CTDEP	Substantive progress	Through the requirements of the Coastal Zone Management Act and permitting programs, tidal wetlands, intertidal flats, submerged aquatic plants, and beaches and dunes are preserved. During 1999 several permitted activities resulted in a net positive impact of 90 acres of tidal wetlands.	
L1-3. Connecticut preparing a tidal wetland management plan that includes an identification of potential wetland restoration sites.	CTDEP	Complete	A wetland restoration plan has been developed that identifies restoration goals, strategies, and includes an inventory of potentially restorable sites. This inventory has been upgraded to include the delineation of the identified sites in GIS as part of the LISS habitat restoration initiative.	
L1-4. Connecticut will continue the Coves and Embayments Restoration program to restore degraded tidal and coastal embayments and coves.	CTDEP	Fully Met	CTDEP continued its Coves and Embayments program in 1999. The 5 wetland projects completed in 1999 and reported in L1-1 were funded in part by the Coves and Embayment program. These include 2 sites within Hammonasset State Park in Madison, the East River in Guilford, Mill Meadows in Old Saybrook and Davis Pond marsh in East Lyme. The Mill Meadow project represents the second wetland restoration project in the Nation to be completed with matching funds from DOT's ISTEPA.	Coves & Embayments program is beginning to automate project database and considering a web site in the future for sharing information on restoration projects.

KEY: 1) Type: Commitment, Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated

Status for Ongoing Programs and ongoing CCMP Actions: Fully Met, Substantive Progress, Partial Progress, Discontinued

1. RESTORATION AND ENHANCEMENT OF AQUATIC AND TERRESTRIAL HABITATS (CCMP TABLE 40, P.107)				
Ongoing Programs	Responsible Parties	Status ²	Description	Upcoming Action
L1-5. Connecticut, New York, and federal agencies currently administer programs for the restoration of habitats other than tidal wetlands such as dunes, submerged aquatic vegetation, and coastal woodlands.	CTDEP NYSDEC USFWS	Fully Met	See Ongoing Program L1-1.	
L1-6. New York is phasing out, and Connecticut prohibits, maintenance ditching of mosquito ditches in favor of selective use of open marsh water management techniques to control mosquitos and restore pools and ponds on tidal wetlands.	CTDEP NYSDEC federal agencies	Fully Met	Grid ditching was discontinued in Connecticut in 1985 and replaced with open marsh management. Ditches are gradually filling and restoring marsh habitat. In some cases, ditches are plugged with soil. On NYS property, remnant mosquito ditches are being used to control mosquito reproduction and minimize Phragmites colonization through salt water retention.	

1. RESTORATION AND ENHANCEMENT OF AQUATIC AND TERRESTRIAL HABITATS (CCMP TABLE 40, P.107)							
CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
L1-7. Coastal America, a cooperative effort of several federal agencies, is conducting a study in Connecticut to evaluate the impacts of transportation facilities upon ten tidal wetland sites. This study is sponsored by the CTDEP and undertaken by the USACE. When the study is completed, restoration plans will be developed for those sites where a transportation facility is shown to be the cause of degradation. Restoration is expected to be implemented through a combination of ISTEAs, Water Resources Development Act, Long Island Sound Cleanup Account funds, New York's Environmental Protection Fund, and, where appropriate, natural resources damages recovered under CERCLA or OPA90.	C	CTDEP CTDOT Coastal America Partners	Study was completed in 1994; restoration projects will proceed as funding is approved.	\$100,000 for the initial study; restoration costs will vary for each project site.	Study Complete	The study identified 5 tidal wetlands that were degraded as a result of transportation facilities. CTDEP developed a justification for restoring these sites using ISTEAs and Coastal America and CTDOT received funding. One of the original restoration projects identified in the Coastal America study has been completed by CTDEP. Mill Meadows in Old Saybrook was completed through a CTDEP, CTDOT and town of Old Saybrook partnership. The CT Coves and Embayment Program and DOT's ISTEAs program provided the funding for this project.	Continue to implement the remaining 3 projects and present new ones to Coastal America for consideration.

KEY: 1) Type: Commitment, Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated

Status for Ongoing Programs and ongoing CCMP Actions: Fully Met, Substantive Progress, Partial Progress, Discontinued

1. RESTORATION AND ENHANCEMENT OF AQUATIC AND TERRESTRIAL HABITATS (CCMP TABLE 40, P.107)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
L1-8. Connecticut's Coves & Embayments Program will complete nine restoration projects in progress and commitments to begin three new projects.	C	CTDEP in cooperation with the municipal sponsor	Varies depending on project	\$263,625 for projects in progress and \$123,475 for projects to commence	Complete	See Ongoing Program L1-1 and L1-4	
L1-9. Connecticut and New York should continue to pursue the use of funds from the following programs, and explore additional funding sources, to support restoration and enhancement activities described in the previous recommendation: The Land and Water Conservation Fund, the Intermodal Surface Transportation Efficiency Act (ISTEA) Enhancement Program, the Partners in Wildlife Program, § 319 of the Clean Water Act, Army Corps of Engineers Section 22 Planning Funds, the Water Resources Development Act, National Coastal Wetlands Conservation Grants, the North American Waterfowl Management Plan, Connecticut's Long Island Sound Cleanup Funds, and the Coastal Zone Management Act.	R	CTDEP CTDOT NYDOT NYSDEC NYSDOS EPA USACE USFWS	Ongoing	Existing staff will be used; project costs vary from site to site	Substantive progress	<p>CTDEP has a number of tidal wetland projects in progress using cited funds.</p> <p>With a §319 NPS grant CTDEP completed projects in 1999 at: Hammonasset Beach State Park; Higganum Cove, a tidal wetland in the Connecticut River estuary; and Jordan Cove. CT state Oil Spill funds restored Davis Pond, East Lyme.</p> <p>NYSDEC and USFWS are pursuing grants cooperatively through local governments for various habitat restoration projects to be funded by the USFWS.</p>	<p>CT is continuing to complete projects and is discussing other potential wetland restoration sites.</p> <p>Additional funding is being sought through the EPA Five Star Restoration Challenge Grant Program to conduct restoration of Lord's Cove on the lower CT River in Lyme.</p> <p>The LISS will continue to work to identify and secure funding for habitat restoration and enhancement activities on Long Island Sound.</p>

KEY: 1) Type: Commitment, Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated

Status for Ongoing Programs and ongoing CCMP Actions: Fully Met, Substantive Progress, Partial Progress, Discontinued

1. RESTORATION AND ENHANCEMENT OF AQUATIC AND TERRESTRIAL HABITATS (CCMP TABLE 40, P.107)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
L1-10. The rapid displacement of native brackish and fresh tidal plant communities on the Connecticut River has been identified as the single most significant habitat problem in this estuary. A specific restoration program for the control of common reed in these tidal wetlands needs to be implemented to check and reverse the spread of common reed and develop the most efficient means of effecting this restoration. Control techniques need to be evaluated for the full range of wetland habitat types on the river. Baseline surveys will be established and post-control monitoring over multiple years will be conducted.	R	CTDEP USFWS	3 years	\$130,000 for amphibious mulching machine and \$100,000 for staff, supplies, and monitoring.	Substantive Progress	<p>The restoration of degraded brackish marshes is ongoing in the lower Connecticut River.</p> <p>Restoration has begun on Nott Island WMA in Lyme. A \$224,000 matching grant through North American Waterfowl and Wetlands, and North American Wetlands Conservation Grant will be used to restore 350 acres of phragmites-dominated habitat on Great Island and Upper Island, Lyme. Research funds from the LIS License Plate Program were awarded to Yale University to study the genetic structuring of common reed on the tidelands of the CT River. A phragmites working group consisting of managers, scientists, and other interested parties has been established to develop a strategy for dealing with phragmites invasion, particularly on the lower CT River.</p> <p>Two populations of the invasive water chestnut (See L1-1) were identified in the tidal Connecticut River. One population was harvested in Glastonbury in 1999 and the other was found too late in the season to harvest.</p>	
L1-11. New York should continue to phase out maintenance ditching for mosquito control. These programs should receive additional support for selective use of open marsh water management techniques to control mosquitos and restore pools and ponds on tidal wetlands.	R	NYSDEC in cooperation with mosquito control agencies		\$1,000 per acre for open marsh water management	Partial Progress	This activity is ongoing in Suffolk County with cooperative efforts between Suffolk County Vector Control, NYSDEC, and USFWS.	Program is continuing. (See L1-6)
L1-12. Obtain long-term funding for Connecticut wetland restoration staff.	R	CTDEP	Upon approval of funding	\$250,000 per year for staff	Not Initiated	The Wetland Restoration staff remains funded by municipal and state funds on a project by project contractual basis.	Continue efforts to secure permanent, continuing funding.

KEY: 1) Type: Commitment, Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated

Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

1. RESTORATION AND ENHANCEMENT OF AQUATIC AND TERRESTRIAL HABITATS (CCMP TABLE 40, P.107)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
L1-13. Connecticut and New York should develop a restoration plan for the full range of coastal terrestrial and estuarine aquatic habitats adjacent to and in Long Island Sound. The restoration plan will include a list of potential restoration projects and a priority listing of projects to be implemented. Preliminary sites identified for future restoration in New York include: City Island (\$300,000); Pelham Bay Park (\$400,000); Wading River (\$50,000); Sunken Meadow Creek (\$50,000); Crab Meadow (\$50,000); and Mattituck Creek (\$100,000). Other sites in New York where costs have not been estimated include Pugsley Creek, Udall's Cove, Oak Neck Creek, Frost Creek, and East Creek. Connecticut has estimated that ten priority sites could be restored for \$750,000, or approximately \$75,000 per site.	R	CTDEP NYSDEC NYSDOS EPA NOAA USACE USFWS	3 years - (1996-1998)	\$50,000 per year for each state for three years; restoration costs will vary depending upon project type.	Complete	The initiative is being implemented through an interagency team focusing on 12 terrestrial and aquatic habitat types. See Ongoing Program L1-1.	
L1-14. New York should strengthen their capabilities for implementing programs that restore degraded habitats. This should be undertaken in cooperation with the implementation of the Long Island Sound Regional Coastal Management Plan.	R	NYSDEC NYSDOS		\$250,000 per year	Partial Progress	The NY State Clean Water/Clean Air Bond Act will fund some aquatic restoration projects. See L1-1.	The LIS Coastal Advisory Commission action plan is expected to be released in Spring 2000.

KEY: 1) Type: Commitment, Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated

Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

2. HABITAT PROTECTION AND ACQUISITION (CCMP TABLE 41, P.110)

Ongoing Programs	Responsible Parties	Status ²	Description	Upcoming Action
<p>L2-1. The states of Connecticut and New York and the USACE will continue to implement their permit programs and coastal consistency provisions of states' Coastal Management Programs to regulate use and development of aquatic resources and critical habitats such as tidal and freshwater wetlands, intertidal flats, submerged aquatic vegetation beds, beaches, and dunes.</p> <p>These programs also regulate dredging and the disposal of dredged sediments at designated sites in Long Island Sound. Open water disposal is only permitted at the designated open water sites and may only occur if the disposal will not cause adverse impacts to estuarine organisms.</p>	<p>CTDEP NYSDEC NYSDOS USACE EPA</p>	<p>Substantive Progress</p>	<p>CTDEP continues to implement its coastal permitting and Federal consistency review programs. During 1999, there were 314 permit and 6 Federal consistency actions. In addition, several new enhancements have occurred during this period.</p> <p>NYSDEC regulates dredging activities through its Tidal Wetlands and Protection of Waters Regulations.</p>	<p>SAV maps are being finalized for distribution to towns and Federal agencies.</p>
<p>L2-2. Connecticut will continue to reduce habitat degradation caused by storm water runoff projects (e.g. chronic dilution effects and sedimentation) through the goal of retaining the first one-inch of runoff.</p>	<p>CTDEP</p>	<p>Substantive Progress</p>	<p>This issue is addressed by the CTDEP in the review of any municipal project along the coast requiring mandatory coastal site plan review. The coastal permit program addresses this issue only when the discharge is directly into tidal wetlands and coastal waters. This provision has also been incorporated into the storm water general permits for industrial and construction activity.</p>	<p>Coastal municipalities applying for Phase II municipal storm water permits will work with CTDEP storm water permitting.</p>
<p>L2-3. Connecticut and New York have programs to acquire by easement, fee simple acquisition, or other means habitats important for populations of plants and animals. These programs include the development of priority listings for acquisition and protection.</p> <p>Connecticut and New York have land acquisition and management programs that use state funds and federal fund programs such as the Land and Water Conservation Fund, the National Coastal Wetland Conservation Program, and the North American Waterfowl Management Plan to protect and acquire coastal lands and wetlands.</p>	<p>CTDEP</p>	<p>Partial Progress</p>	<p>Land acquisition of open space in CT continues under the Recreation and Natural Heritage Trust Program (RNHT) using state bond funds. The RNHT plans to provide \$166 million in state bond funds for open space acquisitions by the year 2023. During 1999 CTDEP acquired 2,910 acres at a cost of nearly \$10.6 million while assisting municipalities, land trusts, and water companies with the purchase of another 4,203 acres with \$10 million through DEP's open space grant program</p> <p>CTDEP manages real property interests for over 211,000 acres of forest, park, wildlife, fishery, water access and natural areas. The state's goal is to reserve not less than 10percent of open/preserved space in Connecticut under DEP ownership and 21percent open/preserved space combined (federal, municipal, and nonprofit) ownership by the year 2023. The open space acquisitions made during 1999 brings Connecticut closer to the goal of 673,210 acres. Currently, an estimated 438,900 acres of open space are owned by the state, Federal government, municipalities, water companies and land conservation organizations (65% of goal). Highlights of land acquired include: Trout Brook Valley in Easton and Weston, acquired in partnership with the Aspetuck Land Trust and the Nature Conservancy; which added over 685 acres of open space to Connecticut providing vistas of LIS and the Saugatuck Reservoir; Oppell property, 2.26 acres: parcel fronts on the Connecticut River and within area of international significant wetlands; Hull property, 7.5 acres: donation of inaccessible property adjacent to Plum Bank Marsh Wildlife Area; Jordan Cove Property, 7 acres: property located in Jordan Cove-Pleasure Beach area of Waterford. Critical habitat located on the site, which includes piping plovers.</p>	<p>CTDEP is committing \$6 million for the first round of 2000 and will apply for \$12 million under RNHT before the State Bond Commission.</p> <p>NY is updating its open space plan in 2000 to include specific recommendations for LIS acquisition sites.</p>

KEY: 1) Type: Commitment, Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated

Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

2. HABITAT PROTECTION AND ACQUISITION (CCMP TABLE 41, P.110)

Ongoing Programs	Responsible Parties	Status ²	Description	Upcoming Action
L2-4. The USFWS maintains a national system of refuges, which includes the Stewart B, McKinney National Wildlife Refuge in Connecticut (i.e., Salt Meadow, Chimon Island, Sheffield Island, Goose Island, Milford Point and Falkner Island Units) and Long Island National wildlife Refuge Complex in New York (i.e., Oyster Bay and Target Rock units).	USFWS	Substantive Progress	USFWS continues to maintain its refuges in CT and NY.	
L2-5. Congress has authorized the creation of the Silvio Conte Connecticut River National Fish and Wildlife Refuge within the Connecticut River Watershed for the purpose of conserving, protecting and enhancing the Connecticut River Valley populations of plants, fish, and wildlife; preserving natural diversity and water quality; fulfilling international treaty obligations relating to fish and wildlife; and providing opportunities for scientific research and education.	USFWS	Substantive Progress	The USFWS has identified 48 focus areas within the 7.2 million acre, 4 state Connecticut River watershed, that support natural diversity in the watershed. The 180,000 acres in the focus areas are targeted for additional protection and management. The Refuge emphasizes partnerships and challenge grants to achieve its goals. In February 2000, the Refuge announced the award of \$88,922 to fund 22 projects in the Connecticut River watershed. (www.fws.gov/r5soc/)	
L2-6. Connecticut has established a Migratory Bird Conservation Stamp Program, the proceeds of which can be used for acquisition and management. The newly created state income tax form check off for endangered species, natural areas preserves, and watchable wildlife creates a fund that can be used for the identification, protection, conservation, management, and education activities related to the above listed wildlife and habitats.	CTDEP	Substantive Progress	Conservation Stamp program funds were used, in addition to other state and Federal program funds for the following tidal wetland restoration activities in 1999: Cromwell Meadows Wildlife Management Area (WMA) in Cromwell; Nott Island WMA Habitat Restoration (Phase I - Phragmites control) in Lyme, and the East River (WMA) Marsh Restoration Project in Guilford, and the Quinnipiac River and South Cove in Old Saybrook.	Projects expected to be completed in 2000: Great Meadow Marsh; the Housatonic River Marshes in Stratford, and the Great Island Complex WMA March restoration project in Old Lyme.

KEY: 1) Type: Commitment, Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated

Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

2. HABITAT PROTECTION AND ACQUISITION (CCMP TABLE 41, P.110)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
<p>L2-7. Create a Long Island Sound Reserve System consisting of areas of land and water of outstanding or exemplary scientific, educational, or biological value to reflect regional differentiation and variety of ecosystems and to include representatives of all of the significant natural habitats found in the Sound. Where appropriate, sites will be selected from existing lands and wetlands held for conservation purposes so that acquisition funds will be directed towards those lands in private ownership that are needed to complete the reserve system.</p> <p>The primary activities in the recommendation include site identification (2 years) and site protection through the development of management plans, acquisition where necessary, and site management.</p>	R	<p>CTDEP NYSDEC NYSOPRHP USFWS Long Island Sound Bi-state Committee</p>		<p>\$50,000 per year for each state for staff to identify sites, develop acquisition strategies and manage the reserve complex. Acquisition costs will depend upon areas identified for protection through purchase.</p>	Partial Progress	<p>The Long Island Sound Watershed Alliance (LISWA) prepared a resolution at its April 1999 meeting to support the creation of a LIS reserve. In June 1999 the LISS Citizens Advisory Committee (CAC) sent a letter to the LISS Policy Committee highlighting the creation of a LIS reserve as a priority action. A work group began meeting in July 1999 to work out the details of identifying a LIS reserve, criteria for habitat acquisition, funding options, and which agencies will have oversight responsibilities.</p>	<p>A coalition of groups is planning further action in 2000 to assess citizen involvement and participation in the LIS reserve process.</p>
<p>L2-8. Connecticut and New York should continue to acquire or protect through less than fee simple means, significant coastal habitats through funding sources such as the Land and Water Conservation Fund, the National Coastal Wetland Conservation Program, the North American Waterfowl Management Plan, Connecticut's Recreation and Natural Heritage Trust Program, Connecticut's Migratory Bird Conservation Stamp Program, New York's Environmental Protection Fund, and, where appropriate, natural resource damages recovered under CERCLA or OPA90.</p>	R	<p>CTDEP NYSDEC Assistance of local governments, environmental groups and federal granting agencies.</p>		<p>\$50,000 per year for each state for staff.</p>	Partial Progress	<p>As an example of habitat protection through less than fee-simple, more than 70 acres of high quality tidal marsh on the CT River in the Cromwell Meadows was donated to the CT Audubon as part of an supplemental environmental penalty.</p> <p>See L2-3.</p>	<p>CTDEP will continue to use RNHT to fund habitat land acquisition in Connecticut.</p>

KEY: 1) Type: Commitment, Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated

Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

2. HABITAT PROTECTION AND ACQUISITION (CCMP TABLE 41, P.110)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
L2-9. Acquire and protect those sites that are considered for acquisition in the New York State Open Space Conservation Plan. Sites include Oyster Bay Harbor (\$5 million); Porpoise Channel (\$2 million); Plum Point (\$1 million); Udall's Cove (\$8 million). Other sites on Long Island Sound that are among the state's highest priority acquisition sites include: Bronx River Trailway, Udall's Ravine, Alley Creek (\$750,000); Long Creek and Mattituck Creek (\$340,000); Premium River (\$750,000); and Cedar Beach Creek (\$186,000).	R	NYSDEC NYSOPRHP		Priority sites for acquisition total \$16 million	Partial Progress	New York has made allocations for land acquisitions through the Clean Air/Clean Water Bond Act.	New York State is updating its open space plan in 2000 with a focus on LIS areas.
L2-10. Acquire and protect those sites that are considered priorities for acquisition in Connecticut. The Great Meadows site is the highest priority. (See also Ongoing Programs portion of this table in the CCMP.)	R	CTDEP USFWS		\$14 million	Partial progress	The lower CT River, designated as a Wetland of International Importance, is a priority. See action L2-8.	
L2-11. Encourage activities of existing Long Island Sound-specific land trusts and encourage formation of new trusts, to seek donations and easements of localized habitat areas for the plants and animals of Long Island Sound.	R	NYSDEC EPA-LIS Office		Redirect base program	Not Initiated		

KEY: 1) Type: Commitment, Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated
 Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

3. INVENTORIES AND MANAGEMENT STRATEGIES FOR AQUATIC AND TERRESTRIAL HABITATS (CCMP TABLE 42, P.112)

Ongoing Programs	Responsible Parties	Status ²	Description	Upcoming Action
L3-1. Connecticut, New York and The Nature Conservancy will continue the Natural Diversity Database in Connecticut and the Natural Heritage Program in New York. These programs collect, maintain, and update information pertaining to significant terrestrial and aquatic habitats.	CTDEP NYSDEC NYSOPRHP	Fully Met	CTDEP's natural diversity database maintains information about locations of state listed species (plants, vertebrates, invertebrates), populations and status, including population size, threats, and dates observed. NYSDEC maintain a database concerning significant fish, wildlife, and plant resources and significant ecological areas. The NY State Office of Parks, Recreation and Historic Preservation (NYSOPRHP) established its own natural resources inventory unit which will be closely coordinated with the National Heritage Database.	
L3-2. The USFWS will continue the Southern New England-New York Bight Coastal and Estuary Project. The project focuses on assessing and monitoring the regional geographic distribution and population status of a large number of key species called <i>Species of Special Emphasis</i> and their habitats including evaluating the threats to physical integrity of these habitats and the viability of species populations. Primary objectives are to determine and delineate those regionally important habitats and species populations requiring both immediate and long term protection, conservation, enhancement, and restoration.	USFWS	Substantive Progress	The Project, located in Charlestown, Rhode Island, coordinates FWS coastal activities. Its 5 tasks are: 1) inventorying and assessing the status of living coastal resources and habitats in the coastal region; 2) identifying and assessing threats to these resources; 3) developing regional or estuary-wide strategies to protect, restore and enhance living resources and their habitats; 4) coordinating and facilitating the implementation of resource protection enhancement, and restoration strategies; and 5) promoting environmental education and public awareness of coastal living resources, the threats they face, and the opportunities for the public to become involved in the solutions. In 1999, Project staff have actively participated in the LISS Habitat Restoration initiative and in discussions on a LIS reserve system. In 1999, Project staff participated on the LISS public information and education program Small Grants Review Team.	

KEY: 1) Type: Commitment, Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated
Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

3. INVENTORIES AND MANAGEMENT STRATEGIES FOR AQUATIC AND TERRESTRIAL HABITATS (CCMP TABLE 42, P.112)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
L3-3. The NYSDEC will, on a pilot basis, develop a site-specific habitat management strategy for the Oyster Bay/Cold Spring Harbor complex. Phase II will entail implementation of the identified strategy.	C	LISS NYSDEC	Initiated in fall 1992, strategy to be completed in winter 1994	\$50,000 of LISS funds for the development of the strategy. Implementation costs to be determined	Behind Schedule	A final draft has been submitted to EPA-LISO for final review. Work continues on development of a habitat management strategy for Milton Harbor in Rye, NY. Work has been completed on a habitat management strategy for Mt. Sinai Harbor, NY.	A draft habitat management strategy for Milton Harbor is expected in Summer 2000.
L3-4. Connecticut is identifying wetland complexes of statewide significance and general wetland protection strategies for areas located in Long Island Sound and the Connecticut River. This project has been funded by the EPA under §104(b) of the Clean Water Act.	C	CTDEP	Fall 1994	\$62,500.	Behind Schedule	CTDEP has completed the identification of wetland complexes of statewide significance and general wetland protection strategies. Staff are in the process of completing a draft report.	Continue efforts to complete report
L3-5. Develop a nomination document to recommend the designation of the Connecticut River estuary as a <i>Wetland of International Importance</i> for the purpose of establishing a formal designation of this area to recognize the ecological significance of this ecosystem and to foster increased protection of its significant habitat complex and living resources.	C	CTDEP	Fall 1994	\$25,000	Complete	The nomination document was completed in summer 1994 and submitted to the Ramsar Convention Bureau in Switzerland. The nomination was approved and the portions of the tidal wetlands and all of the tidal waters on the lower river were designated as a Wetland of International Importance in October 1994. Subsequently, several new parcels owned by three new partners were added to the designation. To celebrate the 25th anniversary of the Ramsar Convention, a series of public outreach efforts were sponsored in 1996 by CTDEP and USFWS.	
L3-6. Develop a strategic plan for the estuarine portion of the Connecticut River that will identify habitat and species issues/problems, monitoring, and research needs and recommendations to foster increased protection of this nationally significant ecosystem.	C	CTDEP	2 years	\$50,000 per year for two years	Substantive Progress	CTDEP continues to make progress in the development of a Special Area Management Plan for the lower Connecticut River. The emphasis of this effort is to develop a management plan that promotes the conservation and restoration of living resources and their habitats. A task force has been assembled to provide advice and recommendations to CTDEP. Meetings were held to solicit ideas.	

KEY: 1) Type: Commitment, Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated
Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

3. INVENTORIES AND MANAGEMENT STRATEGIES FOR AQUATIC AND TERRESTRIAL HABITATS (CCMP TABLE 42, P.112)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
L3-7. Develop and periodically update a list of significant habitats, habitat complexes, and sensitive areas for protection and management. When completed, habitat management plans will be developed for these areas. In New York this should be undertaken in cooperation with the implementation of the NYSDOS Long Island Sound Regional Coastal Management Plan.	R	CTDEP NYSDEC NYSDOS	Started in 1995.	\$50,000 per year for each state	Substantive Progress	See Action L1-13. NYSDOS is updating its Significant Fish and Wildlife Habitat descriptions. A draft narrative document is currently under agency review with NYSDOS.	NYSDOS will circulate the narrative document to outside local, state, and federal agencies in Fall 2000.
L3-8. Expand the Southern New England-New York Bight Coastal and Estuary Project to: 1) include the watersheds of Long Island Sound; and 2) reexamine the habitat complexes previously identified in Long Island Sound based upon the most current listing of Species of Special Emphasis. Examine the complexes more carefully to fine tune the management recommendations and implement these recommendations through state, county and municipal agencies.	R	USFWS	Ongoing		Partial Progress	USFWS continued as an active participant in the LISS Habitat Restoration Initiative providing data on some key habitats in 1999.	
L3-9. Federal habitat programs should develop a watershed approach to protection of living resources of Long Island Sound and their habitats, such as development of a Connecticut River/Long Island Sound Management Unit by the USFWS.	R	USFWS	Ongoing		Partial Progress	USFWS has formed a CT River team, bringing different service units together with a watershed focus.	

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Status for Ongoing Programs and ongoing CCMP Actions: Fully Met, Substantive Progress, Partial Progress, Discontinued

3. INVENTORIES AND MANAGEMENT STRATEGIES FOR AQUATIC AND TERRESTRIAL HABITATS (CCMP TABLE 42, P.112)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
<p>L3-10. Designate portions of the Connecticut River estuary as a National Estuarine Research Reserve. A reserve designation will result in promoting research that is directed towards resource management issues and provide facilities and programs for public education and interpretation.</p>	R	CTDEP NOAA	3 years for selection of sites and the development and approval of the management plan	\$150,000	Partial Progress	<p>The Connecticut River was declared a river of significance under the American Heritage Rivers (AHR) Initiative in July 1998. AHR status includes an Action Plan and 29 specific projects focused on conserving and enhancing the economic, cultural heritage and environmental resources of the River and its watershed. The plan involves communities and groups up and down the length of the River supported by federal agencies, from EPA to HUD.</p> <p>There are several first steps. A formal partnership agreement between the local AHR project sponsors and their federal agency partners has to be drafted. A lead federal agency needs to be selected, and a River Navigator chosen. All of these steps involve the local sponsors and representatives from the Council on Environmental Quality and the principal federal agencies already actively working in the Watershed.</p>	<p>The expectation is to have the partnership agreement signed and the lead agency and River Navigator selected by the end of 2000.</p>

KEY: 1) Type: Commitment, Recommendation

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 Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

4. MANAGING ENDANGERED AND THREATENED SPECIES (CCMP TABLE 43, P.116)

Ongoing Programs	Responsible Parties	Status ²	Description	Upcoming Action
L4-1. Connecticut, New York, and federal agencies will continue to implement their Endangered Species Programs in order to protect endangered and threatened species that live in and adjacent to Long Island Sound.	CTDEP NYSDEC	Substantive Progress	CTDEP's National Diversity Database (NDD) reviews all coastal permits for impacts to state and federal listed endangered, threatened and special concern species. A LIS License Plate Fund project provided the NDD with funding to prepare 25 endangered, threatened, and special concern plant fact sheets for coastal areas. The NDD has provided all coastal towns with generalized maps of locations of state listed species to be used for municipal plans of conservation and development, land protection activities and environmental planning, including local inland wetland permits. In New York, impacts to state and federal endangered, threatened, and special concern species are considered during the permitting process. As described in L3-1, NYSDEC maintains a database containing information about significant fish, wildlife, and plant resources and significant ecological areas.	

4. MANAGING ENDANGERED AND THREATENED SPECIES (CCMP TABLE 43, P.116)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
L4-2. Develop a list of endangered and threatened invertebrates. Maintain and update the diversity database. Periodically revise the list of threatened and endangered species. Expand the monitoring program, identify essential habitats, and develop recovery plans.	R	CTDEP		\$150,000 per year for staff; \$200,000 per year for least tern and piping plover nest site restoration	Fully Met	CTDEP's Natural Resources Center maintains a natural diversity database that provides up to date information and data on the State's threatened and endangered species..	CTDEP will continue to keep the database current.
L4-3. Develop legislation or regulations in New York state that will minimize disturbance to the essential habitats of rare plants and animals.	R	NYSDEC		Redirect Base Program	Not Initiated		
L4-4. Revise and publish a list of rare and sensitive species associated with the coastal lands and waters of Long Island Sound.	R	NYSDEC	Every 5 years	\$50,000	Partial Progress	NYSDEC staff are compiling a list of rare plants associated with wetlands in Long Island Sound as part of the LISS Habitat Restoration Initiative.	This list is intended to be included in an appendix to the freshwater wetlands technical document to be produced by the LISS Habitat Restoration Initiative.

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Status for Ongoing Programs and ongoing CCMP Actions: Fully Met, Substantive Progress, Partial Progress, Discontinued

5. MANAGING HARVESTED SPECIES (CCMP TABLE 44, P.117)

Ongoing Programs	Responsible Parties	Status ²	Description	Upcoming Action
L5-1. Development and implementation of fishery management plans, including research, monitoring, and conservation law enforcement activities.	NYSDEC	Fully Met	NYSDEC, as mandated by the Atlantic States Marine Fisheries Commission, has amended marine fishing regulations affecting recreational and commercial harvest of summer flounder (fluke), tautog (blackfish), and black sea bass until June 19, 1998. This was done in order to restore healthy populations of these species. There are ongoing monitoring programs for striped bass, weakfish, winter flounder, fluke and scup. Statistics on other species taken in these surveys are crabs and bait fish. Party boat sampling for blackfish is also conducted.	NYSDEC is initiating an American eel management program focused on young-of-the-year recruitment
L5-2. Management of shellfish aquaculture activities including resource monitoring.	CTDOA, Bureau of Aquiculture.	Fully Met	CT DA/BA regularly monitors, manages and enhances shell fisheries in the state.	
L5-3. Improvement of anadromous fish passage opportunities including associated research and monitoring activities.	CTDEP	Substantive Progress	The Habitat Restoration Initiative targets river migratory corridors for anadromous fish passage as one of the targeted habitat types. CTDEP used \$319 funds to restore fish passage in Connecticut streams. Approximately \$170,000 has been spent or committed in the past year to build a fishway on a tributary to the CT River in Old Lyme; plan a fish ladder on the Quinnipiac River; breach a dam on the Naugatuck River; and restore fish passage on a tributary to the Farmington River. The Mianus fish passage project was completed with funding from CTDEP's Coves and Embayments program.	As part of a NY Clean Air/Clean Water Bond Act award, the Town of Huntington, in cooperation with USFWS will be installing a fish ladder at Betty Allen Nature Preserve.
L5-4. Wildlife management, including research and monitoring activities in support of management programs.	USFWS CTDEP NYSDEC	Fully Met	Agencies continue their wildlife management, research and monitoring programs.	
L5-5. Activities that minimize mortality due to entrainment and impingement of eggs, larvae, and juvenile and adult aquatic organisms at industrial facilities.	CTDEP	Fully Met	CTDEP works through the permit process to see that location/operation of intakes minimize entrainment and impingement where practicable. In 1999 staff from CTDEP began to work on permit modifications to better enforce entrainment and impingement provisions in permits.	

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Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

5. MANAGING HARVESTED SPECIES (CCMP TABLE 44, P.117)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
L5-6. Define, revise, and coordinate the establishment of seasonal restrictions for dredging that minimize adverse effects on aquatic organisms, especially finfish and shellfish and their habitats.	C	LISS CTDEP NYSDEC NYSDOS EPA NOAA USACE USFWS MSRC/SUNY	1994	Redirection of base program	Fully Met	<p>CTDEP incorporates seasonal restrictions on dredging and disposal activities into permit authorizations for a number of sensitive living resources including anadromous finfish, winter flounder, and shellfish.</p> <p>CTDEP's Long Island Sound Research Fund supported research on the effects of suspended sediments on survival of winter flounder eggs and larvae. The Fisheries Division has surveyed five rivers and harbors for occurrence of winter flounder larvae and the Department of Transportation has funded studies of noise associated with bridge work. These activities improve our ability to assess the need for and timing of seasonal restrictions on dredging and other construction activities to protect living resources.</p> <p>The LISS co-sponsored a LIS Dredged Material Management workshop in March 1999.</p> <p>NYSDEC incorporates seasonal restrictions on dredging and disposal activities into permit conditions to protect a number of sensitive living resources, including finfish and shellfish, and for restrictions on shore disposal activities to protect sensitive species of shorebirds.</p>	
L5-7. Enhance implementation of interstate fishery management plans for Long Island Sound fishery resources.	R	CTDEP NYSDEC NMFS USFWS	To be initiated upon approval of funding	\$250,000 per year per state will be used to fund fishery management staff and, in Connecticut, law enforcement officers.	Partial Progress	New York passed legislation in 1998 to further restrict commercial purse seine vessel activity in NY waters of LIS.	The LIS menhaden moratorium was extended to July 2001.

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Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

5. MANAGING HARVESTED SPECIES (CCMP TABLE 44, P.117)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
L5-8. Expand efforts to bypass obstructions to anadromous finfish migrations on Connecticut tributaries to Long Island Sound and the Connecticut River by constructing or installing fishways or fishlifts.	R	CTDEP Municipal governments and environmental organizations USFWS NMFS	To be initiated with enhanced funding	\$100,000 per year for CTDEP staff to administer activities and construct small tributary fishways. Costs to be determined as project opportunities arise.	Substantive Progress	Anadromous fish passage is being enhanced through cooperative efforts of CTDEP, municipalities and dam owners. Also see LR&H5-3. Eleven riverine migratory corridor projects (see LR&H1-1) were completed or placed into service in 1999. Four dam removal projects opened up over 15 miles to fish migration. Three dams, Anaconda, Union City, and Freight Street, were completely removed and the breached opening of the Platts Mill Dam was widened to expedite fish passage during 1999 (all on the Naugatuck River). Seven fish passage projects were completed or placed in operation in 1999: 1) modification of the existing pool and weir fishway by adding a steep pass extension at the Lower Pond Dam fishway in Lyme; 2) installation of a pool and weir fishway at Lower McCulloch Dam in Old Lyme; 3) construction of a pool and weir fishway at Chalker Millpond Dam in Old Saybrook; 4) construction of a Denil Fishway and downstream bypass at the Kinneytown Dam in Seymour; 5) installation of a steep pass fishway at Trading Cove Dam in Montville; and 7) construction of a Denil Fishway around Versailles Pond Dam in Sprague. A total of 22.5 miles of riverine migratory corridors were opened up as a result of these completed projects.	
L5-9. Enhance municipal shellfish restoration programs.	R	Municipal governments	Upon funding	\$100,000 per state per year for a number of small grants to municipalities to enhance oyster, clam and bay scallop restoration efforts.	Partially Addressed	Several municipal governments in Connecticut are carrying out small programs using existing resources at the local level.	

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 Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

5. MANAGING HARVESTED SPECIES (CCMP TABLE 44, P.117)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
L5-10. Enhance the Connecticut Oyster Restoration Program on public beds in state waters by stocking settling habitat (cultch) and conducting related activities (e.g., resource sampling).	R	CTDOA, Bureau of Aquiculture	To be initiated with enhanced funding. On-going.	\$100,000 per year for staff and \$400,000 per year for purchase of cultch for maintenance of restored beds.	Partially Addressed	CT DOA, the shellfish industry, and the former United Illuminating Company joint venture was established to manage cultures on public beds, with a budget of \$100,000 in 1999.	
L5-11. Develop a marine biotoxin assessment program for shellfish.	R	CTDOA, Bureau of Aquiculture NYSDEC	To be initiated upon approval of funding. On-going.	\$300,000 per year in Connecticut and \$150,000 per year in New York for staff and laboratory costs.	Partially Addressed	CT DOA initiated monitoring using existing agency resources. Fixed stations are monitored in susceptible areas and laboratory analyses are conducted.	CT Department of Agriculture training volunteers to monitor phytoplankton in LIS.
L5-12. Develop artificial reefs in appropriate areas of New York waters to increase fishing opportunities, consistent with the New York State Artificial Reef Development Plan. Plans have been developed to construct reefs in New York waters of Long Island Sound off Matinecock Point, Eatons Neck, Miller Place/ Mt. Sinai, and Mattituck Inlet.	R	NYSDEC and Cooperators	To be initiated upon approval of funding	Approximately \$100,000 for each of four reefs planned for Long Island Sound.	Not Initiated	In the absence of funding and staff necessary to develop additional artificial reefs, NYSDEC's Artificial Reef Program has been focused on existing artificial reefs.	The feasibility of building an oyster reef in Port Jefferson Harbor will be explored.

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Status for *Ongoing Programs* and *ongoing CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

5. MANAGING HARVESTED SPECIES (CCMP TABLE 44, P.117)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
L5-13. Develop methods to reduce the incidental take of nontarget species and undersized individuals in fishing activities.	R	CTDEP NYSDEC NMFS USFWS Atlantic States Marine Fisheries Council New England and Mid-Atlantic Fishery Management Councils Commercial and recreational fishing organizations.	To be initiated upon approval of funding	\$50,000 per year per state for staff and \$10,000 - \$20,000 per year for test materials and equipment.	Partially addressed	State agencies, the Atlantic States Marine Fisheries Commission, and fishery management councils have reduced the incidental take of juveniles and some non-target species through increased cod end mesh size restrictions in otter trawls and escape vents in certain pot and trap fisheries for lobsters and finfish.	

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Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

6. MANAGING EXOTIC AND NUISANCE SPECIES (CCMP TABLE 45, P.120)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
<p>L6-1. Develop measures to prohibit or prevent the induction or release to Long Island Sound and its watershed of known or potentially undesirable species.</p>	R	<p>CTDEP NYSDEC USFWS U.S. Coast Guard Shipping Companies</p>	<p>To be initiated as soon as possible</p>	<p>\$50,000 per year per state for staff to develop and manage program</p>	<p>Partial Progress</p>	<p>Through its coastal permit programs, CTDEP prohibits the introduction of non-indigenous plant stock for aquatic restoration projects such as tidal wetlands and eelgrass. Only plant stock collected in LIS is allowed. DEP discourages the use of beach grass in dune grass restoration that is not derived from the shores of the Sound. PA 97-32 established the authority for the CTDOA to control the importation, cultivation, or raising of aquatic plants or animals that are not native to the state that might have adverse impacts upon living resources or aquatic habitats.</p> <p>CTDEP is working with USFWS and other organization in Massachusetts to remove an infestation in the Connecticut River in Holyoke, MA.</p> <p>NYSDEC, in its Tidal Wetlands Permitting Program, expressly discourages introduction of exotic species to the coastal environment.</p>	<p>CTDEP and East Hartford officials are working towards an eradication plan for the Hockanum River infestation site for the summer of 2000.</p>
<p>L6-2. Implement a management program to reduce abundance of mute swans that are causing losses of certain aquatic habitat types such as submerged aquatic vegetation and certain types of emergent tidal wetland vegetation.</p>	R	<p>CTDEP</p>	<p>To be initiated as soon as possible</p>	<p>To be included within costs of above item.</p>	<p>Not Initiated</p>		

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Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

7. EDUCATING THE PUBLIC ABOUT THE PLANTS AND ANIMALS OF LONG ISLAND SOUND (CCMP TABLE 46, P.120)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
<p>L7-1. Develop an outreach program to inform and educate the public about the plants and animals in Long Island Sound.</p>	R	<p>Federal, state, and local governments, educational systems, organizations, and environmental organizations</p>		<p>See Public Involvement and Education Section</p>	Substantive Progress	<p>CTDEP continues to promote public involvement and education through many of its programs, especially use of LIS License Plate Funds. Examples include: Tidal Marshes of LIS; A Guide to the Housatonic River; Tidelands of the Connecticut River; the placement of interpretive signs or observation platforms at 12 coastal locations; displays and equipment at the Meigs Pont Nature Center; LIS Video for elementary through high school students; A Living Harvest: Oystering in LIS; Celebrating the Sea classroom programs; a mobile environmental library for the Old Saybrook schools; Birds of the CT Coast on display at the CT Museum of Natural History; Marine Animals of Southern New England and New York: an identification key; Long Island Sound Alive: a laser disc production showing the resources of LIS; the salt marsh laboratory at CT Audubon Coastal Center; fact sheets about endangered species; and development of an interpretive trail at Cove Island State park.</p> <p>NY Sea Grant/CT Sea Grant produced a slide show, script, and booklet on the plants and animals of LIS that are available to groups.</p>	<p>CTDEP will produce three brochures on CT's Coastal Management Program to be issued by May 2001.</p>
<p>L7-2. Develop a citizens monitoring program specific to the plants and animals of Long Island Sound sufficient to aid managers in identifying problems and assessing the effects of management efforts.</p>	R	<p>Federal, state and local governments, educational and environmental organizations and private citizens.</p>		<p>See Public Involvement and Education Section</p>	Partially Addressed	<p>CTDEP works with citizens monitoring groups to promote reliable and accurate field and laboratory efforts, including a volunteer Secchi disk monitoring program to determine long term changes in water clarity resulting from nitrogen enrichment and management and benefits for eelgrass beds.</p> <p>CTDEP is reviewing Secchi disk data from 1998/1999. Only one volunteer monitoring group submitted data from one site in 1999. The program has experienced turnover and decline in volunteer monitors and CTDEP is currently soliciting citizens to join as new volunteer monitors.</p>	<p>The Secchi disk program is ongoing and seeks to add more volunteer monitors in 2000</p>

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Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

8. DEVELOPING AN INFORMATIONAL DATABASE ABOUT LIVING RESOURCES AND THEIR HABITATS (CCMP TABLE 47, P.122)

Ongoing Programs	Responsible Parties	Status ²	Description	Upcoming Action
L8-1. Connecticut will continue its statewide Geographic Information System (GIS) Program to digitize spatial information and data for resource management purposes.	CTDEP	Fully Met	CTDEP's Natural Resources Center continues its efforts to develop data layers on the State's GIS, useful for resource management purposes.	
L8-2. Connecticut has created a Long Island Sound Resources Center for the purpose of : 1) developing the full potential of estuarine related GIS applications; 2) computerizing pertinent literature and data for rapid access through standard word search and spatial basis; and 3) completion of the estuarine geology of Long Island Sound. Additionally, this Center is taking a leadership role in the development of side scan sonar mapping of Long Island Sound that is now being overlaid with benthic community information. This will become the foundation of future living species and habitat management programs.	CTDEP	Fully Met	The collection is now on-line and searchable via the world-wide-web. A new survey of LIS sedimentary habitats is nearing publication. The Center is working on a public access database. A compact disc (CD) of LIS environmental studies -- sidescan sonar, seismic reflection, bathymetric, sediment and bibliographic data and interpretations is available from Woods Hole Institute. (Open file Report 98-502)	

8. DEVELOPING AN INFORMATIONAL DATABASE ABOUT LIVING RESOURCES AND THEIR HABITATS (CCMP TABLE 47, P.122)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
L8-3. Identify spatial data for living resources and habitat on a Sound wide basis and digitize priority data sets for incorporating into a Sound wide Geographical Information System.	C	LISS	Initiated in winter of 1993-1994; completion date is winter 1994-1995	\$97,000 LISS Funds	Substantive Progress	Through funding provided by the LISS, an electronic base map for all of LIS that incorporates the most current bathymetry has been created. CTDEP is developing GIS projects and resource coverages. CTDEP encouraged NOAA to update the 1984 Environmental Sensitivity Index mapping project that is used to support oil spill planning and response. NOAA secured funding for that project, scheduled to begin January 2000. CTDEP continues to expand the Oil Spill GIS project. The waterfowl coverage was radically revised and enhanced. The waterfowl boundary areas have been revised and data about waterfowl use has been added to the data tables. Staff updated all of the existing projects to be compatible with the new GIS server and convert data to the new system.	

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8. DEVELOPING AN INFORMATIONAL DATABASE ABOUT LIVING RESOURCES AND THEIR HABITATS (CCMP TABLE 47, P.122)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
L8-4. Expand the data layers for living resources and their habitats on a Sound wide basis.	R	EPA-LIS Office	5 years	\$75,000 per year	Not Initiated		
L8-5. Develop and maintain state databases and an integrated Long Island Sound database describing the living resources of Long Island Sound and their habitats.	R	CTDEP NYSDEC		\$50,000 per year for each state for staff and \$100,000 one-time only for data processing hardware/software	Partially Addressed	CTDEP maintains statistical databases on Long Island Sound marine resource surveys, inshore seine surveys, and lobster studies. NYSDEC maintains statistical databases on lobster, seine surveys, anadromous fish, and party/charter boat surveys in Long Island Sound.	
L8-6. Expand the side scan sonar/benthic habitat mapping program in order to create baseline information for management and conservation purposes.	R	CTDEP USGS		\$100,000 per year for 5 years	Partially Addressed	The USGS and Coastal and Marine Geology Program, in cooperation with CTDEP initiated a multidisciplinary project designed to understand the distribution of bottom contaminants and benthic habitats in LIS. Benthic mapping was an integral part of the program. This project prompted a number of studies that were focused on regional processes, conditions and characteristics of the LIS floor. For 1999-2000, ten research papers have been completed and are under review by the CTDEP. The side scan sonar mapping for this project has been completed.	The CTDEP, in cooperation with USGS expects to publish a series of ten LIS research papers in the Journal of Coastal Research for the winter of 2000-2001. A new CD will be produced by 2001 containing new maps and data
L8-7. Maintain and enhance the Long Island Sound literature, indexing and GIS capabilities of the Marine Sciences Research Center at SUNY, Stony Brook.	R	MSRC/SUNY		\$75,000 per year	Not Initiated		

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Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

9. SOUND WIDE AND SITE-SPECIFIC RESEARCH AND MONITORING (CCMP TABLE 48, P.123)

Ongoing Programs	Responsible Parties	Status ²	Description	Upcoming Action
<p>L9-1. Connecticut conducts a Sound wide open water fishery survey that has become an integral component of the LISS monitoring and Management programs. In addition, Connecticut conducts a nearshore finfish survey, and surveys of lobster, shad, anadromous herrings, Atlantic sturgeon, and shortnose sturgeon (the latter is listed by the federal government as an endangered species). Other marine surveys include a survey of oyster recruitment (Connecticut Department of Agriculture, Aquiculture Division) and recreational and commercial fishery statistics activities.</p>	<p>CTDEP</p>	<p>Substantive Progress</p>	<p>Enhancements to recreational and commercial fishing statistics are being developed through Atlantic States Marine Fisheries Commission (ASMFC), Atlantic Coast Cooperative Statistics Program (ACCSP), NMFS and coastal states taking part.</p> <p>CTDEP applies for Federal funds under the Federal Aid in Sport Fish Restoration Act for five-year projects. Each year CTDEP produces an annual report on the LIS Soundwide surveys; at the end of the project period, it produces a final report. In 1999 CTDEP completed a five year project and reported its Soundwide survey data in <i>A Study of Marine Recreational Fisheries in Connecticut</i>. The report for March 1994-February 1999 is available upon request. The program allocated over \$2 million for the project period 1994-1999.</p>	<p>CTDEP has applied for the next round of project funds and is beginning the next round of surveys for 2000. The next 5 year report will be prepared and available to the public for the year 2001.</p>
<p>L9-2. Connecticut conducts nesting surveys of colonial water birds, Least Tern and Piping Plover, Osprey, waterfowl, a mid-winter eagle survey, and surveys of diamond-backed terrapin, threatened and endangered terrestrial species, and other species of special concern.</p>	<p>CTDEP</p>	<p>Substantive Progress</p>	<p>CTDEP's Natural Diversity Database maintains "Heritage" information and develops GIS coverages resulting from Wildlife Division surveys of avifauna.</p>	
<p>L9-3. New York conducts an American lobster mortality project funded by the LISS. In addition, New York conducts the NMFS's Recreational Fishery Statistics Survey, surveys of commercial fishery landings, seabird surveys, (e.g., ospreys, piping plovers, least terns), surveys of threatened and endangered species and species of special concern, and other surveys as needed.</p>	<p>NYSDEC USNMFS</p>	<p>Substantial Progress</p>	<p>NYSDEC and CTDEP are working together to address concerns over the NMFS's proposed regulations on lobster size. NYSDEC is funding an effort to determine genetic differences of western LIS lobsters to enhance management capabilities. If it can be demonstrated that LIS lobsters migration and reproductive cycles differ from that of east coast populations, better fisheries management policies may be developed and implemented for LIS populations. A final report for the LISS-funded lobster mortality project is available.</p> <p>NYSDEC and CTDEP have funded and conducted lobster mortality research related to the 1999 mortalities observed in LIS. Identification of a paramoeba infecting lobsters has been the subject of current research.</p>	<p>CT and NY are pursuing Federal funding for additional lobster mortality research.</p>

KEY: 1) Type: Commitment, Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated

Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

9. SOUND WIDE AND SITE-SPECIFIC RESEARCH AND MONITORING (CCMP TABLE 48, P.123)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
L9-4. Connecticut should pursue the construction and staffing of a marine science technology center at Avery Point with a research focus on Long Island Sound.	R	CTDED CTDEP CTDOA University of Connecticut		\$33 million in capital costs; \$4 million per year in operating costs	Partially Addressed	Through the UCONN 2000 bonding program, the marine sciences technology program at Avery Point is expanding, including addition of new professional staff and facility renovation and expansion. A new Marine Science and Technology Center at Avery Point was under construction in 1999.	The new MSTC building will be completed in Fall 2000.
L9-5. Enhance wildlife monitoring activities (e.g., seabirds, waterfowl, and marine turtles).	R	CTDEP		\$50,000 per year for staff, interns and contract work	Partially Addressed	The Norwalk Maritime Center and Mystic Aquarium s conducting periodic surveys of seal populations in western LIS. CTDEP conducts colonial waterbird surveys at approximately 72 sites, most of which are located offshore. During 1999 only a partial survey was conducted. CTDEP is reviewing and tabulating 1999 results.	CTDEP will conduct another partial survey in 2000 and will solicit the public to participate as volunteer monitors.
L9-6. Monitor the status and trends of eelgrass in the Sound and all species of submerged aquatic vegetation in the Connecticut River using remote sensing and ground surveys.	R	CTDEP EPA	To be initiated upon funding	\$100,000 per year for photography, field surveys, and boundary delineations	Partially Addressed	Baseline mapping for eelgrass in the Sound and submerged aquatic vegetation in the Connecticut River have been completed. No new remote sensing has been conducted to determine trends. A volunteer Secchi disk monitoring program has been implemented to evaluate trends in water clarity to guide eelgrass restoration efforts.	
L9-7. New York should initiate a nearshore fishery independent survey of Long Island Sound.	R	NYSDEC	To be initiated upon funding	\$150,000 per year	Not Initiated		
L9-8. Continue the lobster mortality and disease monitoring project in Long Island Sound.	R	NYSDEC	Annually	\$65,000 per year	Not Initiated		

KEY: 1) Type: Commitment, Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated

Status for Ongoing Programs and ongoing CCMP Actions: Fully Met, Substantive Progress, Partial Progress, Discontinued

10. LIVING RESOURCES AND HABITAT RESEARCH (CCMP TABLE 49, P.124)				
Ongoing Programs	Responsible Parties	Status ²	Description	Upcoming Action
L10-1. Connecticut will continue the Long Island Sound Research fund. This fund is used to foster research that addresses priority management issues in Long Island Sound including living species and their habitats.	CTDEP	Discontinued	Funds were not available for 1996-98.	A list of living resource research priorities was included with the License Plate Program RFP for the 1999 and 2000 funding rounds

10. LIVING RESOURCES AND HABITAT RESEARCH (CCMP TABLE 49, P.124)							
CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
L10-2. Connecticut has funded the following living resources and habitat research: evaluation of the causes of declines of eelgrass; assessment of contaminant levels in the greater scaup; changes in the phytoplankton community resulting from nitrogen enrichment; effects of hypoxia on bottom feeding fish; vegetation changes in a restoring tidal wetland; and mapping of benthic communities.	C	CTDEP and various Connecticut researchers	Each research topic has a different completion date from 1994 to 1998.	\$1,500,000	Some are Completed, some are Behind Schedule. See Description.	<p>Projects funded that are complete include: a study of water quality impacts of degraded marshes; statewide land cover mapping; benthic community mapping and characterization; dredging impacts on winter flounder; impacts of phragmites on the lower CT River; sediment accumulation in coastal coves; changes in phytoplankton community resulting from nitrogen enrichment; mapping of submerged aquatic vegetation in lower CT River; and a study of fish and seafood consumption in CT.</p> <p>Projects that are behind schedule are: an evaluation of causes of eelgrass decline and methods of restoration; and effects of hypoxia on bottom-feeding fish.</p>	Complete remaining projects.
L10-3. Identify priorities for management-oriented research about the living resources of Long Island Sound and their habitats.	R	CTDEP NYSDEC EPA EPA-LIS Office NMFS USFWS Academic Institutions		\$5,000 workshop	Partial Progress	A symposium on the health of LIS lobster was held in April 2000 in Stamford in response to the 1999 lobster die-off in Western LIS.	Complete a research and management plan.

KEY: 1) Type: Commitment, Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated
 Status for Ongoing Programs and ongoing CCMP Actions: Fully Met, Substantive Progress, Partial Progress, Discontinued

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- **During 1999, Connecticut acquired 2,910 acres for open space at a cost of nearly \$10.6 million, while assisting municipalities, land trusts, and water companies with the purchase of another 4,203 acres with \$10 million through the state DEP open space grant program.**
- **The Long Island Sound Watershed Alliance (LISWA) passed a Resolution at its April 1999 meeting supporting the creation of a Long Island Sound Reserve system, as called for in the CCMP.**

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- **The CAC sent a letter to the Policy Committee in June 1999 supporting the creation of a LIS reserve that would identify and protect open space and underwater habitats in the Sound. A coalition of interest groups is working to implement this CCMP action.**



Raising Public Awareness and Participation through Education and Outreach

A significant factor toward long-term CCMP effectiveness is the ability to increase the public's awareness of and participation in activities designed to protect the LIS. Educating LIS watershed residents and increasing the number of people that take an active interest in protecting and restoring the Sound helps to nurture long-term stewardship ideals in the local communities. As the LIS is restored to a more healthy ecosystem these ideals will help ensure its maintenance well into the future.

Strategy:

The CCMP public awareness and outreach strategy has six major elements: 1) increasing community awareness and stewardship; 2) promoting understanding; 3) facilitating public participation; 4) increasing communication and cooperation; 5) enhancing education at all levels; and 6) securing funding. The CCMP identifies 7 *Ongoing Programs* and 16 *CCMP Actions* to address these goals. Of the 16 *CCMP Actions*, 8 are reported as *Complete/Fully Met/Substantive Progress*; 5 are reported as *Partial Progress*; 2 are reported as *Not Initiated*; and 1 *Discontinued*.



Highlights:

- In 1999, the LISS outreach program responded to 582 information requests, developed and staffed displays at 9 public events that reached 10,420 people; and provided 21 presentations to combined audiences of 428.
- The LISS public education and outreach program developed and distributed quarterly LISS Newsletters covering timely LIS topics to over 4,000 addressees in 1999: 1) *Marine Fisheries*; 2) *Watershed Protection*; and 3) *Dredged Material Management*.
- CTDEP launched a new newsletter in 1999, *Sound Outlook*, which is supported by Coastal Zone Management Act and EPA LISS funds. The newsletter has a circulation of 2,300.
- LISS promotional and educational materials were displayed and handed out at the 1999 Earth Day celebrations in Connecticut and New York, the 1999 New Haven County Conservation Fair, and 1999 Norwalk Oyster Festival.
- The CTDEP License Plate Fund supports four categories of activities for outreach efforts, including public access, public education, habitat restoration, and research. In 1999, the Fund supported 21 projects totaling \$311,509. Since 1993 the Fund has provided over \$2.6 million for 161 projects.
- In 1999, the LISS World Wide Web page was the most popular site on the EPA Region I host server, with nearly 36,000 "hits." The LISS site includes LIS fact sheets, slide shows, newsletters, LIS links, and key federal and state LIS personnel contact information. The LISS web page address is: www.epa.gov/region01/eco/lis.
- NYSDEC, CTDEP, and EPA provided outreach on LIS programs to local governments and local officials through workshops, seminars, symposia, and conferences held in various locations throughout the LIS area during 1999.
- Through 1999, the LISS Small Grants Program has provided funds for 41 educational, informational and construction projects totaling \$131,952. These projects assisted hundreds of teachers and thousands of school children, and produced over 15,000 pieces of LIS literature. In 1999, the LISS provided funds totaling \$50,000 for 10 local community environmental projects in

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New York and Connecticut.

- The UCONN Cooperative Extension Service's Nonpoint Education for Municipal Officials (NEMO) project continued to present its four-part series on nonpoint source pollution prevention and the link between land use and water quality. NEMO conducted 33 workshops with more than 900 persons in attendance during 1999. Municipal representatives included

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town selectmen/women, planning and zoning boards, health departments, conservation and environment commissions, highways and parks and recreation departments. Since its inception in September 1997, the NEMO project has provided more than 50 workshops in New York and Connecticut LIS watershed communities.



SUMMARY OF MANAGEMENT ACTIONS: PUBLIC INVOLVEMENT AND EDUCATION

1. COMMUNITY AWARENESS AND STEWARDSHIP (CCMP TABLE 51, P.146)				
Ongoing Programs	Responsible Parties	Status ²	Description	Upcoming Action
<p>E1-1. The LISS and state public involvement and education programs are: developing printed and other educational materials for specific audiences; exhibiting LIS materials at regional and local fairs and events; encouraging education and information on the Sound for urban populations; promoting the importance of the Sound's resources to children in the region; and, using public educational material of non-profit organizations.</p>	<p>CTDEP NYSDEC NY Sea Grant EPA</p>	<p>Fully Met</p>	<p>The LISS Outreach Program responded to 582 information requests, developed and staffed displays at 9 public events that reached 10,420 people; and provided 21 presentations to combined audiences of 428.</p> <p>CTDEP launched a new newsletter in 1999 entitled <i>Sound Outlook</i>, which is supported by CZMA and EPA NEP funding. CTDEP continued to participate in and display LIS materials in local events, Earth Day, Coast Guard Day, Oyster Festivals, and school events. CTDEP has also targeted urban education on LIS using the LIS License Plate Fund. In 1999 CTDEP produced the following new publications: 1) CT Coastal Access Guide (a public access map); 2) Invasive Plant Alert! Water Chestnut (factsheet); 3) Monitoring Long Island Sound, Hypoxia 1999 (fact sheet); and 4) Sound Outlook (DEP newsletter, circulation of 2300).</p> <p>Other CTDEP programs support LIS topics and projects, including: 1) <i>River Rundown</i>, a quarterly newsletter with a circulation of approximately 550 and 2) <i>Connecticut Wildlife</i>, a bimonthly with a circulation of 6,400. Each publication produces extra copies for distribution at conservation fairs, Earth Day events, and other public events and activities.</p> <p>The Connecticut LIS License Plate Fund supports four categories of activities: public access, public education, habitat restoration, and research. Since 1993, the Fund has provided over \$2.6 million for 161 projects. In 1999 21 projects totaling \$311,509 were funded.</p>	<p>The NY Sea Grant Program will continue outreach programs and the Small Grants awards.</p> <p>CTDEP plans to continue Sound Outlook and public outreach activities through the LISS outreach program.</p>

KEY

1)Type: (C)ommitment, (R)ecommendation, (N)ew (A)ction

2) Status for ongoing programs and actions: Fully Met, Substantive Progress, Partial Progress, Discontinued

Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated

1. COMMUNITY AWARENESS AND STEWARDSHIP (CCMP TABLE 51, P.146)

Ongoing Programs	Responsible Parties	Status ²	Description	Upcoming Action
<p>E1-2. Support research conferences such as: the CTDEP conference to highlight its LIS Research Grant Program; the LIS Watershed Alliance Citizens' Summit annual conference on the Sound; and the bi-state LIS research conference sponsored by local universities, Sea Grant programs, and the states.</p>	<p>CTDEP NYSDEC LISWA EPA CAC Sea Grant Universities</p>	<p>Fully Met</p>	<p>The ongoing research conferences were successfully held including the Biennial bistate LIS Research Conference in November 1999, and the annual LISWA Conference in April 1999. The LIS Research Grant Conference was held January 1999 at Connecticut College and focused on tidal wetland restoration. Over 150 people attended this highly successful conference.</p> <p>In 1999 NY/CT LISS staff participated on the planning committee for the LIS 2000 Research Conference.</p>	<p>LIS Research Conference planned for November 2000.</p> <p>The CT/NY Sea Grant programs in cooperation with CTDEP/NYSDEC plan to host a LIS Lobster research conference in April 2000.</p> <p>LIS Watershed Association conference planned for April 2000.</p> <p>A LIS Educators Conference will be hld March 2000 in cooperation with the Maritime Aquarium and other LISS partners.</p>
<p>E1-3. Coastweeks, an annual three week celebration of marine and coastal environments is supported by both states.</p>	<p>CTDEP NYSDEC</p>	<p>Fully Met</p>	<p>The current focus of this program is the National Beach Cleanup Day, which is coordinated by CT Sea Grant in CT and the American Littoral Society in NY.</p>	<p>LIS Beach Clean-Up Day is planned for September 2000.</p>

KEY

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1. COMMUNITY AWARENESS AND STEWARDSHIP (CCMP TABLE 51, P.146)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
E1-4. Enhance the LISS and state public involvement and education programs to provide additional funding to build upon the current outreach and education activities with a new focus on interpretation and implementation of the management plan.	R	CTDEP NYSDEC EPA	Ongoing	\$200,000/yr	Substantive Progress	<p>This CCMP Implementation Tracking Report was updated in for 1999 and has been used to update the CAC on implementation status.</p> <p>In 1999, the LISS www site (www.epa.gov/region01/eco/lis), has been among the most visited of EPA Region I web server pages with over 35,000 hits in 1999, nearly 5,000 above 1998 and over 10,000 more hits than 1997. The web site includes fact sheets, slide shows, newsletters, LIS links and contact information.</p> <p>The LISS hired a communications coordinator in August 1999.</p> <p>NY Sea Grant hired a student intern in 1999 to assist with the LISS Small Grants program through new funding provided by NYSDEC.</p>	<p>Plans for promotional activities and updated fact sheets in celebration of the 15th anniversary of the LISS will be part of the outreach activities in 2000.</p> <p>CTDEP plans to unveil its <i>Hypoxia</i> page on the CTDEP webiste in 2000.</p>

KEY

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2. PROMOTING UNDERSTANDING (CCMP TABLE 52, P.147)				
Ongoing Program	Responsible Parties	Status ²	Description	Upcoming Action
E2-1. Incorporate LIS information into all related programs conducted by state staff wherever possible.	CTDEP NYSDEC	Substantive Progress	Both states have continued efforts to expand and incorporate LIS information and priorities into existing programs and to seek new opportunities for communicating LIS information. For example, CTDEP added LIS information to the Project Wet curriculum and coordinates teacher workshops and materials as part of the program. CTDEP also includes LIS information on its web site, and in publications.	Continue to add LIS information in the CTDEP web site. CTDEP will be putting together a series of events for LIS Day, May 26, 2000 to celebrate the 20 th anniversary of CT's Coastal Management Program and the 15 th anniversary of the LISS.

2. PROMOTING UNDERSTANDING (CCMP TABLE 52, P.147)							
CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
E2-2. Provide information to all municipalities on the LISS and the importance of protecting and restoring the Sound. Special attention will be given to coastal municipalities in the form of briefings by state officials to explain exactly how implementation of the plan will affect that particular city or town and how to work cooperatively together to implement the management plan. Briefings will also be held for specific user groups, local officials, and elected representatives.	C	CTDEP NYSDEC	Initiated upon signature of the plan by the state Governors and the EPA Administrator	Redirection of base program	Complete	NYSDEC, CTDEP, and EPA staff held a municipal conference for coastal NY/CT officials on CCMP implementation issues.	NB: OTHER ITEMS MOVED TO E2-3. The LISS will support a follow up conference for coastal municipalities in June 2000.

KEY

1)Type: (C)ommitment, (R)ecommendation, (N)ew (A)ction

2) Status for ongoing programs and actions: Fully Met, Substantive Progress, Partial Progress, Discontinued

Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated

2. PROMOTING UNDERSTANDING (CCMP TABLE 52, P.147)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
E2-3. Assess opportunities for training and educating the environmental decision-making community and provide technical information and assistance on implementation of the plan to the regulated community.	C	CTDEP NYSDEC	Ongoing	Redirection of base program	Substantive Progress	<p>CTDEP works regularly with the municipalities regarding nutrient removal at sewage treatment plants. CTDEP also provides technical outreach for a large range of nonpoint source matters through technical guidance and workshops. See also E2-2 for municipal workshops on Phase III.</p> <p>CTDEP held two operator denitrification training workshops in January and May 1999.</p> <p>In 1999 CTDEP continued to conduct workshops for local land use officials using the manual <i>Coastal Water Quality: A Guide for Local Officials</i>. CTDEP hired staff for four of five watershed coordinator positions to strengthen water quality management and outreach on a watershed basis. Norwalk, Quinnipiac, and other watershed projects continue.</p> <p>The LISS-supported UCONN Cooperative Extension-sponsored Nonpoint Education for Municipal Officials (NEMO) project continued to conduct a series of 4 presentations on nonpoint source reduction methodologies to local officials in Westchester and Fairfield counties on the effects of impervious surfaces; innovative land development techniques; conserving open space; and geographic information systems. In 1999, NEMO held meetings on Long Island to explore expansion of the program to Manhasset and Hempstead communities.</p>	<p>CTDEP anticipates sponsoring additional operator denitrification workshops in 2000.</p> <p>CTDEP will continue to provide §319 funding for NEMO workshops.</p> <p>CTDEP will continue watershed program development.</p>
E2-4. Utilize the Bi-state Marine Resources Committee to ensure Long Island Sound related legislation moves on a parallel track in both Connecticut and New York and to help educate local governments and the public about the importance of the Sound and the successful implementation of the LISS recommendations.	C	CTDEP NYSDEC NYSDOS	Ongoing	Redirection of base program	Partial Progress	<p>The Committee last met in January 1997. Legislation relating to the Menhaden fishery in LIS was passed in 1997. As a result of this meeting, both states passed legislation restricting commercial Menhaden harvesting in LIS for a two-year period. While the Committee did not meet in 1998 or 1999, CT passed Public Act 99-78 that extended the moratorium on the taking of menhaden to July 1, 2001.</p>	<p>The CT General Assembly is considering House Bill 5584 to make a ban on the taking of menhaden by any size boat and purse seine, permanent.</p>

KEY

1)Type: (C)ommitment, (R)ecommendation, (N)ew (A)ction

2) Status for ongoing programs and actions: Fully Met, Substantive Progress, Partial Progress, Discontinued

Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated

2. PROMOTING UNDERSTANDING (CCMP TABLE 52, P.147)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
E2-5. Pursue reestablishment of funding for the Long Island Sound Resource Center at Avery Point and further development of a similar resource center in New York to serve as clearinghouses and depositories for information about the Sound and investigate ways to improve funding for these centers.	R	CTDEP NYSDEC EPA	Ongoing	\$150,000 per year for Connecticut Long Island Sound Resource Center; \$60,000/ year for a New York facility	Partially Addressed	No new funding has been secured. The LIS Resource Center continues to operate with GIS and library functions.	

3. FACILITATING PUBLIC PARTICIPATION (CCMP TABLE 53, P.148)

Ongoing Program	Responsible Parties	Status ²	Description	Upcoming Action
E3-1. Encourage public participation in activities relating to the cleanup and protection of the Sound and provide support for activities including storm drain stenciling, beach grass planting, and beach cleanups.	CTDEP NYSDEC EPA Sea Grant	Substantive Progress	<p>This action is being met primarily through the Connecticut LIS License Plate Fund and the LISS Small Grants program (31 projects have been funded to date under the Small Grants Program). Also, state §319 funds are put into these activities. In Connecticut, §319 watershed projects in the Hockanum, Mattabasett, Norwalk, Quinnebaug, Quinnipiac, and West Rivers provide the following public participation activities: 1) volunteer monitoring, 2) streambank restoration/riparian plantings, 3) river clean up days, and 4) stream walk assessments. Staff give numerous presentations to the general public each year. For example, New York Sea Grant continues to provide information on storm drain stenciling. Eight different stencils are available depending on the water body being stenciled. Also, Sea Grant has created a Sound Gardening Demonstration Garden in Oyster Bay funded through §319 funds.</p> <p>The CT LIS License Plate Fund is funding water quality sampling projects to volunteers in three CT harbors.</p> <p>NY Sea Grant developed 3 planting guides – native grasses, smooth cordgrass and American beach grass.</p>	<p>LISS Small Grants funded 17 projects for FY2000.</p> <p>The Norwalk Maritime Aquarium is completing a video for students to increase environmental awareness of LIS.</p> <p>Public participation will also be sought in the development of a total maximum daily load (TMDL) for Sasco Creek watershed.</p>

KEY

1)Type: (C)ommitment, (R)ecommendation, (N)ew (A)ction

2) Status for ongoing programs and actions: Fully Met, Substantive Progress, Partial Progress, Discontinued

Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated

3. FACILITATING PUBLIC PARTICIPATION (CCMP TABLE 53, P.148)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
E3-2. The LISS Citizens Advisory Committee will continue to provide guidance to the Management and Policy Committee and serve as a link between the public and LISS management agencies. The CAC has been instrumental in providing guidance to the Study and serving as a conduit between the Management Conference and the public.	C	CAC	Immediately	Costs are \$4,000 per year for expenses and travel and would be covered under the basic cost of maintaining the Management Conference	Fully Met	<p>The CAC has expanded its membership to 60; has formed subcommittees to provide focused input on specific areas, and has continued to be very active in providing counsel to the Management Conference.</p> <p>The CAC provided its annual priorities to the Policy Committee by letter in June 1999; briefed the new Congress on LIS issues and accomplishments in October 1999; and provided its comments on the draft TMDL for the public record in November 1999.</p>	The CAC will meet quarterly in 2000 in March, June, September and December.
E3-3. Enhance funding for hands-on activities such as storm drain stenciling, beach grass planting and beach cleanups to allow the public to actively participate in the cleanup and restoration of the Sound and learn more about its ecosystem.	R	CTDEP NYSDEC EPA Sea Grant	When funding becomes available	\$25,000 per year	Fully Met	<p>CTDEP has funded storm drain stenciling activities with grants from the Long Island Sound License Plate Fund and through watershed projects funded by \$319 funds from the EPA.</p> <p>Save the Sound, Inc. manages storm drain stenciling in Connecticut.</p> <p>The LISS has funded the Small Grants program to support local implementation and education efforts. The Small Grants program funding was increased to \$50,000 in 1999. 10 projects were funded.</p> <p>CT DEP's Long Island Sound VISA card contributes funds to the LIS License Plate Fund. CT DEP continues a successful partnership with the LIS VISA card.</p>	Continue efforts to promote public awareness.
E3-4. Promote citizen involvement in educational and monitoring activities in and around the Sound and consider: -Providing technical assistance to citizen monitoring groups; -Developing a reward system for citizens participating in Long Island Sound protection and restoration programs; -Developing environmental habitat kits and guide maps; -Production and distribution of videos of Long Island Sound research cruises.	R	CTDEP NYSDEC EPA	When funding becomes available	\$75,000 per year	Substantive Progress	<p>CTDEP assists to the extent possible supporting citizens monitoring groups with technical staff for planning programs, grants to support efforts, and review of reports and data.</p> <p>CTDEP supports public involvement in the recently implemented Quinnipiac and Norwalk River Watershed programs.</p> <p>The LIS volunteer water monitoring workgroup assisted in coordinating citizen water quality monitoring around LIS.</p>	The CTDEP web site will provide information on LIS License Plate fund projects which may be used by other school groups for water quality monitoring, curricula, and other related projects.

KEY

1) Type: (C)ommitment, (R)ecommendation, (N)ew (A)ction

2) Status for ongoing programs and actions: Fully Met, Substantive Progress, Partial Progress, Discontinued

Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated

4. INCREASE COMMUNICATION AND COOPERATION (CCMP TABLE 54, P.150)							
CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
E4-1. Increase efforts to coordinate ongoing governmental and nongovernmental public outreach efforts as the plan becomes implemented and encourage private and nonprofit groups to continue to develop and implement Long Island Sound educational and outreach programs.	C	CTDEP NYSDEC EPA	Ongoing	Redirection of base program	Substantive Progress	LISS outreach staff in NY, CT and EPA LISO participate in LIS Educators Meetings organized by Save the Sound and held quarterly at various locations around the Sound.	LIS outreach staff in NY, CT and EPA will participate in planning organizing and conducting a LIS Educators Conference in March 2000.
E4-2. Establish a public outreach work group to guide the implementation of the public involvement and education commitments and recommendations. The work group will work closely with and serve to complement the ongoing public outreach and education efforts of the Citizens Advisory Committee. The group will also be charged with determining funding resources for implementation of public involvement and education recommendations, consulting with staff on tactics, working to provide coordination of public outreach efforts from both an internal and external basis, and assessing program effectiveness.	R	CAC CTDEP NYSDEC EPA	Upon signature of the plan by the state Governors and the EPA Administrator	Redirection of base program	Complete	The first meeting of the Public Outreach Work Group (POWG) was held in October 1994. The POWG has reviewed outreach materials, provided ideas for new material, and reviewed the proposals received in response to the LISS Small Grants program. POWG was merged with the CAC communications subcommittee in 1998. CAC By Laws were amended in 1999 to reflect this change.	See E3-2.

KEY

1) Type: (C)ommitment, (R)ecommendation, (N)ew (A)ction

2) Status for ongoing programs and actions: Fully Met, Substantive Progress, Partial Progress, Discontinued

Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated

5. ENHANCE EDUCATION AT ALL LEVELS (CCMP TABLE 55, P.151)				
Ongoing Programs	Responsible Parties	Status ²	Description	Upcoming Action
E5-1. Support ongoing actions that assist teachers in their efforts to integrate LIS issues into existing curricula.	CTDEP NYSDEC EPA Sea Grant	Substantive Progress	CTDEP continues to provide materials to teachers and schools upon request, see actions in this section. NY Sea Grant is a member of the Executive board for NYS Marine Educators and helps to distribute LIS materials and information to teachers. The NY Sea Grant hosted two grant writing workshops, one each in Connecticut and New York, for potential Small Grants applicants.	The Maritime Aquarium, NY/CT Sea Grants and EPA are cooperating on the LIS Educators Conference scheduled for March 2000 in Norwalk, CT.

5. ENHANCE EDUCATION AT ALL LEVELS (CCMP TABLE 55, P.151)							
CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
E5-2. Continue Connecticut's Long Island Sound High School Research Grant Program, initiated in 1990. This program provides funding for students to conduct research on the Sound and its watershed.	C	CTDEP	Ongoing	\$30,000 per year	Discontinued		
E5-3. Encourage natural history museums and nature centers to promote Long Island Sound issues within their programs.	C	CTDEP NYSDEC EPA	Ongoing	Redirection of base program	Partial Progress	CTDEP works with museums and at public affairs such as local fairs and festivals to promote sound environmental management. CTDEP funded a Long Island Sound traveling display through the CT Museum of Natural History, completed in 1999. CTDEP developed a nonpoint source exhibit with the CT Museum of Natural History in 1999.	
E5-4. Work with school districts and, where appropriate, the Department of Education, in Connecticut and New York to develop Long Island Sound educational materials and outreach programs for primary and secondary schools. Help teachers integrate Long Island Sound information into their curricula and provide materials wherever possible. This should include hiring a Long Island Sound education coordinator.	R	CTDEP NYSDEC	When funding becomes available	\$75,000 per year	Partial Progress	CTDEP's Project SEARCH and other Information and Education Section activities are aimed at educating educators and students about a broad range of environmental matters, including Long Island Sound.	

KEY

1)Type: (C)ommitment, (R)ecommendation, (N)ew (A)ction

2) Status for ongoing programs and actions: Fully Met, Substantive Progress, Partial Progress, Discontinued

Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated

5. ENHANCE EDUCATION AT ALL LEVELS (CCMP TABLE 55, P.151)							
CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
E5-5. Enhance ongoing actions to assist teachers in their efforts to integrate Long Island Sound issues into their existing curricula including the development and support of teacher workshops.	R	CTDEP NYSDEC EPA	When funding becomes available	\$75,000 per year	Partial Progress	CTDEP's Project SEARCH and other Information and Education Section activities are aimed at educating educators and students about a broad range of environmental matters, including Long Island Sound.	
E5-6. Consider a Long Island Sound High School Research Grant Program to provide resources to allow a variety of high schools to conduct research on the Sound and its watershed.	R	NYSDEC	When funding becomes available	\$30,000 per year	Not Initiated		

6. SECURE FUNDING (CCMP TABLE 56, P.152)				
Ongoing Program	Responsible Parties	Status ²	Description	Upcoming Action
E6-1. The LISS will continue to encourage all organizations involved in the public involvement and education effort, both governmental and nongovernmental, to take advantage of the various grant programs, for which they are eligible, that provide funding for educational activities. These include CT's LIS Fund, LIS High School Research Grant Program, and EPA's Education Grants. Private sector funding should also be sought when and where possible and other private grant programs identified.	CTDEP NYSDEC EPA Sea Grant Other Management Conference Participants	Substantive Progress	<p>Announcements for funding are widely circulated within the LIS community. Since its inception, the CTDEP LIS License Plate fund has allocated more than \$2.6 million to fund over 160 projects.</p> <p>Since the inception of the LIS Small Grants Program, the New York Sea Grant office of the LISS has provided grant funds for 41 projects totaling \$131,952. These projects assisted hundreds of teachers and thousands of school children, and produced over 15,000 pieces of LIS literature. In 1999, the LISS provided grant funds totaling \$50,000 for 10 local community environmental projects in Connecticut and New York</p>	CTDEP will mail the RFP for the next round of License Plate projects in early 2000. The information will also be available on the CTDEP web site.

KEY

1) Type: (C)ommitment, (R)ecommendation, (N)ew (A)ction

2) Status for ongoing programs and actions: Fully Met, Substantive Progress, Partial Progress, Discontinued

Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated

6. SECURE FUNDING (CCMP TABLE 56, P.152)

CCMP Action	Type ¹	Responsible Parties	When	Estimated Cost	Status ²	Description	Upcoming Action
<p>E6-2. Seek to create a public involvement and education (PIE) fund that could be supported by a variety of funding sources, including federal appropriations through the Long Island Sound Improvement Act. The PIE fund would be administered by the LISS Management Conference. A PIE fund and interest generated from its endowment would provide support for projects fulfilling plan involvement and education actions and recommendations as proposed by both nongovernmental and governmental organizations.</p> <p>Current state and private Long Island Sound public education programs are under-funded. State and private funding sources must be directed toward meeting the needs of existing programs before being sought for a PIE fund.</p>	R	CTDEP NYSDEC EPA	Upon signature of the plan by the state Governors and the EPA Administrator	Seed money should be made available for the establishment of a PIE Fund.	Not Initiated	A PIE fund has not been established. However, funding for existing outreach and education programs, such as the CTDEP License Plate Fund and the LISS Small Grants Program have continued.	

KEY

1)Type: (C)ommitment, (R)ecommendation, (N)ew (A)ction

2) Status for ongoing programs and actions: Fully Met, Substantive Progress, Partial Progress, Discontinued

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Glossary of Acronyms

A

ACOE Army Corps of Engineers

B

B Billion
BAT Best Available Technology
BMP(s) Best Management Practice(s)
BNR Biological Nutrient Reduction
BOD Biological Oxygen Demand

C

CAC Citizens Advisory Committee
CCMP Comprehensive Conservation and Management Plan
CD Compact Disc
CD-ROM Compact Disc - Read-Only Memory
CERCLA Comprehensive Environmental Response, Compensation and Liability Act (Superfund)
CES Cooperative Extension Service
CSO(s) Combined Sewer Overflow(s)
CT Connecticut
CTDEP Connecticut Department of Environmental Protection
CTDOA Connecticut Department of Agriculture
CTDOA/BA Connecticut Department of Agriculture Bureau of Aquaculture
CTDOHS Connecticut Department of Health Services
CTDOT Connecticut Department of Transportation
CVA Clean Vessel Act
CWA Clean Water Act
CZM Coastal Zone Management
CZMA Coastal Zone Management Act

D

DO Dissolved Oxygen (expressed in milligrams per liter mg/l)

E

EIS Environmental Impact Statement
EMPACT Environmental Monitoring for Public Access and Community Tracking (EPA)
EPF Environmental Protection Fund (New York State)

F

FY Fiscal Year
FFY Federal Fiscal Year

G

GIS Geographic Information System

H

HEP Harbor Estuary Program (New York/New Jersey)

Hg Mercury

I

ICM Integrated Crop Management

IPM Integrated Pest Management

ISC Interstate Sanitation Commission

ISTEA Intermodal Surface Transportation Efficiency Act

K

K thousand

k kilogram

km Kilometer

Km² Square kilometer

L

l liter

LA Load Allocation

lbs pounds

LIS Long Island Sound

LISO Long Island Sound Office (EPA)

LISS Long Island Sound Study

LISWA Long Island Sound Watershed Alliance

M

M Million

MC Management Committee

MEG Model Evaluation Group

mg milligrams

mgd million gallons per day

mg/l milligrams per liter

MPRSA Marine Protection, Research and Sanctuaries Act

MSD(s) Marine Sanitation Device(s)

MSRC Marine Science Research Center (SUNY)

N

N Nitrogen

NDD National Diversity Database

NDZ No Discharge Zone

NEIWPC Commission New England Interstate Water Pollution Control

NEMO Nonpoint Education for Municipal Officials

N (Cont'd)

NJDEP	New Jersey Department of Environmental Protection
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NO _x	Nitrous Oxide
NPDES	National Pollutant Discharge Elimination System
NPS	Nonpoint Source(s)
NRCS	Natural Resource Conservation Service
NRWI	Norwalk River Watershed Initiative
NY	New York
NYC	New York City
NYCDEP	New York City Department of Environmental Protection
NYDOT	New York Department of Transportation
NY/NJHEP	New York/New Jersey Harbor Estuary Program
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOS	New York State Department of State
NYSOPRHP	New York State Office of Parks, Recreation and Historic Preservation

O

ODA	Ocean Dumping Act
O&M	Operations and Maintenance
OLISP	Office of Long Island Sound Programs (State of Connecticut)

P

P.A.	Public Act
PCB(s)	Polychlorinated Biphenyl(s)
PIE	Public Information and Education
PS	Point Source

R

RFP(s)	Request for Proposal(s)
RNHT	Recreation and Natural Heritage Trust (State of Connecticut)

S

SAV	Submerged Aquatic Vegetation
SEP	State Environmental Protection (fund, CT)
SFY	State Fiscal Year
SIP	State Implementation Plan
sq. mi.	Square Miles
SUNY	State University of New York
SPDES	State Pollution Discharge Elimination System
SRF	State Revolving Fund

S (Cont'd)

STORET STORAge and RETrieval System (EPA Data System)
STP(s) Sewage Treatment Plant(s)
SWEM System-Wide Eutrophication Model

T

TAC Technical Advisory Committee
TMDL Total Maximum Daily Load

U

UConn University of Connecticut
USACE United States Army Corps of Engineers
USCG United States Coast Guard
USDA United States Department of Agriculture
USDOJ United States Department of Justice
USEPA United States Environmental Protection Agency
USFWS United States Fish and Wildlife Service
USGS United States Geological Survey

W

WAC(s) Watershed Advisory Committee(s)
WLA(s) Waste Load Allocation(s)
WMA Wildlife Management Area
WWW World Wide Web

To obtain copies of this report, contact:

EPA Long Island Sound Office
Stamford Government Center
888 Washington Boulevard
Stamford, CT 06904
203 977-1541
203 977-1546 fax

or go to the LISS website at:

<http://www.epa.gov/region01/eco/lis>

for an electronic version of the report.



LONG ISLAND SOUND STUDY