

2011

ANNUAL REPORT

SOUTHEAST WATERSHED
ALLIANCE

NOVEMBER 1, 2011

Southeast Watershed Alliance
P.O. Box 22122
Pease Tradeport
Portsmouth, NH 03801

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SOUTHEAST WATERSHED ALLIANCE
November 1, 2011

To: Senate President
 Speaker of the House of Representatives
 Senate Energy, Environment and Economic Development Committee
 House Resources, Recreation and Development Committee

From: **Southeast Watershed Alliance**
 P.O. Box 22122
 Pease Tradeport
 Portsmouth, NH 03801

Re: Report pursuant to RSA 485-E:12

I. GENERAL

The Southeast Watershed Alliance (Alliance) was established by the New Hampshire Legislature in 2009 pursuant to RSA 485-E:5. The Alliance represents 42 communities in the NH Coastal Watershed. To date, 29 of those communities have officially designated representatives to the Alliance and those representatives actively participate in Alliance activities. Many of the remaining communities have been closely following the activities of the Alliance and attending meetings. The representatives from the participating communities have been working together to accomplish the tasks set forth in RSA 485-E:5 II. The Alliance is trying to conduct outreach to those communities that have not yet officially designated a representative and we are optimistic that more communities will join the Alliance in the coming year.

II. BOARD OF DIRECTORS

The Board of Directors of the Alliance consists of eleven (11) Representatives that are elected by a majority vote of all Representatives in attendance at the Annual Meeting. The Board of Directors meets regularly on the second Monday of every month with additional meetings scheduled as needed.

At the Alliance Meeting held on May 25, 2011, a three member Nominating Committee was established to present candidates to the Board of Directors to replace outgoing members of the Board. The current Board of directors consists of the following members:

<u>MUNICIPALITY</u>	<u>REPRESENTATIVE</u>
Town of Hampton Falls	Candace Dolan
Town of Danville	Walter Fries
Town of Madbury	James Irish

Town of Raymond	L. Michael Kappler
Town of Stratham	Michael Perfit
Town of Exeter	Jennifer Perry
City of Dover	Dean Peschel
City of Portsmouth	Peter Rice
Town of Candia	Richard Snow
Town of Newfields	Alison Watts
Town of Chester	Michael Trainque

At the Board of Directors meeting held on June 13, 2011, the Board of Directors nominated and approved the following officers:

Chairman	Michael Trainque
Vice Chairman	Walter Fries
Treasurer	Richard Snow
Secretary	Michael Perfit
Project Coordinator	Alison Watts
Education and Outreach	Candace Dolan

III. EDUCATION AND OUTREACH

Education and outreach to governing boards, land use boards, stakeholders, and the general population within the communities are core functions of the Alliance and are critical to achieving the goals of the Alliance. This outreach is an extensive undertaking and will require more resources than currently available to the Alliance. Thus far, the NHDES Coastal Program section, Piscataqua Region Estuaries Partnership (PREP), and the regional planning commissions have been generous with technical advice within the scope of their respective expertise. They have been the primary resources available to the Alliance.

A. SYMPOSIA

One key component of the Education and outreach activities is an ongoing series of symposia to be presented by the Alliance to address various topics and issues of concern relative to ongoing research and data gathering activities, watershed management and watershed restoration. The first symposium was held on May 11, 2011 at Great Bay Community College from 8:30 A.M. to 3:00 P.M. A panelist of 12 researchers presented overviews of their research work in the NH Coastal Watershed in the morning. A lively panel discussion followed during which audience members asked questions and the answers we provided by various panelists. Presentations included:

Estuaries 101 – Dr. Jonathan Pennock, Director of UNH Sea Grant and Director of UNH Marine Programs.

Piscataqua Region Estuaries Partnership: State of the Estuaries Indicators – Philip Trowbridge, Coastal Scientist / Water Quality Standards Program Manager at NHDES.

Bacterial & Toxic Contaminants – Dr. Steve Jones, research professor in the Dept. of Natural Resources and the Environment, on the graduate faculty of the Dept. of Molecular, Cellular and Biomedical Sciences, Assistant Director for Research for the NH Sea Grant College Program, and a resident scientist at the Jackson Estuarine Laboratory.

Nitrogen Research in the Lamprey River Watershed and the Great Bay Estuarine Ecosystem – Michelle Daley, Research Scientist, Associate Director New Hampshire Water Resources Research Center, UNH.

Nutrients and Dissolved Oxygen – Dr. Jonathan Pennock.

Importance of Sediment Deposits in Great Bay Estuary, New Hampshire – Dr. Larry Ward, Research Associate Professor in the Department of Earth Sciences and a member of the Center for Coastal and Ocean Mapping and Jackson Estuarine Laboratory.

Eelgrass and the Nitrogen Threat to Great Bay – Dr. Fred Short, Research Professor in the Department of Natural Resources and the Environment at the Jackson Estuarine Laboratory (UNH), and director of SeagrassNet, a worldwide seagrass monitoring program with 114 monitoring sites in 32 countries.

Use of Mechanistic Modeling to Enhance Derivation of Great Bay total Nitrogen Criteria and Inform Restoration Strategy – Thomas Gallagher, P.E., Principal of HydroQual, Inc.

Oyster Restoration, Aquaculture, and Bioextraction in New Hampshire - Dr. Ray Grizzle, research professor in the UNH Marine Program, Center for Marine Biology, Department of Biological Sciences and a resident scientist at the Jackson Estuarine Laboratory.

Restoring Balance to the Great Bay Ecosystem – Dr. Richard Langan, Director of Ocean and Coastal Technology Programs and an Affiliate Professor of Biological Sciences at UNH.

Microalgae – Dr. Arthur Mathieson, Professor, Dept. of Biological Sciences, UNH, and a former director of the Jackson Estuarine Laboratory.

Data Gaps, Needs, and Opportunities – Philip Trowbridge.

Robert L. Zimmerman, Jr., Executive Director of the Charles River Watershed Association in Cambridge, MA, volunteered to serve as moderator for the science symposium.

Currently, considerable effort is being directed to planning the next symposium which will be held in the very near future and will be focused on the Watershed Management and Restoration Plan discussed later in this report.

B. ONGOING EDUCATION AND OUTREACH

The Alliance will continue its education and outreach efforts by fostering communication, cooperation and collaboration with the 42 communities within the watershed as well as with stakeholders, the regional planning commissions, PREP, the local river advisory committees, the NHDES, EPA and others. It will be essential for the Alliance to achieve consensus and buy-in from the member communities to develop and implement the goals of the Alliance. The education and outreach efforts will require resources, such as labor, funding and other needs, not yet available to the Alliance in order to adapt information and present it in an effective manner to the various and diverse audiences with their differing needs for information.

IV. FUNDING

During 2011, the Alliance applied for two grants to help carry out selected activities or to help fund other needs of the Alliance. These grants are described below.

A. Grant No.1

The Alliance applied for a grant from the National Oceanic and Atmospheric Administration (NOAA) through the NHDES Coastal Program. The grant award is for \$ 28,000 which requires a \$ 28,000 match by the Alliance of non-federal cash and in-kind services. The project for which this grant award is to be used includes the following two primary tasks:

TASK 1 – Support the Alliance in startup costs associated with the initial planning, organizational and implementation phase of the Alliance consistent with the planning and management activities for which the Alliance was established.

TASK 2 – Develop and promote consistent and effective stormwater management standards for NH coastal communities located within the jurisdiction of the Alliance and the NH coastal communities.

The grant contract has been approved by the NH Attorney General’s office, signed by the Alliance, signed by the NHDES Commissioner and is expect to be on the Governor and Executive Council agenda in November for final approval.

B. Grant No. 2

The UNH Stormwater Center, in conjunction with the Alliance, jointly applied for a Watershed Assistance Grant through the Section 319 (Federal Clean Water Act) Nonpoint Source Management Program in the form of a *Watershed Restoration Grant for Impaired Waters*. The 1987 amendments to the Clean Water Act (CWA) established the Section 319 Nonpoint Source Management Program to address the need for greater federal leadership to help focus state and local nonpoint source efforts. Under Section 319, states, territories and tribes receive grant money that supports a wide variety of activities including technical assistance, financial assistance, education, training, technology transfer, demonstration projects and monitoring to assess the success of specific nonpoint source implementation projects. The grant funds, while less than the amount applied for, will enable the Alliance and the UNH Stormwater Center to move forward with this project.

This project includes developing a Great Bay Municipal Bioretention Program to assist Municipal Separate Storm Sewer System (MS4) and non-MS4 municipalities in implementing strategies for watershed nutrient reduction. The project will be conducted in three phases.

Phase 1 includes performing a pollutant load analysis based on land use and impervious cover, refined to the local municipal level. Stormwater derived loadings will be modeled and classified by land use and proximity to identify target “hot spot” locations for retrofit and maximizing load reductions. This action is outlined in the PREP 2010 Comprehensive Conservation and Management Plan (CCMP), identified as an action with the highest priority, and is supported by

the NHDES. Phase 2 of this project involves the development of a municipal web framework comprised of resources, from design to installation, to facilitate implementation of “green” infrastructure in communities located within the Great Bay watershed. Through collaboration with Low Impact Design (LID) experts, the Southeast Watershed Alliance, Regional Planning Commissions, municipalities, design firms, nurseries, and landscape professionals, a body of designs and resources will be developed and made available for future implementation. Phase 3 involves an outreach campaign, led by the Alliance, for the Stormwater Center to train communities how to use the impervious cover and land use analyses for targeted nonpoint source management. The training will link the resource framework to prioritized implementations in the respective communities.

C. Funding – General

Any undertaking by the Alliance members has been on a volunteer basis without compensation. In fact, cash outlays required for Alliance expenses have been donated by Representatives of the Alliance. Consistent sources of funding are necessary to even modestly accomplish the goals and purpose of the Alliance. In this current time of economic stress, direct contribution by participating communities is neither feasible nor practical in terms of timing given both appropriation lead times and voter choice without extensive education (available through the Alliance). Planning to undertake the many tasks to achieve the purposes of the enabling legislation are severely inhibited by the lack of available funds and the likelihood of any significant change in those prospects. While related efforts in the past were funded (e.g., SB-70), no such funding has been made available to the Alliance to date.

V. WATERSHED MANAGEMENT AND RESTORATION PLAN

By far the most ambitious undertaking on which the Alliance is currently focused involves the development of a *Watershed Management and Restoration Plan*. The NH coastal watershed has been identified by State and Federal regulatory agencies as a water body under stress from nutrient enrichment and other sources of water quality impairments. Portions of the Great Bay estuary are in non-attainment of designated uses and in violation of established water quality criteria. Because nutrient enrichment and other adverse water quality impacts result from a variety of both point and non-point sources, the mitigation of these environmental stressors requires a new approach to identifying, controlling and reducing both point and non-point inputs.

The objective of the *Watershed Management and Restoration Plan* is to take a broad holistic and cost-effective approach to implementing water quality restoration and management measures that will achieve better overall results in improving water quality goals in less time and at less cost than the traditional regulate-react approach. The idea behind the Plan is for the Alliance and its 42 members to become proactive rather reactive in restoring water quality within the watershed.

This type of approach is consistent with the latest regulatory guidance at the national level. A recent report by the National Research Council (NRC) indicates that regulatory agencies must re-establish permit requirements on a watershed basis to “ensure progress and provide meaningful regulation”. The NRC report indicates that EPA’s current regulatory approach is unlikely to

produce a sustainable administrative framework for long-term management as traditional wastewater and stormwater permits often require separate permits with different departments or agencies thereby minimizing collaboration and effective regional watershed oversight. This traditional diversified approach also minimizes the opportunities for creative, innovative, centralized and multi-pronged approaches to achieving water quality goals.

To this end, the Alliance believes that EPA participation and collaboration with the Alliance would be an essential contribution to the successful development of an effective Watershed Management and Restoration Plan. The EPA has a wealth of institutional knowledge gained from working on watershed management and restoration efforts in diverse watersheds across the country. On July 14, 2011, the Alliance sent a letter to EPA Administrator Lisa Jackson and EPA Region 1 (New England) Administrator Curtis Spaulding inviting the EPA to work in partnership with the Alliance in formulating a *Watershed Management and Restoration Plan* for the NH Coastal Watershed that is cost-effective, innovative and will result in compliance with water quality goals.

In a response letter dated August 3, 2011, the EPA indicated its concurrence that a plan addressing both point sources and non-point sources of pollution is “*necessary to reach our shared goals of restoring and maintaining the integrity of the Great Bay watershed*”. EPA expressed willingness to work cooperatively and in collaboration with the Alliance as we move forward in developing a Watershed Management and Restoration Plan. We are in the process of scheduling our first meeting with representatives of EPA in early 2012 and look forward to working with EPA during 2012.

VI. WEB SITE

The Southeast Watershed Alliance (Alliance) maintains a web site dedicated exclusively to its purposes. All meeting notices, agendas, minutes and other general information are posted there. The URL for the web site is: SoutheastWatershedAlliance.org. The web site was expanded to include a wiki to provide a mechanism for updating information, displaying a diversity of data, interpretations and will allow experts in any given areas to make contributions in an orderly manner. We have been expanding the web site to include additional resources, such as the presentations from the May 11 science symposium and links to other information sources.

VII. ONGOING ACTIVITIES

In 2010 the Alliance identified several priority tasks. Meetings held by the Board of Directors and the full Alliance during 2011 included ongoing discussion and refinement of these priorities. Certain short term tasks were identified that need to be given priority relative to improving water quality in the NH Coastal Watershed. Emphasis is given to tasks that are both practicable and capable of implementation in the near term without new large capital or infrastructure outlays. Such tasks include:

- Develop consistent storm water regulations and best management practices;
- Identify “hot spots” (i.e. sources and land practices) that degrade water quality;

- Identify funding resources to enable prerequisite research and corrective actions to be undertaken;
- Maintain and improve the web site;
- Apply for funding (typically grants) to enable the Alliance to carry out activities;
- Conduct land owner outreach and municipal involvement that addresses various water quality issues. Examples of this include: benefit of routine septic system maintenance, proper use of fertilizers and low impact landscaping, incorporating Low Impact Development (LID) requirements into existing site and subdivision regulations to address stormwater management.

The Alliance is very much cognizant of the current economic stresses faced by local, state and federal governments and the difficulty its members may face in committing resources for the furtherance of Alliance goals. Accordingly, the Alliance has been focusing its immediate efforts on those activities that can be implemented at low cost while yielding the maximum impact in terms of improving water quality. Coupled with this approach is the need to ensure that decision making is solidly science-based and will produce quantifiable and measurable results rather than simply arising from unsupported opinion, conjecture or popular false belief.

Innovative solutions to solve water quality and related issues are being explored. Extractive technologies (viz., bivalve mollusk aquaculture and micro algal production) are being investigated as possible means of meeting nutrient criteria goals for estuarine waters. These studies will require active participation of state and federal agencies in conjunction with local communities and potential business operators/investors. Regional economic benefit could be a useful byproduct if this approach can be shown to be successful.

OTHER HIGHLIGHTS FROM 2011

Wally Fries, representative for the Town of Danville, current Vice Chair and 2010 Chairman of the Board of Directors, attended the New England Water Environment Association (NEWEA) Annual Congressional Briefing Breakfast in Washington, D.C. on April 5, 2011 in his capacity as Chairman of the Alliance Board of Directors as a guest speaker at the invitation of the NEWEA Government and Legislative Affairs Committee. An annual hallmark for the New England Water Environment Association and its Government Affairs program, the NEWEA Congressional Breakfast was held at the Rayburn Building in Washington, D.C. Over 70 NEWEA members and guests joined in discussing the importance of getting to Washington and delivering the message - Water Matters! Speakers at the Congressional Breakfast included: Senator Bernie Sanders (I) – Vermont, event sponsor Congressman Jim McGovern, (D) Massachusetts – 3rd District, Congressman Tim Bishop, (D) New York – 1st District, Congresswoman Chellie Pingree, (D) Maine – 1st District, Curtis Spalding, EPA Region I Administrator, Jeanette Brown, President, Water Environment Federation and Executive Director, Stamford, CT Wastewater Treatment Facility, Bill Taylor, Partner - Pierce Atwood, LLP, and Wally Fries, Southeast Watershed Alliance. Upon completion of the breakfast, NEWEA members adjourned for their individual meetings with members of their state's congressional delegation including Vermont appointments with Senators Patrick Leahy and Bernie Sanders, and Representative Peter Welch; New Hampshire appointments with Senators Jeanne Shaheen and Kelly Ayotte, and Representatives Tony Guinta and Charlie Bass;

Massachusetts appointments with Senators John Kerry and Scott Brown; Maine appointments with Senators Susan Collins and Olympia Snowe and Representatives Chellie Pingree and Michael Michaud. The Rhode Island members met with Senators Whitehouse and Reed and Representative Langevin and the Connecticut members met with Senator Richard Blumenthal and Representatives Jim Himes, Joe Courtney, Rosa DeLauro, and Chris Murphy

Alison Watts, representative for the Town of Newfields and member of the Alliance Board of Directors, was appointed to the Governor's newly formed Water Sustainability Commission as a representative for the Alliance on the Commission. The Water Sustainability Commission was established by Executive Order 2011-2 on April 22, 2011. The Commission is working to identify strategies and management measures for ensuring that the quality and quantity of New Hampshire's water resources in 25 years are as good as or better than they are today. The Commission is currently reviewing existing information on the status of NH's water resources, and will provide opportunity for public input during its study, including at least one public session in each of the Executive Council Districts. Among the matters to be considered by the Commission are evaluating existing and future needs for water supply, wastewater disposal and storm water management in order to make recommendations concerning the infrastructure, investment and other measures necessary for the continued availability of clean water supplies for businesses, individuals, and communities.

Alison Watts also gave a presentation at the NH Water and Watershed Conference in Plymouth NH on March 26, 2011 discussing the Alliance's history, goals and achievements to date.

VIII. ACTIONS CURRENTLY PLANNED FOR 2012

- Further develop details of the *Watershed Management and Restoration Plan*.
- Collaborate with other groups, agencies, and organizations such as the EPA, PREP, the Nature Conservancy, the Regional Planning Commissions, the Local River Advisory Committees (LRAC), and others to assist the Alliance with development of the *Watershed Management and Restoration Plan* and furtherance of other Alliance activities.
- Further develop and implement the initial priority activities.
- Identify and actively pursue funding resources, including public and private grants, in-kind services and municipal contributions.
- Conduct science and other symposia.
- Perform a broad range of education and outreach activities for the coastal watershed communities.
- Identify and develop additional priority activities, including long term planning and implementation actions.

Six of the communities within the NH Coastal Watershed that own and operate public municipal wastewater treatment facilities have formed the Great Bay Municipal Coalition. The Coalition includes Dover, Durham, Exeter, Newmarket, Portsmouth and Rochester. The Coalition has proposed an Interim Program for Water Quality Improvements that includes wastewater treatment facility upgrades, Best Management Practices (BMP's) for stormwater management and completion of additional studies. Pursuant to a Memorandum of Understanding between the

NHDES and the Coalition signed in June 2011, the Coalition will proceed with the development of a hydrodynamic and water quality model for the Squamscott River. The work includes collection of field data, data compilation and analysis, and model calibration. The model will be used to propose site-specific nutrient (nitrogen) criteria and wastewater treatment facility effluent limitations in the Squamscott River. This work will continue into 2012.

IX. FUTURE LEGISLATION

Other than the need for funding, it is premature for the Alliance to offer any clear recommendations for future legislation at this time.

ACKNOWLEDGEMENTS

The Alliance gratefully acknowledges the donation of computer equipment (two complete computer systems including laptops, printers, and peripherals) by *Pfizer Corporation* and the donation of space, telephone and electricity by *Hoyle, Tanner & Associates, Inc.* in its Portsmouth office in the Pease International Tradeport. This includes the office space currently occupied by the Alliance as well as the use of the conference room for the monthly Board of Directors meetings.

Respectfully submitted,
SOUTHEAST WATERSHED ALLIANCE



Michael A. Trainque, Chairman
Board of Directors