



Northeast States and Caribbean Islands Regional Water Program: Combining Research, Extension and Education to Improve Water Quality

Our Goal : To strengthen the research, teaching and Extension capacity of LGUs¹ to deliver outcome-based water programs that educate, empower, and engage agricultural producers, residents, and communities throughout the region.

Who We Are:

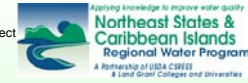
- The Northeast States and Caribbean Island (NESCI) Regional Water Program was funded in Sept. 2008 by CSREES National Integrated Water Quality Program (NIWQP).
- Encompasses EPA Regions 1 and 2 - ME, NH, VT, MA, RI, CT, NY, NJ, Puerto Rico, and the USVI.
- Assumption – the infusion of knowledge and the adoption of best management practices (BMPs) within agricultural, rural, and urbanizing communities will improve the efficiency and effectiveness of water quality protection and improvements.
- Emerges from the combined research, education, and Extension strengths of the LGUs¹ and incorporates stakeholders and partners into a framework to advance the protection and improvement of water quality.

Our Approach:

We create locally relevant programs focused on land and community management through our eight focus areas. We work at local and regional scales to develop, test and refine programs. We work with federal, state, university and local partners to create the mix of resources required to solve real-life water quality problems.

Our Objectives:

- Empower stakeholder participation in regional programs.
- Promote stakeholder-focused research and improve water resource curricula.
- Link CSREES-funded projects into regional programs; expand the geographic impact of project successes.
- Assess and improve coordination and effectiveness of regional programs.
- Provide liaison efforts to federal, state and local agencies and universities to identify issues.
- Develop and launch a NESCI Regional Water Program website.
- Strengthen the NIWQP through the National Water Program Website and participating in national activities.



¹LGUs = Land Grant Universities



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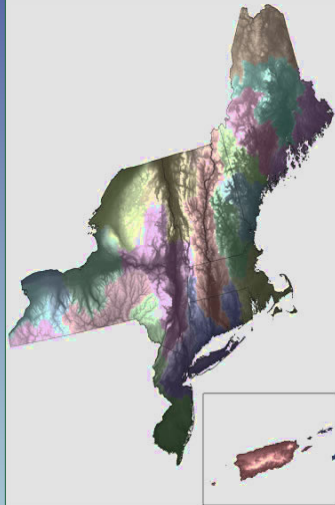
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Focus Area: NEMO

Approach:

- Our NEMO programs leverage considerable research expertise, including nationally recognized experts on topics such as stormwater management, remote sensing and alternative septic systems.
- NEMO assists local volunteer policy makers to protect their water resources through researched-based Extension on a wide range of watershed management topics and the use of geo-spatial and GIS tools.
- NEMO promotes BMPs related to land use planning and site development.

Accomplishments:

- Regional database on the web for water quality BMPs.
- Regional workshops on managing stormwater with Low Impact Development (LID) held in VT, ME, NH, and RI.
- Trainings for municipal decision makers on topics such as on-site wastewater and stormwater management, drinking water protection and LID.
- Regional NEMO programs were featured at the National NEMO Conference.



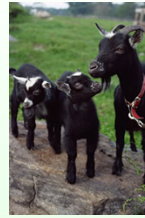
Focus Area: Small Farms Initiative

Approach:

- Integrates well-established and successful programs into other areas of the region.
- Cornell sharing its work to improve feeding regimens as a cost saving method to reduce nutrient pollution.
- Rutgers sharing its on-farm nutrient management certification program for small farmers.

Accomplishments:

- With an Extension Education grant, URI is developing an educational program for small acreage livestock owners and managers focusing on pollution prevention BMPs.
- A national training program for small farm regulators and technical assistance providers was piloted in New Jersey in March 2008. It will be made available in modular format and customized throughout the region. These materials will be distributed through the National Livestock and Poultry Environmental Learning Center's website and webcasts. It is part of the national eXtension Animal Manure Management Initiative. Small Farms Team, led by faculty from Rutgers and North Carolina State University



Focus Area: Sustainable Landscaping

Approach:

- Promote "smart" landscaping techniques to reduce polluted runoff and groundwater contamination by promoting infiltration and filtration BMPs, such as rain gardens.
- Demonstration sites, publications, websites, workshops and involvement of trained volunteers.
- Research on various aspects of buffer effectiveness and nutrient and water management.
- Social science research to understand human knowledge, attitudes, values and behaviors related to landscaping and water quality and quantity protection.

Accomplishments:

- Demonstration site teaching tools were developed in low-input turf species, rain gardens and buffers.
- Homeowners reduced the application of excess nutrients throughout the region.
- Turf nutrient management recommendations specific to northern and southern New England have been compiled.
- Master Gardener volunteers were trained to promote sustainable landscape techniques that protect water quality.
- An effort piloted by Rutgers, with leveraged support from New Jersey Sea Grant and soon to be expanded within the region, empowered local stakeholders to educate and support the installation of rain gardens by private property owners.



Focus Area: Watershed Assessment

Approach:

- Bring together LGU expertise, momentum and partnerships in watershed modeling and volunteer water quality monitoring to help stakeholders identify critical areas for protection, pollution abatement and restoration.
- Promotes volunteer water quality monitoring programs that encompass over 3,500 volunteers and address many local concerns.
- Promotes geo-spatial decision support models to target management practices on many scales.
- Cornell expanding the use of its Variable Source Area (VSA) hydrologic approach to target specific "Critical Management Zones".
- UNH's GIS Watershed Resources Inventory and Following the Flow NPS site assessment tool expanding regionally.

Accomplishments:

- Contributed important data and information to decision makers to help solve pollution problems in Maine coastal communities. By providing data for areas where none had been available, volunteer monitors enabled the State to open 100,000 acres of clam flats.
- Watershed restoration and protection plans were prepared in New Jersey in combination with educational and technical working groups.
- Work between URI, UConn, ASU and Cary Institute of Ecosystem Studies is developing an environmental spatial decision support system for local watershed managers to evaluate the extent and location of nitrogen (N) sinks within stream reach ecosystems. Decision makers and landowners will target BMPs in areas that lack N sinks and protect critical areas with important N sinks.



Focus Area: The Islands Initiative

Approach:

- Harness the expertise of select focus areas to address stakeholder needs within the unique climate, geography and culture of the Islands.
- Build upon on-going island-centered projects involving students and faculty in creating demonstration/training sites and Extension curricula. Strengthen connections between UPR and UVI.
- Programs at sister institutions of the northeast, including the New England Onsite Wastewater Treatment Program at URI and the Small Farms Initiative at Rutgers, will assist the Islands in drawing on expertise from national networks, such as the Consortium of Institutes for Decentralized Wastewater Treatment and the National Livestock and Poultry Environmental Learning Center.

Accomplishments:

- UPR and UVI collaborated to address animal waste management issues on small farms. Two demonstration facilities have been designed and are under construction in St. Croix, VI.
- In Puerto Rico, a demonstration alternative onsite wastewater system was constructed and used for training.
- A \$1.3 million CEAP project is establishing a long-term research and monitoring program for Jobs Bay to manage agricultural landscapes for environmental quality.



Focus Area: Onsite Wastewater Management

Approach:

- Educate homeowners, surveyors, installers, designers and public health officials on proper selection, installation, use and maintenance of innovative and alternative treatment technologies.
- The New England Onsite Wastewater Treatment Program (NEOWTP) is the key regional center that provides training and expertise to these stakeholders.
- NEOWTP works closely with a national network in the Consortium of Institutes for Decentralized Wastewater Treatment to generate a state of the science portfolio of training materials.

Accomplishments:

- Provided over 40 courses annually for over 4,500 wastewater professionals and municipal officials.
- Training materials and regulatory guidance documents related to siting, design, installation and alternative technologies were developed and distributed.
- Rutgers has launched a new onsite wastewater treatment system management initiative to expand technical support to municipalities.
- UVI and UPR offer workshops for homeowners, architects and engineers who are installing OWTS and track the success of these programs.
- UPR, UVI and Rutgers are all working on developing OWTS management pilot projects.



Focus Area: Drinking Water and Private Wells

Approach:

- Our LGUs have a long history of effective programming in Home*A*Syst and source water protection for private drinking water supplies.
- Use a mix of educational and research tools and methods (Home*A*Syst, Watershed Stewards, Master Gardeners, well water sampling).
- Build upon the New England Private Well Initiative's successes and expand into and incorporate efforts from Region 2.
- Coordinate with Region 3's Master Well Owner Network and explore piloting inter-regional programming opportunities.

Accomplishments

- Thousands of individuals have had their well water tested.
- Evaluations from URI indicate that 55 percent of workshop attendees now test their water and 63 percent share well program information with others.
- As part of eXtension, developing national management materials.
- 2009 Private Well Symposium being planned.



NESCI Focus Areas: Water Quality and Production Agriculture

Approach:

- Train farmers on research-based nutrient and pesticide management and animal waste management.
- Research cropping systems to produce high quality forages with sustainable inputs, minimal energy inputs and manageable pest pressure to reduce the risks of offsite contamination from animal agriculture.
- Develop and promote improved nutrient management planning tools.
- Develop tools to help farmers know when nutrient applications are accurate.
- Educate consultants who work directly with farmers to adopt effective cropping systems.
- Initiate intra-regional discussion and training on water conservation.

Accomplishments:

- Over 600 farmers used manure management practices on over 104,000 acres.
- Over 300 farmers implemented 10 pest management practices on 53,000 acres.
- Thirty farms have taken a five-week course and 28 farms have developed plans on over 14,000 acres.
- 50% of the farmers expected to apply less N and phosphorus and 67 percent expect to save money. This curriculum is available to all states in the region.

