

2007

New Hampshire Estuaries Project



Year 12 Work Plan

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OVERVIEW

The New Hampshire Estuaries Project (NHEP) is part of the U.S. Environmental Protection Agency's National Estuary Program which is a joint local/state/federal program established under the Clean Water Act with the goal of protecting and enhancing nationally significant estuaries.

The NHEP's *Comprehensive Conservation and Management Plan* (Management Plan) for New Hampshire's estuaries was completed in 2000 and updated in 2005. The Management Plan outlines key issues related to management of New Hampshire's estuaries and proposes strategies (Action Plans) to protect, enhance, and monitor the state's estuarine resources. Local stakeholders established the NHEP's priorities, which include water quality improvements, shellfish resource enhancements, land protection, habitat restoration, and outreach and education. Projects addressing these priorities are undertaken throughout New Hampshire's 42 community coastal watershed. In addition, the NHEP developed and now implements a comprehensive monitoring program for the coastal watershed. The NHEP collects, compiles and analyzes data for a number of environmental indicators. The NHEP's communications plan outlines goals and strategies to shape the program's outreach and communications activities to better support Management Plan implementation.

Each year the NHEP prepares its work plan, which describes recent accomplishments and priority activities and projects to be undertaken in the next year to implement the Management Plan. The work plan is developed by the NHEP with input from NHEP's four project teams. The NHEP Management Committee reviews and approves the work plan each year. The current work plan represents the twelfth year of the NHEP's activities and involvement in collaboratively protecting, enhancing, and monitoring New Hampshire's estuaries.

Section 1 of this document is a report of the NHEP's activities for the past year. The section describes actions undertaken by the NHEP to implement goals and activities identified in work plans from the two previous years (Year Ten Work Plan: <http://www.nhep.unh.edu/resources/pdf/nhepyearten-nhep-05.pdf>; and Year Eleven Work Plan: http://www.nhep.unh.edu/resources/pdf/nhep_year_eleven-nhep-06.pdf); describes how the NHEP's activities helped support Clean Water Act programs; summarizes meetings and milestones from the last year; lists all ongoing projects supported by the NHEP; and reports on last year's travel expenses.

Section 2 of this document describes activities and priorities to be undertaken by the NHEP as part of the new EPA grant, beginning on October 1, 2007. It identifies the NHEP's implementation and program goals; describes specific activities to be undertaken by NHEP staff or partners with grant funds to implement the NHEP Management Plan and Monitoring Plan; describes the NHEP's administrative structure and costs; and presents the overall budget for the Year 12 grant.

SECTION 1: REPORT OF PAST YEAR'S ACTIVITIES

I. Accomplishments and Activities Initiated to Fulfill Goals from the NHEP's Year 10 & Year 11 Work Plans

This section describes activities and accomplishments of the New Hampshire Estuaries Project (NHEP) for the previous year, from July 2006 to June 2007.

The NHEP set the following implementation goals for 2006 and 2007 in the Year 10 and Year 11 Work Plans:

- **Continue implementation of the NH Estuaries Project Management Plan**
- **Continue implementation of the NHEP Monitoring Plan and ongoing environmental assessments**
- **Develop a long-term financing plan for the NHEP**
- **Conduct targeted outreach on the 2006 State of the Estuaries Report**
- **Prepare 2007 Progress Report**
- **Review options for incorporating the Maine portion of watershed into the NHEP focus area**

Progress toward each of these goals over the course of the year (July 2006-June 2007) is reported below.

>> GOAL: Continue implementation of the NH Estuaries Project Management Plan (Year 10 & Year 11 Work Plan Goal)

The NHEP successfully met this goal over the course of the year. In seven years of Management Plan implementation, the NHEP has initiated activities for all of its 45 highest priority action plans that are part of the Management Plan. Of these, 22 (~50 percent) have been completed or fully implemented, in the case of ongoing action plans. Of all the 99 action plans contained in the Management Plan, 35 percent are considered fully implemented.

Specific implementation activities that were initiated or conducted over the course of the year to meet the management plan implementation goal are listed below. Activities listed were conducted by the NHEP or by project partners with NHEP funding or input. Further details of all ongoing projects (as of June 30, 2007) are included in the table in Section IV. of the work plan.

Water Quality Projects

The following project activities were completed or supported by the NHEP:

- Funds were awarded to Durham, Exeter, and Rochester to support proposals received in response to the May 2006 RFP for community grants for storm sewer mapping, illicit discharge detection and elimination, and storm drain monitoring activities. These projects will be completed in 2007. Projects selected through the

2005 RFP process were completed by December 2006 (projects in Rye, Somersworth, Portsmouth, and Seabrook).

- The UNH Low Impact Development Project to demonstrate several storm water management practices at two sites on campus was completed in September 2006. Cisterns, drip infiltration systems, and a bioretention system were installed and monitored.
- The sewer extension project with the City of Portsmouth to service homes suspected of having failing or near failing septic systems and contributing to local water quality problems in Little Harbor continued. The design phase was completed in 2006 and the construction will be completed by June 30, 2007.
- The City of Portsmouth completed a feasibility study to reuse treated wastewater on the City-owned golf course at Pease Tradeport.
- Volunteer efforts to monitor water quality were strengthened with the NHEP providing monitoring equipment to four groups participating in the NHDES Volunteer Rivers Monitoring Assessment Program and to the Great Bay Coast Watch in 2007.
- The Piscataqua River Cooperative's efforts to minimize the impacts of oil pollution were strengthened with the NHEP providing oil absorbent materials for use by PRC members and the public to control oil resulting from spills.

Shellfish Projects

The following project activities were completed or supported by the NHEP:

- The University of New Hampshire (Ray Grizzle) completed a two-year study of reef structure alternatives for oyster restoration in Great Bay. The study found that early reef performance did not differ significantly for the "large" constructed reefs compared to "small" reefs in any of the three dependent variables measured four times over the 20-month duration of the experiment. Both types of constructed/restored reefs, however, differed significantly from both types of controls (exposed to harvest and unharvested) in oyster density and spat set, with mean densities of 3 to 6 times higher on the constructed reefs. A total of 1.25 acres of bottom area was considered "restored" oyster bottom at the completion of the project. Including direct and match costs for the present project, it was estimated that restoring 1 acre of oyster bottom using spat seeding would require about \$54,800. A recommended protocol for design of reef restoration projects that involve spat seeding was provided.
- The University of New Hampshire (Ray Grizzle) completed an oyster restoration project in the Bellamy River. The NHEP was one of several partners on this project with funding also coming from the City of Dover, The Nature Conservancy, the Natural Resource Conservation Service, and the Davis Foundation. A 1.5-acre area was considered "restored" in the short-term. Longer-term restoration success will depend on successful natural recruitment to the mini-reefs as well as the adjacent bottom areas. Some of the restored areas were affected by the extreme flooding in May 2006 and April 2007.
- The University of Maine at Machias (Brian Beal) completed a project to research clam restoration methods in Hampton-Seabrook Harbor. A series of field experiments were conducted at two intertidal sites in the Hampton-Seabrook

Estuary from 2004 through 2006 to assess the efficacy of enhancing intertidal areas with cultured clam (*Mya arenaria* L.) seed and predator deterrent netting. Results from the study, together with those from a previous, smaller-scale investigation in the same estuary (Beal, 2002) suggest that clam enhancement can be successful as long as netting is properly deployed and maintained through regular inspections. Because predation in the estuary is so intense and affects all but the largest sizes of clams, nets should be maintained in situ as long as possible, perhaps as long as it takes the shellfish to attain harvestable sizes.

- Rutgers University completed testing of 196 oysters from 9 beds for the diseases MSX and Dermo. Samples were collected in the fall of 2006 by the University of New Hampshire and the NH Fish and Game Department.
- The NHEP and NH Department of Environmental Services completed the annual monitoring of mussel tissue for toxic contaminants as part of the Gulfwatch Program. Collection of mussel samples occurred in October 2006. NHEP staff organized and participated in the field collection and laboratory preparation of samples. Contracts with laboratories to analyze the samples for organic compounds and metals were established.
- The NHEP encouraged public involvement in shellfish resource issues. The Shellfish and Living Resources Team met on December 19, 2006, which provided an opportunity for input on the NHDES Shellfish Program priorities for 2007.
- The NHDES Shellfish Program implemented its program consistent with NSSP guidelines in 2006 and 2007. The program benefited from the NHEP-led efforts to secure non-federal funding (\$175,000 of state general funds per year) beginning in state fiscal year 2007.

Land Use/Habitat Protection Projects

The following project activities were completed or supported by the NHEP:

- Support for the Natural Resource Outreach Coalition (NROC) program continued in 2006 and 2007, including community implementation projects and NHEP staff participation in NROC planning meetings and community outreach. NHEP staff worked with the towns of Rollinsford and Hampton. NROC formed two new committees to further the mission of the group: a funding sub-committee and marketing sub-committee. NHEP staff participates in the marketing sub-committee.
- NROC community implementation projects were completed by the towns of Wakefield and Deerfield in 2007 with funding from the NHEP.
- The Community Technical Assistance Program continued in 2006 and 2007. The following communities submitted applications since July 1, 2006 and received technical assistance through the program through Round 1 of the program:
 - Kingston – Review and development of stormwater management regulations and wetlands conservation district ordinance
 - New Durham – Development of a buffer ordinance
 - Fremont – Prime wetlands designation

- North Hampton – Development of monitoring plans for town held easements
- Brentwood – Development of monitoring plans for town held easements
- Newmarket – Development of an open space plan
- Northwood – Development of stormwater regulations
- Durham – Review/development of stormwater regulations and an impervious surface build-out

In total, eleven towns participated in Round 1 of the program. The NHEP reissued the CTAP request for applications for Round 2 of the program and is accepting applications through September 2007.

- The buffer education presentation was given to the following communities and watershed groups: Cocheco River Watershed Association at a regular meeting and during their annual canoe trip, Exeter River Local Advisory Committee, Town of Exeter Conservation Commission, Town of New Durham Planning Board Public Meeting, Town of Chester Conservation Commission Public Meeting, Town of Newington Conservation Commission, and Kensington Conservation Commission and Planning Board. The NHEP developed a buffer informational webpage as an additional education tool. The webpage includes information about buffers, NHEP assistance to towns, and links to other resources.
- UNH Complex Systems Research Center developed a Buffer Data Mapper as part of the NH GRANIT system. The buffer mapper displays maps of the shoreline buffers in increments of 50' starting at 50' up to 300'. The buffers are available as an overlay to any of the standard base features in GRANIT.
- The Center for Land Conservation Assistance continued to administer the Coastal Watershed Land Protection Transaction Fund to reimburse municipalities and conservation organizations for 50 percent (up to \$3,000) of the transaction costs associated with land protection projects (e.g., survey, deed research, legal fees, etc.) in the coastal watershed. Projects completed between May 2005 and April 2007 are eligible for funding. To date, ten applications were received and approved for funding, preserving 847 acres.
- As a follow up to the development of the Buffer Data Mapper on NH GRANIT, Strafford Regional Planning Commission and Rockingham Planning Commission are assisting towns with buffer protection efforts. Strafford Regional Planning Commission is working with two communities on buffer protection efforts: Somersworth on a buffer ordinance and Wakefield on buffer restoration and education. Rockingham Planning Commission is working with Brentwood on a buffer ordinance and a public education campaign.
- Southern New Hampshire Planning Commission worked with the towns of Candia and Deerfield to develop and implement land use regulations to protect the remaining undisturbed natural shoreline buffers along the Lamprey and North Branch Rivers (2nd order or higher streams and tributaries) and other surface waters within these communities. The ordinances developed during this project are slated to be on the town meeting warrant for both Candia and Deerfield in March 2008.
- The Nature Conservancy, Society for the Protection of New Hampshire Forests, Rockingham Planning Commission and Strafford Regional Planning Commission

conducted various outreach activities to promote implementation of the Land Conservation Plan for New Hampshire's Coastal Watersheds. Seven field trips and two workshops were conducted to reach target audiences, a poster describing the Plan was developed, additional copies of the Plan distributed to town boards, and town-scale maps were provided to all conservation commissions. The planning commissions worked with the towns of Lee, New Durham, East Kingston, and Hampton Falls to review and implement various strategies from the Plan.

Habitat Restoration Projects

The following project activities were completed or supported by the NHEP:

- The Nature Conservancy, with funding support from the NHEP and NH Coastal Program, completed the Great Bay Estuarine Restoration Compendium (GBERC). GBERC integrated existing data showing the historical and present day distributions for multiple species and habitats with new data and output from restoration site selection models. Restoration targets included oyster reefs, salt marshes, eelgrass, and diadromous fish. This detailed estuarine restoration opportunity assessment provided coastal managers and communities with maps showing restoration landscapes appropriate for integrated estuarine restoration projects.
- The NH Fish and Game Department plans for repairs to the fishways on tidal dams on the Lamprey, Cocheco, Oyster, and Exeter rivers were stalled in FY07. NHF&G was unable to execute a Memorandum of Agreement between NHF&G, the City of Dover and the NHDES Dam Bureau for the Cocheco River restoration work. The NHEP extended the deadline for use of NHEP funds until 12/31/07 to give NHF&G time to execute the MOA and complete the restoration work in 2007.
- The NHEP provided partial funding to the NH Department of Transportation for the ongoing feasibility study for dam removal or restoration on the Taylor River in Hampton/Hampton Falls. Additional funding for the project was secured from the Gulf of Maine Council. NHEP staff coordinated with the NHDES to conduct water quality sampling in the impoundment in August 2006. The NHEP continues to serve on an advisory committee for the project.
- The NHEP Coastal Scientist participated in meetings for the State Aquatic Nuisance Species (ANS) Management Plan on 7/27/06 and 10/2/06. The master list of estuarine ANS for NH was cross checked against lists from MIT SeaGrant, the Gulf of Maine Census of Marine Life, and Dr. Jim Carleton. The DES Exotic Species Coordinator plans to complete a draft of the report by June 30, 2007 to distribute for review. The final plan will be submitted to the NEANS task force in November 2007.
- The Rockingham County Conservation District, in coordination with the New Hampshire Coastal Program, U.S. Fish and Wildlife Service, the USDA Natural Resources Conservation Service, NHEP, and New Hampshire Audubon, managed projects to control targeted invasive species. A subcommittee was formed to establish a Cooperative Weed Management Area, tentatively called the NH Coastal Watershed Invasive Plant Partnership (NH CWIPP) that focuses on

New Hampshire coastal watershed. The Town of Rye *Phragmites* cutting project was completed at four sites. Use of chemical treatment is still under consideration. Other projects under development are several Wildlife Habitat Incentive Program (WHIP) projects in Hampton, Dover and New Castle. Efforts to restore habitat at Odiorne State Park are progressing.

- The NHEP, in collaboration with the New Hampshire Coastal Program (NHCP), issued a Request for Proposals for habitat restoration projects on August 1, 2006. The RFP sought projects that would result in the completion of on-the-ground habitat restoration for multiple estuarine species in the tidal waters of New Hampshire. A total of \$120,000 of funding was available, half from the NHEP and half from the NHCP. The NHEP and NHCP organized a workshop on August 11, 2006, to advertise the RFP and to introduce partners to the Great Bay Estuarine Restoration Compendium. Several organizations submitted pre-proposals; however, the NHEP only received one full proposal. The full proposal was from Ray Grizzle at UNH for an oyster restoration project which would also study macroalgae, benthic organisms and fish in the vicinity of the oyster reef. The proposal was modified in response to comments from the review committee. The project began on March 1, 2007.

Education/Outreach Projects and Activities

The following project activities were completed or supported by the NHEP:

Local Grants Program in 2007 – An RFP was issued on July 17, 2006 and eight proposals were received by October 17, 2006. A review team of five Management Committee members and NHEP staff reviewed and ranked the proposals received. The top five ranked proposals were recommended for full funding. The proposal ranked sixth was recommended for partial funding and the remaining two proposals were not recommended for funding. The approved projects were funded at a total cost of \$44,700. The Local Grants Program relates to Action Plan EDU-03, which funds activities that support Management Plan implementation. Grants were awarded to the support the following projects in 2007:

- *Identification and Mapping of Prime Wetlands in Brentwood* – The Town of Brentwood will complete a Prime Wetlands Designation project that will inventory, evaluate, and prioritize the town's wetlands.
- *Lamprey River Watershed Water Quality Monitoring Kit for Volunteer Monitors* – The Town of Nottingham will purchase water quality monitoring equipment and use it to monitor at least four stations for the New Hampshire Volunteer River Assessment Program.
- *Strengthening Community Land Conservation Efforts in the Coastal Watershed* – The Southeast Land Trust of New Hampshire will collaborate with the Lamprey River Advisory Committee and the Town of Brentwood to contact landowners, initiate and complete acquisition of conservation easements, and apply for conservation grants.
- *Monitoring the Seasonal and Long-term Impacts of Invasive Species in Great Bay* – Dr. Larry Harris (UNH) and his graduate students will conduct a three-part marine invasive species project. They will examine the effects of salinity on

seven invasive species; continue seasonal monitoring of exotic species in Great Bay; and examine the effects of eight predators on invasive species.

- *Outreach and Education Initiative for Community Leaders and Landowners* – Moose Mountains Regional Greenways will conduct five workshops with land use board members to help interpret The Land Conservation Plan for New Hampshire's Coastal Watersheds and develop/enhance local conservation plans. Other outreach activities include field trips, presentations at seven annual Lakes Association meetings, and production of six conservation education displays.
- *Natural Resources Inventory and Natural Resources Chapter of the City Master Plan* – The City of Rochester will conduct a natural resources inventory and use this data to create the first natural resources chapter of the City's master plan.

VIP Boat Tours – Two tours of the Great Bay estuary aboard the UNH Gulf Challenger were offered to coastal watershed planning board and conservation commission members and guests. On September 20, 2006, the 3-hour tour included 33 participants, with 12 communities represented. Presenters included Dr. Ray Grizzle of UNH Jackson Estuarine Laboratory discussing oyster restoration, Pam Hunt from NH Audubon speaking about the designation of Great Bay as an Important Bird Area, Theresa Walker of the Rockingham Planning Commission discussing the Land Conservation Plan for New Hampshire's Coastal Watersheds, Jamie Houle from the UNH Stormwater Center explaining a NHEP-funded stormwater treatment device installed at the Jackson Estuarine Laboratory parking lot, and Dave Kellam speaking about the NHEP 2006 State of the Estuaries Report. On September 30, 2006 (National Estuaries Day), the tour included 26 participants, with 10 communities represented. Presenters included Dr. Fay Rubin of UNH Complex Systems Research Center discussing the recently completed Buffer Characterization Study of the coastal watershed, Steve Miller of Great Bay National Estuarine Research Reserve (GBNERR) speaking about the resources available to communities through the GBNERR Coastal Training Program, Beth Lambert of the NH Coastal Program discussing Habitat Restoration Grants available through a cooperative arrangement between NHEP and the NH Coastal Program, and Phil Trowbridge speaking about the NHEP monitoring program and the 2006 State of the Estuaries Report.

Newspaper Column: Eye on Estuaries Series – The NHEP, with input from the Public Outreach and Education Team (POET), continued to implement Action Plan EDU-2 and attempted to publish a monthly article on natural resource issues in the seacoast area. Nine articles ran in this series in the past year. The subjects of the articles were salt marsh restoration (NH Coastal Program, July), invasive species monitoring (NH Sea Grant, July), bluefish (NHEP, August), land protection (SPNHF, November), clam populations (NHEP, December), prime wetlands (Newfields Conservation Commission, February), smelt (TNC, March), ice rafting (NHEP, April), and buffer ordinances (NHEP, June).

2006 State of the Estuaries Report, Conference and Supplemental Materials – The State of the Estuaries Report is a review of 12 key indicators from the four environmental indicator reports developed by NHEP Coastal Scientist with input from

the NHEP Technical Advisory Committee. The NHEP printed 2,000 copies of the report. The report was similar to the 2003 format; however, based on focus group data, the 2006 version included a full-page coastal watershed map, simplified report card of indicators, and additional report content discussing indicator relevance and supporting data. To complement the report, the NHEP developed supplemental town-specific bookmarks that included town-by-town data for several of the indicators plus information on resources to assist communities with natural resources protection.

The State of the Estuaries Conference was held on 10/27/2006, at the Sheraton Harborside in Portsmouth and was attended by 185 participants who saw 20 presentations that addressed a variety of topics related to New Hampshire's estuaries, including shellfish restoration, stormwater management, water resources sustainability, and marine invasive species, among others. The NHEP Coastal Scientist presented an overview of the State of the Estuaries Report to all attendees. Conference proceedings, including copies of all presentations, the State of the Estuaries Report, and NHEP Indicator Reports, were developed by the NHEP and sent to all conference attendees. A press release regarding the State of the Estuaries Report and Conference was sent to Seacoast Media Group, The Wire, and Foster's Daily Democrat. Stories on the report or conference ran in each of these papers. Additional presentations on the State of the Estuaries Report were made to business, watershed, and community groups.

In February 2007, the report and supplemental, community-specific bookmarks were sent to every planning board and conservation commission member in the 42 communities of the coastal watershed. All copies were bundled and sent to the chairs of the board or commission for distribution. Specific town data on population growth, impervious surfaces, sprawling development rates, and key areas to target for conservation were included in the bookmarks. Feedback on the bookmark format was very positive. Copies of the report were sent to all coastal watershed State Representatives and all State Senators. In February 2007, libraries servicing the 42 coastal watershed communities were mailed 1 report copy and several copies of their appropriate supplemental bookmarks. Other organizations receiving large quantities of the reports were Great Bay NERRS, NHDES, UNH Docent Program and Strafford County Conservation District. In total 970 reports have been mailed. A .pdf copy of the report is posted online.

Action Plan WQ-6 (promote collaboration between municipal and state officials to locate and eliminate illegal discharges into surface waters) – The NHEP implemented a campaign that utilized the “Be Part of the Solution” brand and included a water conditions identification guide (36 pages, 1,000 copies), a large poster (1,000 copies) and bookmarks (1,000 copies). Materials were distributed to municipal staff (public works, building code inspectors, health officials, etc.), watershed monitoring groups, conservation commissions, and town libraries.

Action Plan LND-33 (promote protection of contiguous land blocks) – The Coastal Watershed Land Conservation Plan (developed by The Nature Conservancy and project partners with partial funding from the NHEP) promoted the protection of contiguous

undeveloped lands and large forest habitats. The Conservation Plan included maps, prioritized conservation sites, and planning strategies (model ordinances, zoning recommendations, etc.) and presentations to communities on how to use the information and strategies included in the plan were conducted by the planning commissions and other partners. Also Moose Mountains Regional Greenways was awarded a grant funds through the Local Grants Program to promote the plan in their communities.

Website – Regular website updates were made by NHEP staff and the site continues to be a significant clearinghouse for NHEP program information and final project reports.

Press Releases – The NHEP produced four press releases and required grantees to create and send at least one press release that highlighted their NHEP funded project activities. From July 2006 to May 2007, 12 stories ran in either the Seacoast Newspapers or Foster’s Daily Democrat that referenced the NHEP.

Monitoring Projects

The following project activities were completed or supported by the NHEP:

- Core monitoring projects were continued for the period. The NHEP’s core monitoring projects are: water quality sampling in tidal tributaries to Great Bay, toxic contaminant testing for blue mussel tissue, oyster disease surveys, datasonde deployments in Great Bay, eelgrass mapping, and testing for nutrients and light attenuation in Great Bay.
- The NHEP also completed one supplemental monitoring project in late 2006 that involved additional testing for MSX and Dermo at two major, two experimental, and two low-salinity oyster beds in Great Bay.
- Throughout the year, the NHEP Coastal Scientist continued to manage the Quality Assurance Project Plan (QAPP) development and approval process for all relevant NHEP projects. One QAPP for an upcoming oyster restoration project at Nannie Island was completed during the year. In general, fewer QAPPs are needed now that the components of the NHEP monitoring plan all have the necessary documentation.

>> GOAL: Continue implementation of the Monitoring Plan and ongoing environmental assessments (Year 10 & Year 11 Work Plan Goal)

The NHEP achieved this goal by implementing its monitoring programs and producing the second State of the Estuaries report. This report was released at a conference on October 27, 2006.

The NHEP Technical Advisory Committee (TAC) continued to play an integral role in the development and implementation of the Monitoring Plan. The TAC assists with analyzing and interpreting monitoring data, formulating recommendations for management strategies, evaluating and revising the Monitoring Plan and goals, and

identifying data gaps and research needs. The TAC met two times between July 1, 2006 and June 30, 2007 (9/27/06, 2/20/06), and provided valuable input on the monitoring program work products.

The NHEP TAC was designated as the forum for discussions about development of nutrient criteria for NH's estuarine waters. The TAC meeting on February 20, 2006 addressed this issue. Materials on this subject are available at:

<http://www.nhep.unh.edu/programs/nutrient.htm>.

In September 2006, the NHEP Coastal Scientist and the TAC prepared a work plan for NHEP monitoring funds for 2007. The work plan was approved by the Management Committee. The work plan included continued funding for the annual NHEP monitoring programs. In May 2007 the TAC reviewed and approved the monitoring work plan for 2008, which includes the annual monitoring programs as well as several special monitoring projects that will yield data for the next State of the Estuaries Report.

The NHEP Coastal Scientist completed a quality assurance audit of the NHEP Monitoring Program on February 2, 2007. The goal of the audit was to verify that the systems for data collection, verification, and management were adequate to obtain data of sufficient quality for NHEP environmental indicators.

During the spring of 2007, the NHEP Coastal Scientist organized estuarine water and sediment quality data and imported them to the NHDES Environmental Measurement Database (EMD). Data from the Great Bay National Estuarine Research Reserve, UNH, and the National Coastal Assessment were all successfully imported. The EMD is the central repository for water quality data used in the State of the Estuaries Report and the 2006 Section 305(B) Surface Water Quality Reports. The EMD is accessible by the public through the internet. Moreover, data from the EMD is uploaded to EPA's national water quality data repository, STORET.

Finally, an update to the NHEP's Monitoring Plan is underway and will be completed later this year.

>> GOAL: Develop a long-term financing plan for the NHEP (Year 10 Work Plan Goal)

The NHEP achieved this goal over the course of the year. The NHEP received a \$10,000 grant from EPA to develop a fundraising plan for the program. The NHEP worked closely with a consultant to develop a fund development plan. The consultant first completed a detailed assessment of the NHEP and its fundraising potential as well as its strengths and challenges. The assessment included a number of interviews of NHEP staff, Management Committee members and individuals from the giving community. After the assessment phase, the consultant worked with NHEP staff to develop a fund development plan. The plan emphasizes working with foundations, developing collaborative proposals and approaches to fundraising with partner

organizations, and collaborative grant-making. The challenge now is to implement the plan and secure additional funding for the NHEP.

The NHEP worked with seacoast legislators to initiate an appropriations bill to provide funding for the NHEP. If passed and incorporated into the budget, the bill would have provided \$250,000 per year to support CCMP implementation, including community assistance programs and monitoring programs. The funding approach is similar to NHEP-led efforts the previous year to secure funding for the NHDES Shellfish Program to implement several high priority actions in the Management Plan. Despite broad legislative support from the House and Senate policy committees that voted unanimously to support the bill, the finance committees eliminated funding for the NHEP, since it was not included in the state budget and there were no additional funds to allocate.

>> GOAL: Conduct targeted outreach on the 2006 State of the Estuaries Report (Year 11 Work Plan Goal)

Following release of the 2006 State of the Estuaries Report and the presentation of the report at the State of the Estuaries Conference on October 27, 2006, the NHEP conducted additional outreach to provide data to decision-makers, community groups, and others interested in estuary protection and management.

Additional presentations on the State of the Estuaries Report were made by the NHEP Coastal Scientist to a number of business, watershed, and community groups including the Exeter Historical Society, the NH Business and Industry Association, Exeter River Local Advisory Committee, Strafford Regional Planning Commission, DES Watershed Bureau, and the NH Water Council.

The NHEP developed bookmarks to accompany the report that were customized with town information on impervious surfaces, population, imperviousness per capita, and important conservation lands identified in the Land Conservation Plan for NH's Coastal Watersheds. The bookmarks were distributed along with copies of the report to each town planning board chair and conservation commission chair. Multiple copies of the report and bookmark were sent so that every board member would have their own copy. Bookmarks and reports were also sent to every library in the coastal watershed.

In addition, copies of the report were sent to all coastal watershed State Representatives and all State Senators. Other organizations receiving large quantities of the reports were Great Bay NERRS, NHDES, UNH Docent Program and Strafford County Conservation District. In total about 1,000 reports were mailed out. A .pdf copy of the report is posted on line and is included in the CD-ROM of "State of Estuaries Conference Proceedings."

The NHEP updated impervious surface maps for each of the 42 towns in the coastal watershed. The maps show the distribution of impervious surfaces in 1990, 2000 and

2005, as well as the conservation focus areas from Coastal Watershed Land Conservation Plan. The maps were mailed to planning board chairs and conservation commission chairs in each of the 42 towns. A list of NHEP resources intended to assist town boards with resource protection accompanied the maps.

>> GOAL: Prepare 2007 Progress Report (Year 11 Work Plan Goal)

Progress on this goal is underway. The 2007 Progress Report is scheduled to be completed by October 1, 2007. Staff assessed progress on each action plan and assigned completion ratings based on work done to date by the NHEP and partner organizations. The NHEP received input from each of the project teams on the ratings and, based on feedback, is revising the ratings. A draft Progress Report will be issued in mid-summer for external review by the NHEP Management Committee, stakeholders, and others that are interested.

>> GOAL: Review options for incorporating the Maine portion of watershed into the NHEP focus area (Year 11 Work Plan Goal)

Progress on this goal is underway. In January 2007, the NHEP formed a subcommittee comprised of NHEP Management Committee members and NHEP staff to provide guidance to the review process. The subcommittee will develop a short report and recommendations that will be presented to the full Management Committee in December 2007. NHEP staff met with representatives from the Southern Maine Planning Commission, Wells National Estuarine Research Reserve, and the Maine Department of Environmental Protection to discuss possibilities of expanding the NHEP focus area to Maine communities that are part of the Salmon Falls and Piscataqua River Watershed. Additional meetings with other Maine organizations/agencies are planned for later in the year. NHEP staff are evaluating how the NHEP Monitoring Program and existing programs would be impacted by expanding the project area, as well as the relevance of CCMP action plans to the Maine part of the watershed.

II. Progress in Implementing EPA's Priority Clean Water Act Programs

The NHEP's Management Plan includes many Action Plans relevant to EPA's core Clean Water Act (CWA) programs. Using the Management Plan as a guide, the NHEP has undertaken many on-the-ground projects and initiatives to help implement CWA programs in New Hampshire's coastal watershed. Three CWA programs, in particular, that benefit from the NHEP's work are stormwater, monitoring, and wetlands programs. Activities undertaken by the NHEP to implement the Management Plan over the last year that address these programs are described below.

Stormwater

The NHEP Management Plan includes seventeen Action Plans that relate to stormwater management issues. Approximately half of the 42 communities in the NHEP area are subject to Phase II Stormwater Program requirements, so the NHEP's assistance to communities in implementing the Management Plan also assists them with Phase II compliance. The NHEP provides grant funds to municipalities to implement projects to map stormwater systems and detect and remediate illicit discharges to stormwater systems. The NH Department of Environmental Services (NHDES) manages the grant program for the NHEP and also provides technical support to municipalities in developing projects. Participating communities must provide 50% of the overall project costs. Over the last year, five community projects from the 2005 grant program were completed, and communities began three new projects as part of the 2006 grant program. The NHEP grant funds have assisted communities with implementing stormwater management plans, resulting in more aggressive schedules and more ambitious projects than would have occurred otherwise. The NHEP mapping grants have more rigorous requirements than the minimum Phase II requirements. The illicit discharge detection and elimination grants provided by the NHEP ensure that communities identify suspected pollution sources and remove illicit connections when identified. The program was not continued in 2007 because of limited funding.

The NHEP also is providing training opportunities and technical assistance to help communities with other aspects of stormwater management. UNH houses the Stormwater Center, a field testing facility that demonstrates the effectiveness of over a dozen stormwater management systems and best management practices. Periodically workshops are offered by the Stormwater Center, where participants can view the facility and discuss the effectiveness of each system based on monitoring data collected for each rain event. The NHEP promoted the workshops to communities (planning boards, conservation commissions, and public works departments) and covered the costs for them to participate in the workshops in 2006 and 2007. In addition, the NHEP in partnership with NHDES is funding a series of training programs in 2007 to assist municipal employees in removing illicit discharges and minimizing stormwater pollution from municipal operations. Two illicit discharge detection and elimination trainings were held with over 50 DPW staff attending the training. Eight good housekeeping/pollution prevention workshops will be held this year.

The NHEP Community Technical Assistance Program (CTAP) offers free consulting

assistance to communities on a number of stormwater management topics, including development of town regulations and ordinances to limit stormwater runoff, training on stormwater management designs and calculations, development of community outreach programs on stormwater, and production of community build-out scenarios. Three community stormwater projects were conducted through CTAP:

- Durham: stormwater ordinance development and impervious surface build-out
- Northwood: stormwater ordinance development
- Kingston: stormwater management regulations

Finally, the NHEP produced town-by-town impervious surface maps that displayed impervious surface cover in 1990, 2000, and 2005, along with roads, water resources, and conservation lands. Maps with accompanying impervious surface statistics were mailed to conservation commissions and planning boards in all 42 towns.

Monitoring

Each year, the NHEP funds a variety of monitoring programs. The programs provide information on water quality, shellfish resources, aquatic habitat, and land use in the coastal watershed. The NHEP monitoring programs were developed to complement existing monitoring programs of other agencies and fill critical data gaps. The major monitoring programs that were supported this past year by the NHEP are:

- Tributary monitoring – monthly monitoring of water quality at the nine major tributaries to Great Bay and Little Harbor (conducted by NHDES)
- Eelgrass mapping – annual aerial surveys and mapping of the eelgrass distribution in the Great Bay estuary (conducted by UNH)
- Gulfwatch – annual monitoring of toxic contaminants in shellfish tissue (conducted by NHDES and UNH)
- Datasonde program – support for the maintenance and deployment of datasondes with in-situ dissolved oxygen probes to monitor daily trends in dissolved oxygen at key locations in the estuary (conducted by UNH)
- Oyster disease monitoring – annual monitoring of the prevalence of oyster diseases at the major oyster beds (conducted by NH Fish and Game, UNH, and Rutgers University)
- Nutrient monitoring – testing for particulate nitrogen and phosphorus species to complement the dissolved nitrogen and phosphorus monitoring conducted by other programs (conducted by UNH)

In addition to the data collection, the NHEP Monitoring Program also contains a rigorous data analysis component. Data from the NHEP programs and data from other agencies are combined to calculate a suite of environmental indicators. The indicators are used to inform the NHEP Management Committee of the status and trends of environmental conditions in the estuary. The indicators are also used for the triennial State of the Estuaries Report, which is the NHEP's main outreach vehicle on environmental progress.

The NHEP Monitoring Program supports Clean Water Act core programs in many ways. First, the water quality data are imported to the NHDES Environmental Monitoring

Database and used in Section 305(b)/303(d) assessments. The 305(b)/303(d) assessment process is the heart of the Clean Water Act. Second, one of the NHEP indicators tests for trends at tidal bathing beaches. The results from this indicator assist the NHDES Beach Program with management decisions. Third, the data collection and data analysis conducted by the NHEP are used by the NHDES Oil Spill Response Program for contingency planning and, in the event of a spill, establishing baseline conditions. Fourth, the NHEP data have been used in two TMDLs (Hampton Harbor TMDL, Little Harbor TMDL). A third estuarine TMDL (the Squamscott River TMDL) is planned. And, fifth, the NHEP has taken the lead role for establishing nutrient criteria for NH's estuaries. The recommendations from the NHEP will lead to the development of new water quality standards for the state's estuaries. The NHEP applied for and was awarded an EPA grant to collect data and conduct analyses that will assist the nutrient criteria development process.

Wetlands

Twenty-three Action Plans from the NHEP Management Plan directly address wetlands and/or buffer protections at the community level. The NHEP has undertaken many activities to address these Action Plans. In New Hampshire, communities can provide greater protection to important wetlands by designating them as Prime Wetlands. The Prime Wetlands Designation process was developed by the State, and it includes a comprehensive inventory and functional evaluation of towns' wetlands, public input, approval at town meeting, and approval by the state. Over the last year, the NHEP has supported ongoing projects related to prime wetlands designation in four communities (Portsmouth, Fremont, Brentwood, and Newfields). For each, the NHEP provided funding for certified wetlands scientists to inventory towns' wetlands and evaluate them for 14 different wetland functions.

The NHEP provides technical assistance to communities on buffer protection projects, including wetland buffers. The NHEP Community Technical Assistance Project offers free consulting assistance to communities on a number of wetlands buffers projects, including development or amendment of buffer protection ordinances or subdivision and site plan regulations to improve buffer protections, prime wetlands designation, and development of town outreach programs on buffer maintenance and protection. The Town of Kingston utilized CTAP to develop a wetlands conservation district ordinance. In addition, the NHEP continued its buffer outreach program to assist communities. Eight buffer presentations were made to town boards and watershed organizations.

III. Summary of Meetings, Milestones, and Events

July 2006-June 2007	<ul style="list-style-type: none"> • Estuaries Update emailed monthly • Six presentations to community and business groups on the 2006 State of the Estuaries Report • Eight presentations by NHEP staff on buffer protections to community boards and watershed groups • NHEP's Eye on Estuaries newspaper column runs nine times
July 2006	<ul style="list-style-type: none"> • NHEP Public Outreach and Education Team Meeting • Governmental Performance and Results Act (GPRA) reporting to EPA completed • Local Grants Request for Proposals issued
August 2006	<ul style="list-style-type: none"> • Request for proposals for habitat restoration projects issued • NHEP presentation at Moose Mountain Regional Greenways Trail Day Event
September 2006	<ul style="list-style-type: none"> • NHEP Technical Advisory Committee Meeting • NHEP Management Committee Meeting • Two V.I.P. Tours of the Great Bay Estuary (one on National Estuary Day) • National Estuary Program Meeting (San Francisco)
October 2006	<ul style="list-style-type: none"> • Eight Local Grants Proposals received • Gulfwatch fieldwork and lab work initiated • 2006 State of the Estuaries Conference
November 2006	<ul style="list-style-type: none"> • Six projects selected for 2007 Local Grants Program
December 2006	<ul style="list-style-type: none"> • NHEP Public Outreach and Education Team Meeting • NHEP Shellfish and Living Resources Team Meeting • NHEP organizes and leads Information Sharing Meeting focused on community assistance programs
January 2007	<ul style="list-style-type: none"> • NHEP funding legislation introduced (Senate Bill 68) • NHEP Management Committee Meeting
February 2007	<ul style="list-style-type: none"> • 2006 State of the Estuaries Report and Supplemental Bookmark sent to 42 planning board and conservation commissions and to town libraries • NHEP Technical Advisory Committee Meeting on nutrient criteria development
March 2007	<ul style="list-style-type: none"> • National Estuary Program Meeting in Washington D.C.
April 2007	<ul style="list-style-type: none"> • Proposal Submitted to EPA's Regional Dedicated Water Quality Program • NHEP initiates planning for series of buffer workshops for town boards and staff to be held in fall 2007
May 2007	<ul style="list-style-type: none"> • NHEP Public Outreach and Education Team Meeting • NHEP Water Quality Team Meeting • NHEP Land Use Team Meeting • Impervious surface maps and resources list mailed to all town planning boards and conservation commissions
June 2007	<ul style="list-style-type: none"> • NHEP participates in annual ERLAC Alewife Festival • Pollution Reporting Campaign launched • NHEP Management Committee Meeting

IV. List of Ongoing Projects

Information on ongoing implementation projects is included below. Implementation projects are funded by the currently open EPA grants, which include the Year 9, Year 10, and Year 11 grants. The following table presents information for all ongoing projects (open as of 6/30/2007) and includes:

Work plan identification number

Project title/activity

Contractor/organization

Relevant Action Plan(s)

Project start and end dates

NHEP funds committed to the project

Matching funds committed to the project

Specific information on the status of each project is provided to EPA quarterly, via transmission of the NHEP's project tracking database to EPA.

Ongoing Projects, as of 6/30/07

Work Plan ID	Project Title/Activity	Contractor/ Organization	Relevant Action Plan(s)	Start Date	End Date	NHEP Funds Committed	Match Committed
05-A-4	Support for the Piscataqua River Cooperative operations in 2007	Portsmouth Towing; PRC companies	WQ-12	6/1/07	12/31/07	\$5,000	\$130,000
05-C-4.7	Fremont Technical Assistance Project	West Environmental	LND 25, LND 25D	8/7/2006	12/4/2007	\$9,000	\$11,080
05-C-13.1	Community Buffer Projects in Wakefield and Somersworth	Strafford Regional Planning Commission	LND-14	4/1/2007	12/31/2007	\$3,715	\$3,715
05-D-3	Coastal Dam Fish Passage Projects: Lamprey, Oyster, Cocheco Rivers	NH Fish & Game	RST-04	10/1/2005	12/31/2007	\$25,000	\$25,000
05-D-4	Taylor River Dam Restoration/Removal Feasibility Study	NH Dept of Transportation	RST-04	1/1/2006	12/31/2007	\$38,000	\$38,000
05-M-10	2007 Probabilistic Monitoring/National Coastal Assessment	UNH	Monitoring	5/1/2007	12/31/2007	\$10,000	\$10,000
06-A-1	2006 Community Stormwater Grant Program - grants for illicit discharge identification and elimination and storm sewer mapping	NHDES	SHL-02,WQ-04A,WQ-04B,WQ-04C	1/1/2006	12/31/2007	\$37,500	\$37,500
06-C-2 & 07-C-4	Community Technical Assistance Program Round 2: projects in 2007 and 2008	Community projects and contractors TBD	Various/TBD depending on projects selected	10/1/2005	6/30/2008	\$32,227	\$0.00
06-M-1	2007 UNH JEL Monitoring Programs (eelgrass, GulfWatch support, PAR/nutrient sampling, datasondes)	UNH	Monitoring	1/1/2007	3/30/2008	\$37,500	\$37,500
06-M-3	2007 Gulf Watch Program	NHDES	Monitoring	1/1/2007	12/31/2007	\$7,000	\$0.00
06-M-4	2007 Tidal Ambient Rivers Monitoring Program	NHDES	Monitoring	1/1/2007	12/31/2007	\$13,500	\$0.00
06-M-5	2007 Oyster Disease Monitoring	Rutgers/NHF&G	Monitoring	7/1/2007	12/31/2007	\$2,000	\$4,000
07-A-1	Erosion & Sedimentation Study	TBD	WQ-10	7/1/2007	6/30/2009	\$40,000	\$20,000
07-B-1	2007 NHDES Shellfish Program Implementation	NHDES	SHL-01,SHL-04,SHL-05,SHL-06	1/1/2007	12/31/2007	\$0.00	\$150,000
07-C-6	Increasing Capacity to Implement Community Land Conservation Efforts in the Coastal Watershed	Southeast Land Trust of New Hampshire	LND-15,LND-26,LND-36	1/25/2007	6/30/2008	\$10,000	\$19,928
07-C-7	Natural Resources Inventory and Natural	Rochester	LND-32	11/1/2006	6/30/2008	\$5,000	\$34,300

Work Plan ID	Project Title/Activity	Contractor/ Organization	Relevant Action Plan(s)	Start Date	End Date	NHEP Funds Committed	Match Committed
	Resources Chapter of the City Master Plan						
07-D-1	2007 Oyster Restoration Project	UNH	RST-01	1/1/2007	6/30/2009	\$58,096	\$50,991
07-D-2	Municipal Designation of Prime Wetlands	Brentwood	LND-25	4/1/2007	6/30/2008	\$10,000	\$16,254
07-D-3	Predicting the success of invasive species in the Great Bay Estuary	UNH	Monitoring,RST-7	11/29/2007	6/30/2008	\$10,000	\$5,493
07-E-3	NHEP General Outreach in 2007 (VIP tours, publications, survey)	NHEP-General Outreach	EDU-01,EDU-05	1/1/2007	10/01/2007	\$3,000	\$0.00
07-E-8	Outreach and education for community leaders and landowners	Moose Mountains Regional Greenways	EDU-05,LND-15,LND-36	1/17/2007	6/30/2008	\$8,520	\$7,058
07-E-9	Volunteer Water Quality Monitoring of the Lamprey River Watershed	Nottingham	EDU-05	2/20/2007	6/30/2008	\$1,250	\$1,250

V. Travel Report

Out-of-state travel conducted by the NHEP over the last year included: NHEP staff and two Management Committee members attending the Fall NEP/ANEP meeting in San Francisco; the NROC Coordinator attending the annual NEMO conference in Connecticut; NHEP staff attending the Spring NEP/ANEP meeting; and NHEP staff attending the Environmental Monitoring and Assessment Program (EMAP) Conference in Washington, DC.

Event	Location	Date	Traveler(s)	Cost
2006 NEP/ANEP Fall Meeting	San Francisco, CA	October 2006	Phil Trowbridge Peter Britz Mark Zankel	\$3,367
NEMO Annual Conference	Connecticut	October 2006	Amanda Stone	\$1,020
2007 NEP/ANEP Spring Meeting	Washington, DC	March 2007	Jennifer Hunter	\$1,215
EMAP Conference	Washington, DC	April 2007	Phil Trowbridge	\$358
Total Cost				\$5,960

Additional travel costs anticipated for 2007 include travel support for researchers participating in the Rapid Assessment Survey for marine invasive species, NHEP staff travel to the Fall NEP/ANEP meeting in San Juan, PR, and NHEP staff travel to the Estuarine Research Foundation conference in Providence, RI.

SECTION 2: YEAR TWELVE WORK PLAN

I. Goals

The activities and projects described in the Year 12 Work Plan are designed to accomplish the following goals:

1. Continue implementation of the NH Estuaries Project Management Plan

The NHEP will fund and manage projects and directly undertake activities to implement the Management Plan in 2008. Projects are identified in the following section.

2. Continue implementation of the NHEP Monitoring Plan and ongoing environmental assessments

The NHEP will manage projects and undertake activities in support of its monitoring program, including ongoing annual monitoring projects as well as special monitoring projects. Projects and activities will support development of the next set of indicator reports in 2008 and 2009, and ultimately the 2009 State of the Estuaries Report.

3. Implement the Fund Development Plan to secure additional funding to implement Management Plan priorities

The Fund Development Plan, finalized in May 2007, identifies actions to be implemented in 2007-2009 to increase funding for Management Plan implementation. The NHEP, in coordination with a funding subcommittee, will implement the actions identified in the plan.

4. Conduct a strategic planning process in 2007 to guide activities in 2008 and 2009

The NHEP will undertake a strategic planning process to identify actions for the NHEP to identify key strategies and actions to take to improve the organization and its ability to implement its management plan. The planning process will set the stage for development of the next management plan.

5. Develop a new Communication Plan for the NHEP

The NHEP will develop a new plan in 2008 to guide communications. The communication plan will support implementation of the strategic plan, fund development plan, and any decisions about changes to the NHEP area of focus.

II. Proposed Implementation Activities and Priorities

Typically the NHEP's project teams help develop priority projects and activities to be included in the work plan. However, given the lower level of funding available for projects in the 2008 work plan, the NHEP Management Committee chose to continue funding what have become some of the NHEP's core programs developed to support priority programmatic objectives, rather than allocate limited funding to new program areas. Team input in spring 2007 was instead used to review Management Plan implementation status and identify priorities for action by NHEP staff.

Projects and activities described below will be initiated in 2008. All projects funded by the Year Twelve grant will be completed by December 31, 2009. For each project or activity, an alphanumeric work plan code is generated for tracking in the NHEP database.

Activities that will be undertaken by the NHEP in 2008 using other grant funds are not included below; only those that are funded by the Year 12 grant or projects that provide matching funds for the grant are listed.

Projects and activities are listed in 3 sections: Management Plan Implementation, Monitoring Program Implementation, and Program Support/Administrative Activities & Initiatives.

MANAGEMENT PLAN IMPLEMENTATION

The projects and activities identified below will implement specific Action Plans from the Management Plan. Some activities will be completed by NHEP staff; some by partners and/or contractors with NHEP funding.

08-A-1: Community Stormwater Outreach and Assistance

NHEP staff will develop and implement an outreach program intended help communities learn more about stormwater management, identify resources available to assist them, improve stormwater related ordinances, and strengthen communities' abilities to minimize stormwater impacts through the site planning review process. The NHEP will develop a presentation and provide follow-up assistance as needed. Outreach and assistance will be targeted to municipal boards, although watershed organizations and other interested groups can request presentations as well. The outreach program will be developed with input from NHDES, Natural Resources Outreach Coalition, UNH Stormwater Center, and the NHEP Land Use Team.

Action Plans Implemented:

- Action Plan WQ-9: Ensure that water quality and quantity impacts from new development or redevelopment are minimized to the maximum extent practicable at the planning board stage of development
- Action Plan LND-22: Prevent the introduction of untreated stormwater to wetlands by

strengthening municipal site plan review regulations

- Action Plan LND-23: Prevent the introduction of untreated stormwater to wetlands through an increased understanding of stormwater impacts on wetland ecology
-

08-A-2: Support for the Piscataqua River Cooperative

The NHEP will continue efforts collaborate with the Piscataqua River Cooperative (PRC) to support its efforts to prevent, respond to, and minimize impacts from oil and hazardous waste spills. The PRC is supported through contributions from energy companies and with funds from the NHDES Oil Spill Response Program.

Action Plan Implemented:

Action Plan WQ-12A: Acknowledge and support the oil spill prevention and response activities of the Piscataqua River Cooperative

08-B-1: NHDES Shellfish Program Implementation

The NHDES Shellfish Program will conduct routine monitoring, shoreline surveys, classification studies, and red tide testing in 2008 in support of many action plans from the Management Plan. This is the second year that the Shellfish Program has operated with state funds (up to \$175,000 per year) secured for the program through NHEP efforts.

Action Plans Implemented:

- Action Plan SHL-1: Implement procedures in the National Shellfish Sanitation Program guidance to obtain certification by the FDA for a recreational and commercial shellfish program
 - Action Plan SHL-4: Enhance the amount and reliability of funding for strategies and actions to maintain a comprehensive shellfish program
 - Action Plan SHL-5: Collect and monitor water quality samples to identify sources and reduce or eliminate contaminants
 - Action Plan SHL-6: Periodically collect and monitor shellfish tissue samples as appropriate for toxins and biotoxins
-

08-B-2: Shellfish Resource Outreach

The NHEP will use \$3,500 to produce a 2008 “Shellfish Spotlight” publication, modeled after the publication developed in 2005, with updated information and a focus on restoration. The publication will address many of the shellfish related outreach actions in the Management Plan and provide information on restoration objectives.

Action Plans Implemented:

- Action Plan SHL-8: Develop and implement a plan for shellfish resource enhancement and habitat restoration activities to achieve a sustainable resource contributing to a healthy environment

- Action Plan SHL-11 (educational aspects only): Establish Bounty of the Bay shellfishing field education guide
 - Action Plan SHL-13: Update materials issued with shellfish licenses
-

08-C-1: NROC Support/Program Implementation

NHEP staff will participate in the Natural Resources Outreach Coalition, by participating in quarterly coordination meetings, serving on ad-hoc committees, serving on teams to prepare and deliver programs to communities and facilitate follow up, helping to develop work plans, and managing grants with participating communities. NHEP staff will work with two communities in 2008, or with more as needed.

Action Plan Implemented:

Action Plan LND-5: Support the Natural Resource Outreach Coalition (NROC) municipal decision-maker land-use planning outreach method

08-C-2: NROC Community Grants

The NHEP will provide \$8,000 for matching grants to participating communities in 2008. These funds will assist the communities with implementing priorities identified in their work plans developed through the NROC program.

Action Plan Implemented:

Action Plan LND-5: Support the Natural Resource Outreach Coalition (NROC) municipal decision-maker land-use planning outreach method

08-C-3: Buffer Protection Outreach and Assistance

NHEP staff will continue to provide information and assistance to communities that are interested in learning about the importance of buffers and steps they can take to improve buffer protections. The NHEP will deliver a presentation and conduct follow as needed. Outreach and assistance is targeted to municipal boards, although watershed organizations and other interested groups can request presentations as well. The outreach program will be updated to incorporate information on changes to the Comprehensive Shoreland Protection Act, as well as new information provided in a series of buffer workshops planned for fall 2007.

Action Plans Implemented:

- Action Plan LND-14: Develop and implement an outreach program to encourage and assist communities in developing and adopting land use regulations to protect undisturbed shoreland buffers
 - Action Plan LND-20: Develop and implement a wetlands buffer outreach program for planning boards
-

08-C-4: Community Technical Assistance Program

The NHEP will provide \$32,000 for continuation of the Community Technical Assistance Program in 2008. This funding should support four or five additional community projects. The program provides assistance to community conservation commissions and planning boards on various regulatory and nonregulatory approaches to natural resource protection, including land conservation planning, buffer protection, and stormwater management. Communities apply to the NHEP for assistance with a specific topic; communities are paired with “technical assistance providers” selected by the NHEP; project work plans are developed; and the NHEP oversees the consultants’ work with communities.

Action Plans Implemented (depending on community projects developed):

- Action Plans LND-15, LND-29, and LND-36 (land conservation planning)
 - Action Plans LND-1, LND-2, LND-6E, WQ-9, & WQ-18 (storm water management/low impact development assistance)
 - Action Plan LND14, LND-20, & LND-25 (buffers and wetlands protections)
-

08-D-1: Estuary Restoration Partnership

NHEP staff will continue to contribute to discussions and planning for potential formation of a partnership of organizations and agencies interested in restoring New Hampshire’s estuaries. The NHEP, The Nature Conservancy, Great Bay National Estuarine Research Reserve, and NH Coastal Program collectively are exploring options and engaging broader audiences in preliminary discussions to establish restoration goals and develop a more formal partnership to improve the pace and scale of restoration efforts.

Action Plans Implemented:

- Action Plan SHL-8: Develop and implement a plan for shellfish resource enhancement and habitat restoration activities to achieve a sustainable resource contributing to a healthy environment
 - Action Plan RST-2: Using the Coastal Method and other techniques, identify and restore tidal wetlands for aspects other than tidal restrictions
 - Action Plan RST-4: Identify and implement habitat restoration projects in other important non-tidal habitat areas, such as uplands and freshwater wetlands
-

08-E-1: Local Grants Program in 2008

The NHEP will provide up to \$50,000 for competitively selected projects in response to a request for proposals. The NHEP Management Plan places strong emphasis on empowering community partners to implement projects to improve natural resources protection. To this end, the NHEP will continue its Local Grants Program through 2008. Projects will be solicited through a Request for Proposals (RFP) issued by the NHEP in summer of 2007. Applicants’ projects can address any action plan from the NHEP Management Plan; however certain action plans recommended by project teams and NHEP staff will be highlighted in the RFP as funding priorities.

Action Plan Implemented:

Action Plan EDU-3: Establish and fund a Technical Assistance Grant Program to promote and fund projects that support the NHEP Management Plan

08-E-2: 2008 Eye on Estuaries Newspaper Column

The NHEP, with input from the Public Outreach and Education Team, will continue to work with the Seacoast Newspapers group, and other outlets as appropriate, to publish a monthly column titled "Eye on Estuaries," which highlights estuarine and other local natural resource issues. Topics relevant to Management Plan priorities will be addressed.

Action Plans Implemented:

- Action Plan EDU-1: Utilize the media to enhance educational efforts
 - Action Plan EDU-2: Work with the Seacoast Newspapers to establish a monthly newspaper column devoted to coastal natural resource issues
-

08-E-3: General Outreach/Communications Support in 2008

The NHEP will conduct general outreach activities (press releases, website updates, Estuaries Update email newsletter, participate in outreach events, etc.) in 2008. In addition, the NHEP will continue to develop and maintain an email list of coastal decision-makers so that information can best reach this target audience. These NHEP activities support general outreach and communication objectives and implement the Strategic Communication Plan and outreach components of the Management Plan.

Action Plans Implemented:

These activities are intended to support general outreach objectives to increase awareness of the NHEP and its products and resources, as well as increase overall awareness of important coastal issues.

08-E-4: V.I.P. Boat Tours

The NHEP will organize and conduct two boat tours of the Great Bay estuary in 2008 geared for coastal watershed planning board members and conservation commissions, as well as other town board members. This will be the fifth year that the NHEP has organized these well-attended events for participants. Approximately 75 people are anticipated to participate. The boat tours are an opportunity to introduce community decision makers to the NHEP and its programs, help people connect to the area's estuarine resources, highlight information and projects of particular relevance, and encourage networking between communities.

Action Plan Implemented:

Action Plan WQ-20: Conduct an Estuarine Field Day for municipal officials

08-E-5: Targeted Outreach Campaign

The NHEP will use \$3,500 to develop and/or reprint outreach products and implement specific outreach activities targeted to municipal boards in 2008. Outreach products from the recent water pollution reporting campaign (Action Plan WQ-6) and/or prime wetlands designation campaign (Action Plans LND-25 and LND-25A) will be re-printed for additional use in 2008 if needed, or the funds will be used to produce new products focusing on another issue, but tied to the overall “Be Part of the Solution” campaign.

Alternatively, funds may be used to produce outreach products to address priorities identified in the new Communications Plan that will be developed in early 2008.

MONITORING PROGRAM IMPLEMENTATION

The NHEP Coastal Scientist oversees the development and implementation of NHEP’s monitoring activities. Monitoring activities involve implementation of the Monitoring Plan, which outlines the data and analytical methods for indicators that assess environmental objectives. Monitoring activities include annual programs and special projects for which data are collected less frequently. Quality Assurance Project Plans (QAPPs) are developed as necessary for monitoring projects. The NHEP Technical Advisory Committee reviewed the plan for 2008 monitoring projects in May 2007.

The NHEP’s Year 12 grant includes \$76,000 that will support monitoring projects in 2008. In addition, \$17,000 from the NHEP’s previous grant award will support 2008 monitoring projects, for a total of \$93,000. The 2008 projects include the NHEP’s core annual monitoring programs, plus additional monitoring projects that will provide data needed for the next series of indicator reports. Organizations receiving NHEP funds to conduct monitoring activities will provide matching funds. In addition, FPL Energy Seabrook Station conducts monitoring activities in Hampton-Seabrook Harbor that provide data used by the NHEP for its indicator reports and are counted as matching funds for the program.

The 2008 monitoring projects to be supported by the NHEP are listed in the following table.

Program Name	Description	Contractor(s)	Cost
Tidal Tributary Monitoring Program	The NHDES Ambient Rivers Monitoring Program is extended to tidal tributaries. The program includes monthly (Mar-Dec) water quality sampling for bacteria, nutrients, and other parameters on 10 tributaries to Great Bay and Little Harbor.	NH Dept of Environmental Services (NHDES)	\$15,700
GulfWatch Program (Analysis)	Two benchmark sites are added to the yearly monitoring of toxic contaminants in blue mussel tissue conducted through the GulfWatch Program. NHEP funded sites include Dover Point and Hampton Harbor.	2 labs: Batelle and Environment Canada for contaminant analysis	\$7,000
GulfWatch Program (Lab Support)	Logistical support to assist the NHEP in coordinating the annual GulfWatch Program. Funds support use of UNH lab space, lab supplies, and staff time to store and ship samples.	UNH Marine Program	\$1,000
Oyster Disease Testing	Yearly testing of the four major oyster beds in Great Bay for the diseases MSX and Dermo. Samples are collected by NH Fish and Game and shipped to Rutgers for testing. F&G boat and diver time is counted as match for the program.	Rutgers University	\$2,200
Eelgrass Mapping	Annual mapping of eelgrass beds in the Great Bay, Little Bay, and Portsmouth Harbor, including image acquisition, ground truthing, and data analysis. Includes data processing for two years of imagery (2007 & 2008 imagery).	UNH Marine Program	\$17,500
GBNERR/UNH Datasonde Program: Supplemental Sonde Deployment & Monitoring	Operation and maintenance costs for <i>in-situ</i> datasondes to monitor dissolved oxygen and other parameters at 5 locations throughout the estuary, plus summer deployment of a sonde in the Salmon Falls River.	UNH Marine Program	\$11,500
UNH Tidal Water Quality Trend Monitoring	Monthly (Jan-Dec) monitoring of nutrients, particulates, and bacteria at tidal trend stations in Great Bay and Hampton-Seabrook Harbor.	UNH Marine Program	\$19,000
NHEP National Coastal Assessment Probabilistic Monitoring	Continued annual probabilistic sampling of water quality for the National Coastal Assessment. 2008 program operation is dependent on an additional \$10,000 from NHDES.	UNH Marine Program	\$10,000
Nitrogen Load/WWTF Monitoring	Analysis of total nitrogen in wastewater treatment facility effluent for 10 facilities in the Great Bay watershed with annual average flows greater than 0.2 MGD. Data will update the nitrogen indicator for the 2009 State of the Estuaries Report.	UNH Water Quality Analysis Lab (sample collection conducted by NHEP staff)	\$1,600
Conservation Lands Data Update	Update to the conservation lands data layer for 2009 State of the Estuaries report.	UNH Complex Systems Research Center	\$7,500
TOTAL NHEP COSTS:			\$93,000

PROGRAM SUPPORT/ADMINISTRATIVE ACTIVITIES & INITIATIVES

The following activities will be initiated in 2008 to support overall Management Plan implementation and NHEP operations.

08-Admin-1: Preparation for Management Plan update

The NHEP will initiate efforts to update its Management Plan in late 2008, aiming for completion in 2010. Preparatory work in 2008 may include an assessment of current local regulations related to natural resources protection. \$10,000 from the Year 12 grant will support Management Plan update efforts.

08-Admin-2: Develop and implement a new Communication Plan

In early 2008, the NHEP will develop a new Communication Plan to identify key priorities and strategies. The plan will be informed by an upcoming strategic planning process, an awareness survey of municipal boards, management plan implementation progress report, and fundraising strategies identified in the Fund Development Plan. The NHEP website and Estuaries Update, along with other communication materials, will be revamped accordingly.

08-Admin-3: Implement the Fund Development Plan

In 2008, the NHEP will continue to undertake activities identified in the Fund Development Plan (completed in 2007) aimed at bringing in additional funds for Management Plan implementation.

III. Program Administration

The University of New Hampshire administers the New Hampshire Estuaries Project. The Year 12 Work Plan includes costs for administration of the NHEP in FFY 2008 (October 1, 2007 – September 30, 2008), including staff salary, benefits, supplies, office operations, travel, and indirect costs. Half of the anticipated costs for UNH staff salaries and benefits in FFY08 will be covered by the previous grant award (Year 11 grant); the Year 12 grant will cover approximately 6 months of UNH staff salaries and benefits for the second half of FFY08.

Staff Expenses in FFY 2008

There are three NHEP staff employed by UNH (NHEP Director and two Project Coordinators). The NHEP Coastal Scientist is employed by the NH Department of Environmental Services. Benefits for UNH staff are calculated as 41% of the salary. The NHEP also will hire an intern/work study student for 2008 to assist with special projects. There are no benefits calculated for the intern. Costs for staff are identified below:

- UNH NHEP staff, including salary and benefits for ~50% of the year for 3 positions: **\$106,455** (remaining funds budgeted for salary and benefits from the Year 11 grant will cover ~50% of the costs in FFY2008)
- NHEP Coastal Scientist position at the NH Department of Environmental Services, with the NHEP covering ~70% of all costs associated with the position and NHDES covering ~30% of the costs. NHEP funding for the Coastal Scientist position in 2008: **\$60,000**
- Intern at UNH (work study program): **\$545**

Specific roles of NHEP staff and others in administering the program are:

NHEP Director (UNH position, 80% time): The Director is responsible for the overall administration of the program to carry out activities and priorities approved by the NHEP Management Committee in the annual work plan; meeting federal requirements of the program, including requisite program reporting; supervising program staff and contractors to implement work plans, projects, communications activities and technical assistance programs; coordinating with stakeholder and partner groups to set priorities and schedules for program implementation; developing annual work plans and budgets; securing and documenting non-federal matching funds for the program; overseeing the award and supervision of environmental monitoring and implementation projects to ensure acquisition of environmental data and achievement of project objectives; implementing the fund development plan to secure additional financial resources; and representing the NHEP in local, regional, and national settings.

NHEP Project Coordinator (Outreach/Communications) (UNH position, 100% time): The Project/Outreach Coordinator implements education and outreach actions from the Management Plan; develops and implements the NHEP's communication plan; oversees the annual Local Grants Program including evaluating proposals, developing scopes of work, and managing contracts with successful applicants; performs project tracking and reporting activities; chairs the Public Outreach and Education Team,

provides support to other NHEP project teams; and coordinates production of publications, manages the program website, prepares and issues press releases, and facilitates the production and placement of stories as part of the program's ongoing monthly newspaper column.

NHEP Project Coordinator (Community Assistance) (UNH position, 80% time): The Project Coordinator implements actions from the Management Plan (focusing primarily on land use and habitat protection); manages the NHEP's Community Technical Assistance Program, including reviewing applications, developing project work scopes, and managing subcontractors' work; participates in the Natural Resources Outreach Coalition and manages grants for community projects; delivers presentations and other information to community boards to assist with improving buffer protections; performs project tracking and reporting activities; provides support to the NHEP Land Use and Habitat Protection Team and other project teams; and assists with outreach activities for the program.

NHEP Coastal Scientist (NH Department of Environmental Services position, ~70% time on NHEP activities): The Coastal Scientist is responsible for overseeing and implementing the NHEP Monitoring Plan, including collection, analysis, and reporting of environmental indicator data, developing and managing projects related to the Monitoring Plan, and revising the plan as needed; managing the QAPP development and approval process for NHEP projects; chairing the Shellfish and Living Resources Team and providing support to the Technical Advisory Committee; managing contracts and projects related to monitoring and restoration activities; and completing other projects assigned by the NHEP Director to address the program's monitoring and technical analysis needs. Specific work tasks for the position are developed in an annual Agreement with NHDES.

Intern/Work Study Student: The NHEP hires students to complete work for the NHEP on an hourly, as-needed, basis. The intern assists with administrative work (database management, compiling mailings, etc.) and will complete short-term special projects as needed.

Other Program Support: Additional administrative program support is provided by the UNH Office of Sponsored Research, whose staff develop and manage contract agreements for the NHEP, and the Business Service Center, whose staff handle financial and administrative services for the NHEP including purchasing, payroll, and personnel administration. Costs for services from these departments are covered, in part, by the indirect rate charged to the federal grant.

NHEP Management Committee: Members of the Management Committee provide valuable in-kind support for operation of the NHEP and implementation of the Management Plan. The Management Committee meets quarterly and periodically conducts work outside of meetings. In-kind support for 2007 is estimated at \$5,000, based on actual hours committed to NHEP meetings and activities by individuals in previous years. This estimate is conservative; it does not represent travel time or time

spent on NHEP activities outside of meetings, and it only represents time by about half of the committee members whose time can be counted toward the match requirement for the NHEP grant.

Administrative/Office Expenses for 2008

Supplies and Office Expenses – This includes phone and data lines, file space on the UNH server, postage, copying, printing, office supplies, meeting supplies, and hardware and software for four work stations (**\$8,000**).

Travel – Costs for NHEP staff to attend regional and national conferences in 2008 and for in-state travel to attend meetings and conduct monthly sampling at ten wastewater treatment plants (**\$6,500**).

Indirect (facilities and administrative costs) – The University's indirect costs (also known as facilities and administrative or F&A costs) are assessed at a rate of 20% for the NHEP grant, which is below UNH's standard rate of 34.2%. The indirect cost waiver granted by UNH allows the NHEP to commit more funds to project implementation. Indirect costs are calculated as 20% of all direct costs, including the first \$25,000 of each subaward made by the university. The Year 12 grant includes **\$52,500** for indirect charges.

IV. Year 12 Budget: Funding Allocation for 2008

Work Plan ID	Project/Activity	NHEP Funding	Matching Funding	Total Funding
08-A-1	Community Stormwater Outreach and Assistance*	\$0	\$0	\$0
08-A-2	Support for Piscataqua River Cooperative	\$0	\$150,000	\$150,000
08-B-1	NHDES Shellfish Program Implementation	\$0	\$124,000	\$124,000
08-B-2	Shellfish Resource Outreach	\$3,500	\$0	\$3,500
08-C-1	NROC Program Implementation*	\$0	\$0	\$0
08-C-2	NROC Community Grants	\$8,000	\$8,000	\$16,000
08-C-3	Buffer Protection Outreach and Assistance*	\$0	\$0	\$0
08-C-4	Community Technical Assistance Program	\$32,000	\$0	\$32,000
08-D-1	Estuary Restoration Partnership*	\$0	\$0	\$0
08-E-1	Local Grants Program	\$50,000	\$25,000	\$75,000
08-E-2	Eye on Estuaries Newspaper Column*	\$0	\$0	\$0
08-E-3	General Outreach*	\$0	\$0	\$0
08-E-4	VIP Boat Tours	\$1,000	\$0	\$1,000
08-E-5	2008 Targeted Outreach Campaign	\$3,500	\$0	\$3,500
08-M-1	2008 Monitoring Program**: Tidal Tributary Monitoring GulfWatch Program Oyster Disease Testing Eelgrass Mapping Datasonde Deployment & Monitoring WQ Trend Monitoring (nutrients, particulates, bacteria) Nitrogen Load/WWTF Monitoring National Coastal Assessment WQ Monitoring Conservation Lands Data Update	\$76,000	\$76,000	\$152,000
08-Admin-1	Management Plan Update	\$10,000	\$0	\$10,000
08-Admin-2	Communications Plan Update*	\$0	\$0	\$0
08-Admin-3	Fund Development Plan Implementation*	\$0	\$0	\$0
Management/Admin	NHEP Management Committee	\$0	\$5,000	\$5,000
Management/Admin	NHEP/UNH Staff (3 staff, plus work study student)	\$107,000	\$0	\$107,000
Management/Admin	NHEP/NHDES Staff (Coastal Scientist)	\$60,000	\$0	\$60,000
Management/Admin	Office Supplies/Materials	\$8,000	\$0	\$8,000
Management/Admin	Travel	\$6,500	\$0	\$6,500
Management/Admin	Indirect	\$52,500	\$30,000	\$82,500
TOTAL		\$418,000	\$418,000	\$836,000

(*) No cost is indicated; however activities will require NHEP Staff time and those costs are captured in Staff lines.

(**) An additional \$17,000 of funding from the previous grant will support monitoring projects in 2008 (total of \$93,000).