WETLAND REGULATION AND PROTECTION
STATUS AND TRENDS

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INTRODUCTION

The Rhode Island Department of Environmental Management (DEM) supported by the Environmental Protection Agency (EPA) continued to administer and enforce wetland laws, promulgated and implemented revised regulations, and undertook or completed grant-funded projects intended to build the wetland program in core areas with the assistance of the University of Rhode Island (URI), the New England Interstate Water Pollution Control Commission (NEIWPCC), the Rhode Island Natural History Survey (RINHS) and others . Work undertaken by other DEM offices, and by Federal, state, and local organizations, including the U.S. Army Corps of Engineers and Coastal Resources Management Council (CRMC), all contribute to ensure protection of freshwater and coastal wetlands in Rhode Island.

Vegetated freshwater wetlands and small open water bodies cover approximately 16 percent of the state's surface area (NEIWPCC and DEM 2006; Miller and Golet 2001) and are essential to healthy watersheds. Widely dispersed across the landscape and varying in size and type, wetlands provide many important benefits and services: fish and wildlife habitat, floodwater storage and protection, groundwater recharge, water quality protection and improvement, and recreational opportunities. Many rare native plants and animals in Rhode Island depend on wetlands for survival, such as the yellow lady slipper, American bittern, and the leopard frog.

This report summarizes data on freshwater wetland permits and decisions, associated losses and gains during 2006 and 2007, and the status of program development projects through 2008. Overall, it reveals that while state regulatory programs are effective at limiting the authorized physical loss of wetlands, wetland managers are confronted with challenges in protecting the functions and values of wetlands from the cumulative impacts of land development and from unauthorized losses. In addition, we face obstacles due to the State fiscal constraints.

PERMITS AND DECISIONS

DEM and CRMC regulate activities in and near freshwater wetlands within their respective areas of jurisdiction. Over 90 percent of all the wetland permits granted by the DEM Wetland Program in 2006 and 2007 (300 and 237, respectively) were for projects proposing insignificant alterations to wetlands (Table 1). A total of 32 permits to alter wetlands and nine emergency alteration permits were granted during this period. Twenty *Applications to Alter Freshwater Wetlands* were denied in 2006 and 2007, and 17 applications that were initially denied permits were settled through negotiations with applicants post denial.

In prior status and trends reports (1999, 2002, 2004, and 2007), data regarding the numbers of permits granted per project type were presented and discussed to identify projects and activities that may threaten Rhode Island's freshwater wetlands. The data consistently illustrated that the majority of new permits issued were for residential development (new lots, modifications to already developed lots, residential subdivisions, and apartments or condominiums). In the five-year period from 2001 through 2005 there were 638 permits granted for individual residential lots alone, which is 38 percent of the total wetland permits granted by the DEM Wetlands Program (DEM OWR 2007). The data for project types is not included in this report, as Rhode

Island is beginning to implement wetland conditional assessment via development of a rapid stressor assessment approach on a watershed basis.

Table 1. Freshwater wetlands permit decisions by DEM in 2006 and 2007 (DEM WPP 2008, Foxpro 2009).		
Permit Types	2006	2007
Insignificant alterations	300	237
Permits to alter	13	19
Permit settlements	8	9
Emergency permits	5	4
Total permits granted	325	263
Total permits denied	10	10

Rhode Island construction, including residential, slowed during the reporting period with the number of single family building permits declining nine percent in 2006 and 2007 (J. Kostrzewa, Providence Journal, 2/19/08, citing the RI Builder's Association). The building slowdown was also reflected in the number of wetland permits granted which were 100 fewer in 2006 and 2007 than in 2004 and 2005 (DEM OWR 2007).

In addition to the issuance of permits, the DEM Wetlands Program completed other decisions in response to applications including determinations of whether regulated wetlands were present, identification of the types of wetlands, and confirmation that wetland edges delineated by applicants were accurate (Table 2). All of these decisions provide a service to builders, municipal officials, and property owners who wish to develop their land while ensuring that wetlands are protected.

Table 2. Other programmatic decisions in 2006 and 2007 (DEM WPP 2008).		
Decisions	2006	2007
Determined wetland presence and type, or verified wetland edges	73	81
Renewed, modified, or transferred permits or decided permits were not eligible for renewal or modification.	141	94
Found that proposed projects were significant alterations	44	24
Found that proposed projects were not under jurisdiction, or that there were no wetlands present	83	66
NEW: Request for regulatory applicability (effective 06/01/07)	0	25
Total non-permit decisions	341	290

The Request for Regulatory Applicability is a new application type introduced in June 2007 to facilitate an applicant's receiving a decision from the DEM regarding the applicability of the rules to a proposed project (Rule 8.04). Excluding this application type, total applications received in the four primary categories (Determinations of Presence, Edge Verifications, Preliminary Determinations, and Applications to Alter) declined 22 percent from 2005 to 2007 (R.Chateauneuf, pers.comm. Oct. 2008).

Once permits are issued, achieving effective wetland protection is contingent on projects being developed in a manner consistent with approved plans and permit conditions. DEM continued to emphasize the importance of permit compliance by conducting permit compliance inspections. Permitting staff met program targets by conducting 98 and 101 permit compliance inspections respectively during 2006 and 2007, oftentimes associated with requests for permit renewals or modifications. A total of 26 projects (14 and 12, respectively for 2006 and 2007) were in non-conformance with their permits or approved plans, representing 13 percent of those sites inspected. DEM will be continuing inspection activities.

A project to gather data and assess adherence to permit conditions and plans over time is ongoing. Administrative and field conditions, including designated limits of disturbance, are being assessed for 100 randomly selected commercial/industrial projects and residential subdivisions in northern Rhode Island. The selected projects were all permitted during a ten-year period between 1994 to 2006. To date, all projects have been visited once, and follow-up inspections of individual residential lots with wetlands are scheduled for the spring 2009.

PERMITTED LOSSES AND GAINS

Rhode Island has adopted a goal of no-net loss of wetlands consistent with that established by the federal government. The agencies implement this goal by adhering to strong avoidance and minimization requirements spelled out in the rules. During the ten years that the DEM has been reporting permitted wetland losses, the state has approached, but not yet achieved, this no net loss goal. Based on available data, it is evident that the regulatory programs are minimizing permitted losses. The State is aware that greater losses occur due to unauthorized alterations. While some of this loss is identified via compliance programs, not all losses are necessarily reported or known, and as a result the State is not able to fully quantify these unauthorized losses.

In 2006, six-tenths (0.6) acres of loss were permitted associated with 15 insignificant alteration permits or permits to alter freshwater wetlands and one permit settlement (FoxPro 2008). The seven applications to alter that involved loss were for new roads or driveway crossings for new residential subdivisions or new single house lots. The area of loss per wetland crossing ranged from 436 square feet to 4356 square feet. In 2007, nine-tenths (0.9) acres of loss were permitted associated with 12 permits and one permit settlement. The project types associated with the losses in 2007 were new residential subdivisions, new single residential lots, apartments/condominiums, new roads, and road reconstruction. The minimal area of permitted loss results from strong adherence to avoidance and minimization requirements in the Rules as implemented by expert staff.

Research revealed that in 2006 DEM negotiated settlements with eight applicants whose *Applications to Alter Freshwater Wetlands* had been initially denied because the proposed alterations were determined to be detrimental to wetland functions and values (FoxPro 2009). Similarly, in 2007, nine applications were settled through negotiations with applicants post denial. FoxPro reported losses associated with two of the 17 settled applications (included

above). Some of the settled applications may involve alteration of the perimeter wetland, riverbank wetland, or floodplain only and not loss of wetland proper. Further data about these settled applications will be provided in the next status and trends report (due 04/2010) as determined by review of final settled files and site plans. Ten of the 17 settled applications were for new residential lots (FoxPro 2009).

The last status and trends report (2007) indicated that data would be obtained regarding the number of activities undertaken by farmers in wetlands, or the extent of loss or gain associated with farming-related projects or applications, however, this information was not pursued due to workload constraints. According to State law (R.I.G.L. Section 2-1-22 (i-j)), normal farming and ranching activities carried out by farmers are permissible at the discretion of farmers in accordance with best management practices, and provided that adverse effects to wetlands are minimized. In the case of construction of new farm facilities, such as ponds, drainage structures, or roads, the DEM Division of Agriculture is the lead permitting authority, provided that the project will not result in a significant alteration of wetlands, in which case permitting authority rests with the DEM Wetlands Program.

Since August 1999, CRMC has regulated activities within freshwater wetlands in the vicinity of the coast and has provided data for each year in the reporting period (Table 3).

Table 3. Losses and gains of freshwater wetlands in the vicinity of the coast permitted by CRMC (acres) (CRMC 2008).

Years	Permitted Loss	Permitted Gain
2006 and 2007	0.08 acres	0.00 acres (Salt marsh gain)

In summary, DEM and CRMC permitting programs, working in cooperation with the federal regulatory agencies through the State General Programmatic Permit (2007), continue to be effective at limiting the unavoidable loss of freshwater wetlands. Neither agency has reported substantial freshwater wetland gains either proactively or in association with development projects. DEM does not require compensation of unavoidable freshwater wetland losses but does permit compensation based on federal requirements. The CRMC requires compensation for loss of coastal and freshwater wetland according to the Coastal Resources Management Program Section 300.12 (1996 and 2005). There is no comprehensive data from either agency regarding the extent of permitted alteration of the adjacent 50-foot perimeter and the riverbank wetland areas.

COMPLIANCE AND INSPECTION

The DEM Office of Compliance and Inspection (OCI) Wetland Compliance Program responds to complaints received from the public and investigates unauthorized alterations such as cutting, clearing, grading, filling, excavating, and construction within wetland areas. The Program has received a total of 985 wetland complaints in the two-year reporting period (Table 4). There were a total of 426 unfounded complaints (where no violations were found) or complaints that resulted in no action taken (very minor alterations were found). Table 4 summarizes the number

of complaints received, actions taken and not taken, and penalties collected during 2006 and 2007. OCI had four biologists trained to identify and delineate wetlands until mid-2006 at which time it dropped to 3 biologists. Staff persons from other OCI water programs are employed as needed to assist with investigating wetland complaints that do not involve wetland identification or delineation.

Table 4. Freshwater wetland complaints and enforcement actions by DEM in 2006 and 2007 (DEM OCI 2008).		
Complaints	*2006*	*2007*
Complaints received	555	430
Number of unfounded complaints	155	101
Number of no action taken (minor violation)	89	81
Number of investigations	432	320
Total inspections	850	690
Enforcement Actions	*2006*	*2007*
Informal actions issued*	51	28
Formal actions issued **	7	17
Total actions	58	45
Penalties collected	$38, 925.	$67,435.

* Informal actions do not result in an enforceable order or assessment of a penalty. For the most part, these actions include warning letters, letters of noncompliance, and Notices of Intent to Enforce.

** Formal actions are usually in the form of a Notice of Violation (NOV) that are recorded in the land evidence records of the appropriate Town or City. Such actions advise the respondent of the alleged facts surrounding the case, the statutes and regulations that are alleged to have been violated, the requirements necessary to meet compliance, and the assessment of an administrative penalty.

The Program tracks the area of unauthorized alteration of wetland and the area that is restored once the alteration has been halted (Table 5). The most common unauthorized alteration is clearing. As a result, most restorations require the respondent to allow an area to naturally revegetate. The more serious violations require the removal of structures and fill and the extensive planting and stabilization of the altered wetland (DEM OCI 2005). There were 41 and 17 restorations completed in 2006 and 2007, respectively (Table 5).

Approximately 53 acres of freshwater wetland were altered by clearing, grubbing, filling or draining without a permit during the years 2006 and 2007. More than 18 acres of freshwater wetland were restored (Table 5). The restored acreage also correlates with violations from previous years because of the time it takes to enforce and complete restoration. This data reinforces the importance of permit and complaint inspections to help reduce unauthorized alterations. It is difficult to assess the impact of the temporary loss of wetland functions while an area is revegetating.

Table 5. Areas of unauthorized alteration and restoration in 2006 and 2007 (acres) (DEM OCI 2008).		
Unauthorized alterations	*2006*	*2007*
Wetland, including rivers and streams, and perimeter, riverbank, and floodplain wetland	33.4	19.5
Restorations	*2006*	*2007*
Number of restorations	41	17
Wetland	8.4	1.2
Perimeter, riverbank, and floodplain wetland	7.1	1.5

REGULATIONS AND POLICY

The Department of the Army and State of Rhode Island Programmatic General Permit (PGP) was reissued in February 2007 for another five years. "Up to 98 percent of all permits issued in New England are PGPs (USACE NED 2009)." Department of the Army permits are required from the Corps of Engineers, New England Division, under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. The Corps reviews permit applications for work in navigable waters under Section 10 and the discharge of fill materials in all waters, including wetlands, under Section 404.

The DEM *Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act* were revised in June 2007 via a comprehensive multi-year project with the overall objective of making them more transparent to all users, and to introduce some new provisions and procedures aimed at improving processing. DEM convened members of the Task Force for the final meeting in July 2006 to present and solicit comments on the draft Rules before proceeding to public notice in January 2007. The notice was extended in response to a request from the public and a public hearing was conducted during which one person, on behalf of the Rhode Island Builder's Association, introduced comments into the record. Thirteen persons submitted written comments, all of which were considered, and further revisions were made to the Rules prior to the final promulgation in June 2007. Following are some highlights of the Rule revisions:

- The administrative findings were revised to clearly state the public policy of the State of Rhode Island, which is to preserve wetland purity and integrity, and to describe the functions and values that wetlands perform (Rule 2.20).
- The Rule contents were largely organized around application types and requirements to assist the reader in determining whether he or she needs to apply for a wetland permit and, if so, what is required and how the Department will evaluate the application (see Table of Contents).
- Definitions were reworked (Rule 4.00) and defined terms were italicized where used in the Rules for easy cross-referencing.
- The available application types and decisions (Rule 5.02), as well as prohibitions, were succinctly presented and serve as guide to what follows in the Rules.

- General application requirements were consolidated in a single rule (Rule 7.00) to assist applicants in preparing complete applications. In some instances the Rules spell out where, for example, a site plan or wetland flagging may not be required (Rules 7.03 and 7.04).
- Procedures for preapplication meetings and for coordination with municipalities and the DEM OWTS program were added (Rule 7.07).
- The application fee calculations were simplified, and more flat fees were introduced with an overall goal of remaining revenue neutral (Rule 7.11).
- A new application type, *Request for Regulatory Applicability*, was developed to facilitate an applicant's receiving a decision from the Department regarding the applicability of the rules to a proposed project (Rule 8.04).
- The specific requirements for the *Request for Preliminary Determination* application were sharpened and consolidated including the avoidance and minimization requirements and the application review and decision-making criteria (Rule 9.00).
- New permit exemptions were incorporated for planting projects in perimeter and riverbank wetland (Rule 6.18), dam maintenance and repair (Rule 6.19), and invasive species control projects to promote growth of native vegetation (Rule 6.02 L).

Concurrent with the Rule promulgation, guidance and procedures have been developed regarding two special project types that trigger wetland permit requirements:

1) Pre-Application Guidance For Those Seeking A Groundwater Withdrawal Permit for > 10,000 GPD (Dec. 2006) is available at http://www.dem.ri.gov/programs/benviron/water/withdraw/pdf/guidance.pdf;
2) Aquatic invasive species management is available at http://www.dem.ri.gov/programs/benviron/water/wetlands/ponds.htm.

The DEM and CRMC continued to coordinate, primarily at the managerial and supervisory levels, about the freshwater wetland jurisdictional division that has been in place since August 1999. The agencies are also co-developing major revisions to the RI Stormwater Manual favoring a low impact development approach which will be implemented at the State level largely through wetland and water resource permitting, in addition to at the local level.

MONITORING AND ASSESSMENT

Rhode Island made considerable progress during this reporting period by taking steps to implement the State's first plan for monitoring and assessment of wetlands (NEIWPCC and DEM 2006). Systematic monitoring and assessment of wetland condition will, over time, produce necessary data to help evaluate management decisions for wetland protection. In the longer term, it is essential to understand cumulative impacts to wetlands, which result from land-use changes, loss of protective buffers, invasive species, water withdrawals, and other factors.

DEM previously reported that in the first year of implementation in 2006, NEIWPCC scientists assisted DEM and selected two rapid wetland assessment methods to pilot on publicly owned wetlands primarily in the Woonasquatucket River watershed (Table 6). Over 500 acres of

Table 6. Development and implementation of rapid conditional assessment in Rhode Island.					
Field Year	With	Watershed	Objective	Wetland Assessment Units (WAU)	Area Assessed (acres)
2006	NEIWPCC	Woonasquatucket	Test ORAM* and DERAP*	27	543
2007	RINHS	Upper Pawcatuck	Tailor ORAM and DERAP	58	1250
2008	RINHS	Hunt River & Pawtuxet Subbasins; & Statewide	Trial RI RAM* V1 (& V2); Validate V1 w/ Tier 3 data	50 and 36	472
				171	2265
*ORAM is Ohio Rapid Assessment method; DERAP is Delaware Rapid Assessment Protocol; and RI RAM is Rhode Island Rapid Assessment Method					

wetland were assessed via the rapid methods. The DEM subsequently engaged the RI Natural History Survey, beginning in 2007 through the present, to work with the DEM to continue to build a wetland-monitoring program by developing and testing RI specific rapid methods on public land on a rotating basin approach.

An analysis of the utility of the rapid methods to address the State monitoring and assessment objectives will be incorporated with the results of the 2008 field season, including consideration of buffer zones and the presence of invasive species in wetlands. Additionally, the U.S. Fish and Wildlife have drafted National Wetland Inventory map updates for Rhode Island and their availability is pending field checking (R. Tiner, U.S.F.W.S., pers. comm. 2008).

VULNERABLE WETLANDS: VERNAL POOLS

Vernal pools are especially vulnerable wetlands due to their small size and seasonal nature, which are also features that contribute to their value as breeding sites for certain amphibians. The wetland Rules were revised in 1994 to include the term, *special aquatic site,* which is "a body of open standing water … which does not meet the definition of pond but which is capable of supporting and providing habitat for aquatic life forms." Following, several projects were accomplished with the goal of improving the understanding and protection of vernal pools and their surrounding habitats (Table 7).

Recognizing that wetland regulation provides some protection for vernal pools and less for the upland habitat necessary for vernal pool-breeding amphibians, the DEM dedicated grant funds to development of a watershed-based plan for assessment and prioritization of vernal pool protection by URI CELS scientists largely based on hydroperiod length (Mitchell et. al. Rev. 2009). This is one of several projects to utilize the photodelineations of potential pools identified above. This project assessed 135 wetlands resulting in the identification of 102 vernal pools and 33 fishponds in the Queen's River watershed. One thousand eight hundred and sixty five acres were prioritized for protection, including 50 acres of vernal pool and 950 acres of upland habitat

Table 7. Prior Rhode Island vernal pool protection projects.		
Year	Project participants	Product
1998	US EPA Region 1, URI Department of Natural Resources Science, and RI DEM Office of Water Resources	Report: *Development of Revisions to the State of RI Freshwater Wetland Regulation*s Task 4. Criteria for Identification and Determination of the Ecological Significance of Individual Seasonal Ponds (C. Murphy and F. Golet).
1999	US EPA Region 1, URI Cooperative Extension , The RI Chapter of The Nature Conservancy, and Contractor	Photodelineations: Potential vernal pools in the Wood-Pawcatuck River watershed, RI, classified # 1- 4 (J. Stone and J. Regosin).
2000 2002	US EPA Region 1, RI DEM Wetlands Program	Public presentations: RI DEM Open Houses *Identifying and Protecting Vernal Pools*
2001	The Forest and Wood Products Institute, Southern New England Logger Ed Program, RI DEM Office of Water Resources, and RI Association of Wetland Scientists	Workshop: RI Wetland Regulations for Loggers *Identifying and Protecting Vernal Pools* presentation (C. Horbert, C. Murphy)
2001	US EPA Region 1, URI College of Environment and Life Sciences, and RI DEM Office of Water Resources	WebPages: Rhode Island Vernal Pools (RIVP) (C.E.Heinz, S. Egan, and P. Paton)
2003	US EPA Region 1, RI DEM Division of Fish and Wildlife, URI College of Environment and Life Sciences, and RI DEM Office of Water Resources	Database and GIS: 20 Years of Statewide field records and observations (C. Raithell and URI)

corridor. Project results were presented to municipal officials and conservationists in a meeting in January 2008.

General vernal pool information is available on the DEM website at http://www.dem.ri.gov/programs/benviron/water/wetlands/vernal.htm.
Project specific information is available at http://www.dem.ri.gov/programs/benviron/water/wetlands/queenrvr.htm

The DEM has also embarked on a project, initially with the NEIWPCC, to verify the photodelineations of potential pools mapped in nine towns within the Wood-Pawcatuck River watershed. The project aims to visit and verify the status of almost 700 potential pools by DEM staff biologists and volunteers from the Wood-Pawcatuck Association. Year 1 results are presented in Table 8. Map products will be produced.

Table 8. Protecting vernal pools: Mapping and linkages in the Wood-Pawcatuck River watershed, Rhode Island, Year 1 field results (NEIWPCC and DEM 2008).	
Description of Activity	Number of Pools
Study pools meeting the selection criteria	678
Potential pools visited by DEM or WPWA volunteers	397
➢ Potential pools confirmed positive or negative	261
➢ Potential pools unconfirmed - were visited by WPWA volunteers - were visited by DEM biologists	136 - 60 - 76
Potential pools not visited bcz access denied (permission not granted, posted, fenced, other)	74
Potential pools not visited (not attempted)	207
New pools identified and described by field inspectors	29

RESTORATION

The DEM Water Quality/Wetland Restoration Team was publicly announced in 2006 and quickly became a focal point for project proponents seeking permitting assistance. The Team provides dedicated preapplication assistance to encourage restoration projects, to optimize restoration goals, and to ensure projects meet regulatory requirements. The Team coordinates with the regulatory staff at the CRMC and the US Army Corps of Engineers as needed. The Team has reviewed and assisted with approximately 30 projects since its inception (L. McGreavy, pers. comm., 10/8/08, DEM), largely buffer planting projects, invasive species control projects, and river restorations via installation of fish ladders or removal of dams (Table 8).

The *Strategic Plan for the Restoration of Anadromous Fish to Rhode Island* (DEM 2002) has identified priorities for freshwater habitat for andromous fish. Based on a reconnaissance study of restoration opportunities by the Army Corps New England District, the DEM prioritized restoration along the Ten-Mile River as a high priority. American shad, alewives, and blueback herring are targeted for restoration via construction of fishways at the three lowest dams on the River. The project proponents for these and numerous other fish restoration projects have pursued and received preapplication assistance through the Team during the reporting period (2008). Restoration activities at urban rivers bring their own set of challenges to the permitting of these projects.

Table 9. River and fish restoration projects that have been presented to the Team for preapplication assistance (L. McGreavy, pers. comm., 2008)		
Watercourse	Project	Location
Woonasquatucket River	Dyerville dam removal	Providence
Woonasquatucket River	Paragon partial dam removal	Providence
Woonasquatucket River	Manton dam	Providence
Woonasquatucket River	Rising Sun Mills dam fish ladder	Providence
Woonasquatucket River	Riverside (Atlantic) Mills fish ladder	Providence
Blackstone River	Main Street dam fish ladder	Pawtucket
Blackstone River	Old Slater Mill dam fish ladder	Pawtucket
Pawcatuck River	Bradford dam fish ladder modif.	Westerly
Pawtuxet River	Pawtuxet Village partial dam removal	Warwick and Cranston
Ten Mile River	Omega Pond dam fish ladder	East Providence
Ten Mile River	Hunts Mill dam fish ladder	East Providence
Ten Mile River	Turner Reservior dam fish ladder	East Providence

The CRMC, with the assistance of the Technical Advisory Committee, continues to administer the *Coastal and Estuary Habitat Restoration Program and Trust Fund* (R.I.G.L. Section 46-23.1) that is funded by an annual legislative appropriation. Grants for riparian buffer restoration have been provided by DEM via administration of the *Narragansett Bay and Watershed Protection Bond* approved by voters in 2004. In 2006, DEM awarded $153,925 in grants for eight projects and in 2007 awarded $162,200 for seven projects. The grants will benefit numerous wetlands and watercourses including Cedar Swamp (Charlestown), Bailey Brook (Middletown), Stillwater River (Smithfield), and the Woonasquatucket River (Providence). Many of the projects include invasive species management prior to installation of native plantings.

DEM and others' websites have provided news releases, summaries and photographs of several sizable and noteworthy wetland restoration projects undertaken and completed during the reporting period, including at Lonsdale Marsh, Lincoln and at Town Pond, Portsmouth. Salt water was introduced to the restored pond in September 2007 to restore over 20 acres of salt pond and salt marsh (US ACE 2008).

OUTREACH AND TRAINING

Outreach has continued to play an important role in the wetlands program during the reporting period. The DEM Wetlands Program, with the assistance of NEIWPCC staff beginning in June 2007, has been involved in many successful outreach activities supporting the regulatory program, wetland education and protection, and restoration.

Following the promulgation of new wetlands Rules on June 1, 2007, DEM's outreach materials were reviewed and updated to align with the current Rules and practices. This included the

revision of 11 fact sheets, 6 guidance documents, and a fact sheet and brochure on DEM-CRMC jurisdiction. Approximately 3,000 of these updated documents have been disseminated in the last year through workshops and general distribution at DEM Headquarters. In addition, the wetland-permitting guide ("What's the Scoop on Wetlands?") underwent a comprehensive review and revision to bring its contents up to date. DEM has posted all of these outreach materials for the public on its new user-friendly web page (http://www.dem.ri.gov/topics/wetlands.htm).

DEM hosted two wetlands workshops during the reporting period. The December 2007 workshop, entitled "Strategies for Success," aimed to provide consultants with information to improve compliance with avoidance and minimization requirements, the completeness of wetlands permit applications, and the predictability of outcomes. The workshop proved to be a positive experience for all involved. Participants were interested, engaged, and appreciative of the learning opportunity, reporting that their personal objectives were met and that they felt better equipped to complete wetland applications. There were 65 attendees at the training session, representing 39 consulting companies.

The May 2008 workshop for municipal officials, "Partnering for Protection," set out to provide an opportunity for information exchange about wetland permitting procedures and protection. The session was well received by planners, building officials, public works directors and town engineers, with 57 participants representing 33 of Rhode Island's 39 cities and towns.

By partnering with the Northern Rhode Island Conservation District (NRICD), DEM has sought to increase awareness among homeowners living adjacent to wetlands on how best to protect the functions and values of wetlands while utilizing their property. Initial efforts have been focused in the towns of Burrillville and Smithfield. Within this partnership, two educational brochures for homeowners have been created on the topics of backyard wetlands and invasive plants in wetlands. Working with area schools, NRICD also produced a 2009 educational wetlands calendar highlighting the artwork of local students in grades 3 - 8. A spring 2009 educational program is being planned to demonstrate and promote natural landscapes and native species planting near wetlands and streams.

Having learned that the majority of restoration opportunities exist on privately owned land, DEM is in the process of creating a wetland restoration kit for landowners to encourage wetland restoration and riparian buffer protection. The kit will provide background information about the benefits of restoration and projects types, and it will also outline important aspects of a successful restoration project, including planning, design, permitting, implementation, and monitoring.

Additionally, the role of outreach in the wetlands program has been a valuable asset to other ongoing program efforts. Informational door hangers and flyers were created in the summer of 2007 to support the field component of the outcomes project. To assist the program's efforts to verify vernal pools within the Wood-Pawcatuck watershed during the spring of 2008, outreach staff developed an educational vernal pool brochure, assisted in the production of volunteer materials and a project flyer, and created a tracking chart to document progress.

CONCLUSION

Rhode Island has continued to implement and build a comprehensive wetlands program. Overall, the DEM and CRMC, with the federal regulatory programs, promote policies to minimize adverse impacts on wetlands and are successful in limiting authorized direct loss of wetland. There are challenges in protecting wetland functions and values from cumulative impacts of land development and from unauthorized alterations. Achieving effective wetland protection is also contingent on projects being constructed in a manner that is consistent with the approved plans and permit conditions. The State is aware that unauthorized wetland alterations do occur and that some loss may be unknown and undetectable. The programs are challenged by limited financial and human resources. With competitive funding from EPA for special projects and with the assistance of NEIWPCC, the University, the RINHS, and other partners, Rhode Island will continue to pursue regulatory improvements, build on successful outreach, and implement rapid assessment methodologies to improve clarity and procedures, to provide tools, to understand wetland condition and to develop policies for improved protection.