

Nonpoint Source Management Program 2013 Annual Report

June 2014



Contact: Don Witherill, Director Division of
Environmental Assessment
Phone: (207) 215-9751



MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 State House Station | Augusta, Maine 04330-0017
www.maine.gov/dep

Executive Summary

This report summarizes activities and accomplishments of the Maine Department of Environmental Protection's Nonpoint Source Program in 2013. The NPS Program is funded, in part, under Section 319 of the Clean Water Act (CWA) by the U.S. Environmental Protection Agency (EPA). The Department prepared this report to inform the public and EPA about Maine's progress controlling nonpoint source (NPS) water pollution. NPS pollution is a major source of water quality impact to Maine's lakes, rivers, streams, and coastal waters. The Department coordinates Maine's Nonpoint Source Pollution Program to achieve widespread use of state-agency defined "best management practice guidelines" (BMPs) to prevent NPS pollution.

In order to protect or restore clean water the Maine DEP's NPS program provides grants to help communities assess NPS water quality problems and take action to implement BMPs that prevent NPS pollution. Section D of this document provides an overview of several statewide NPS programs and their accomplishments. These include the NPS Training and Resource Center; the Maine Volunteer Lake Monitoring Program; and the Volunteer River Monitoring Program.

The Department uses a watershed-based approach as the coordinating framework to organize public and private sector efforts to identify, prioritize, and then implement activities to restore or protect waters. A pass-thru grants program is administered that awards and monitors sub-grants of federal CWA Section 319 & 604b funds for watershed projects to help restore or protect lakes, streams, rivers or coastal waters from NPS pollution. These grants help communities identify nonpoint water pollution sources, prepare watershed-based management plans, and take action to reduce or prevent NPS pollution. The Department provided NPS grants for 15 new watershed projects.

Twelve NPS watershed projects funded through the NPS Grants program in previous years were successfully brought to completion in 2013. This report provides a two-page outcome summary of each completed project. These projects reduced pollutant loads to waterbodies by 289 tons of sediment and 251 pounds of phosphorus per year. DEP provided technical assistance and granted \$640,894 of Federal Clean Water Act funds for the projects. Grantees, partners, and landowners contributed matching funds or services valued at \$801,184.

The Maine NPS program completed a first draft of an updated State of Maine NPS Program Management Plan for the years 2015 to 2019. The management plan provides updated goals, framework, and guidance for the continued successful implementation of Maine's NPS Program. The management plan will be completed in 2014.

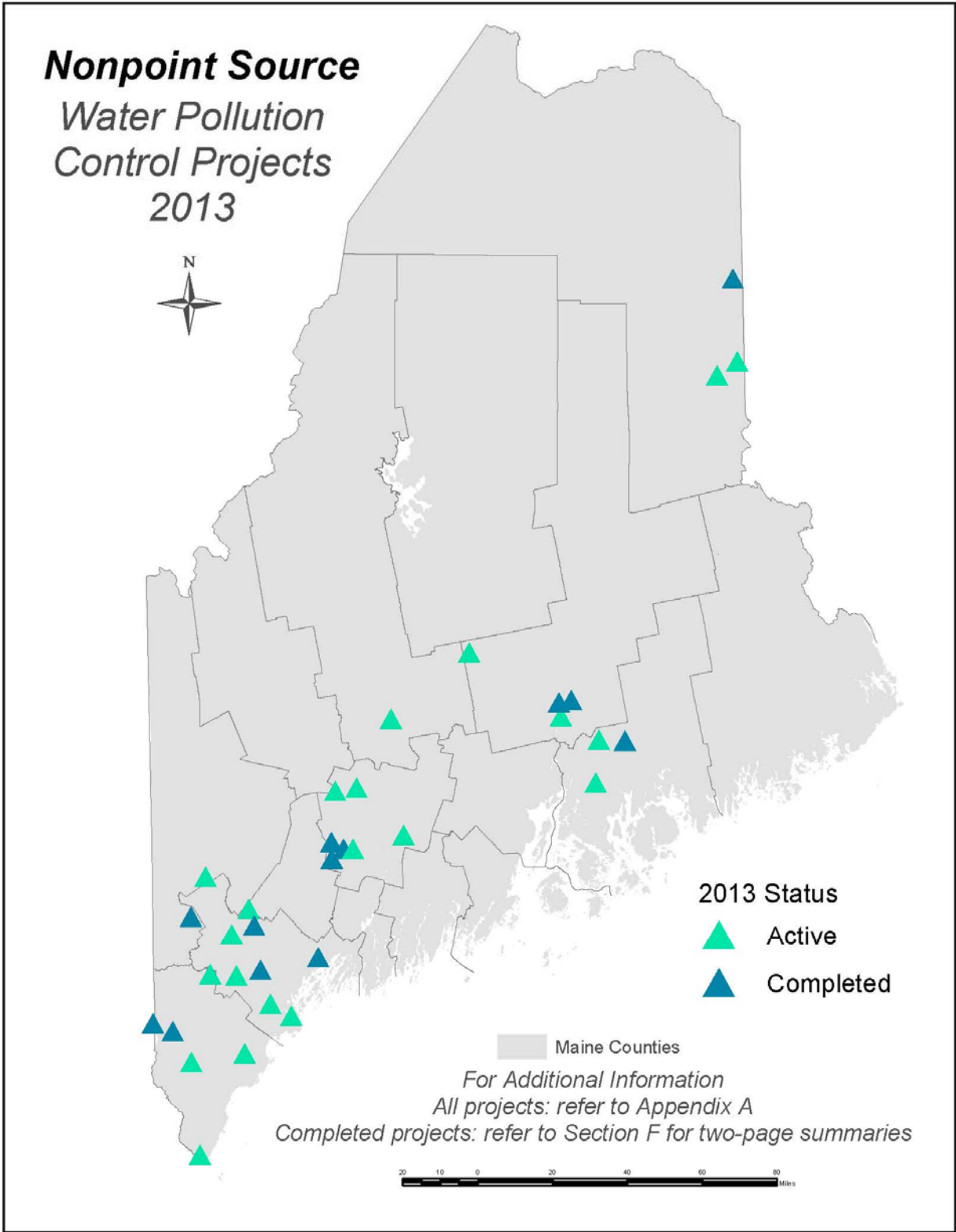
Table of Contents

<u>Map of NPS Water Pollution Control Projects Active in 2013</u>	1
A. <u>Nonpoint Source Management Program</u>	2
B. <u>2013 Highlights - Maine DEP NPS Program</u>	2
C. <u>Maine NPS Management Program Overview</u>	4
1. Protecting Clean Waters	
2. Restoring NPS Impaired Waters	
3. NPS Pollutant Load Reduction	
D. <u>DEP NPS Program & Work Activities</u>	10
1. Section 319 Grant Award	
2. NPS Program Activities	
3. Summaries of Statewide Programs	
E. <u>NPS Grants Program</u>	19
1. Overview of NPS Water Pollution Control Projects	
2. NPS Water Pollution Control Projects Funded in 2013	
3. Request for Proposals - FY 2014 Grants for NPS Pollution Control Projects	
F. <u>Summaries of NPS Water Pollution Control Projects Completed in 2013</u>	22
Appendix A. <u>NPS Watershed Projects Active in 2013</u>	47



This report was funded, in part, by grant funds provided by the U.S. Environmental Protection Agency to the Maine Department of Environmental Protection under Section 319 of the Clean Water Act. Neither EPA nor DEP endorses any commercial product, service or enterprise mentioned in this publication.

NPS Water Pollution Control Projects Active in 2013



A. Nonpoint Source Management Program

Nonpoint source pollution is a major source of water quality impact to Maine's lakes, rivers, streams, and coastal waters. When it rains or the snow melts, the water running off our driveways, parking lots, yards, farm fields, forestry operations, and industrial sites carries hitchhiking pollutants. Pollutants include sediment from erosion; nutrients from fertilizers or animal waste; bacteria from animal waste and failing septic systems; and toxics from dripped or spilled petroleum products. This polluted runoff washes off the land and flows into our waterways.

The Maine Department of Environmental Protection (DEP) coordinates the State of Maine Nonpoint Source Pollution Program (38 MSRA 410) to achieve widespread use of state-agency defined "best management practice guidelines" (BMPs) to prevent NPS pollution. Since 1990, EPA has awarded funds under Section 319 of the Clean Water Act to help states and tribes address their most pressing NPS pollution problems. Section 319 monies help fund a significant portion of Maine's NPS program. NPS program services are guided by the *Maine Nonpoint Source Program: Program Upgrade & 15 Year Strategy* adopted in 1999.

Maine DEP will complete an update of the NPS management plan in 2014. DEP helps communities and watershed groups assess water quality problems and take action to reduce or stop NPS pollution. Section 319 funds are used to provide grants for watershed projects to help local communities identify water pollution sources in watersheds and take action to restore or protect lakes, streams, or coastal waters.



Concord Gully Brook, Freeport

This report summarizes the Nonpoint Source (NPS) Program activity and accomplishments in 2013. The report fulfills annual reporting requirements of Section 319(h) of the Federal Clean Water Act. Each year, DEP prepares this report to inform the public and the U.S. Environmental Protection Agency (EPA) about Maine's progress in controlling NPS water pollution.

B. 2013 Highlights - Maine DEP NPS Program

DEP received a grant award for \$1,726,692 of FFY2013 funds from EPA under Section 319 of the Clean Water Act. Funds were used to fund programs designed to identify, prevent, or reduce NPS pollution problems. DEP provided technical assistance to local watershed groups, and education and outreach programs for various audiences including developers, building contractors, municipal officials, teachers, and the general public. Forty-three percent of the Section 319 funds were passed through to organizations for NPS water pollution control projects. DEP provided technical and financial assistance for 35 NPS projects to help protect or improve lakes, streams, and coastal waters. DEP used Section 319 funds to help support the Maine Volunteer Lake Monitoring Program.

Maine DEP NPS Program Highlights

1. DEP prepared and submitted an updated NPS management plan to EPA for comment. The plan described the State of Maine's NPS water pollution control management programs and a five-year action plan (2014 - 2018) to control NPS pollution to protect and improve Maine's lakes, streams, rivers, and coastal waters.
2. Twelve Nonpoint Source (NPS) Watershed Projects funded through the NPS Grants program in previous years were successfully completed. DEP provided technical assistance and granted \$640,894 of Federal Clean Water Act funds for these projects. Grantees, partners, and landowners contributed matching funds or services valued at over \$890,000. See Section F for project summaries.
 - Nine implementation projects were completed. Best Management Practices (BMPs) were installed to reduce polluted runoff in six lake and three stream watersheds: Annabessacook Lake (Winthrop); Cochnewagon Lake (Monmouth); Crescent Lake (Raymond); Great East & Wilson Ponds (Acton); Moose Pond (Bridgton); Square Pond (Shapleigh); Capehart Brook (Bangor); Penjawoc Stream (Bangor); and the Pleasant River (Windham). These projects reduced pollutant loading to lakes and streams by 251 pounds of phosphorus and 289 tons of sediment per year - equivalent to about 25 dump truck loads.
 - Three NPS watershed surveys were completed: Toddy Pond (Orland); Concord Gully Stream (Freeport); and Upper Prestile Stream (Presque Isle). A NPS watershed survey finds, describes, and prioritizes NPS pollution sources in a watershed and recommends BMPs to reduce polluted runoff.
3. DEP issued two requests for proposals (RFP) for NPS Water Pollution Control Projects. Fifteen conditional grant awards were issued totaling \$1,006,710 to help communities:
 - develop watershed-based plans for five watersheds, and
 - continue on-the-ground implementation of BMPs to make progress improving water quality in 10 watersheds according to their watershed-based plan.
 Funds for these grants are provided by EPA under Sections 319 and 604(b) of the federal Clean Water Act.
4. DEP collaborated with local partners working on 35 active Section 319 NPS Water Pollution Control Projects funded under NPS grants issued in 2011, 2012, and 2013.
5. Developed *Guidance for Maine Lake Watershed-based Protection Plans* (May 2013) to comply with new EPA guidelines and assist groups with preparation of Lake Watershed-Based Protection Plans. DEP & EPA accepted six lake watershed-based management plans using this new guidance.
6. The Maine Volunteer Lake Monitoring Program produced the 2012 Maine Lakes Report, which reported that during 2012 volunteers obtained 3,738 Secchi disc transparency readings, 18,055 dissolved oxygen readings, 1,247 total phosphorus samples, and 608 chlorophyll-a samples. These data were collected from 400 lake stations on 333 lakes representing approximately 36% of Maine's lake surface area.
7. DEP's Nonpoint Source Training & Resource Center provided training to 994 people in erosion and sediment control practices for contractors, and certified 823 additional individuals in the Voluntary Contractor Certification program. This is the largest number of individuals certified in one year. Total number of individuals certified now stands at 2,453.

C. Maine NPS Management Program Overview

Maine's Nonpoint Source Water Pollution Management Program (38 M.R.S.A. §410-I) helps restore and protect water resources from NPS pollution. The basic objective of the NPS program is to promote the use of state-agency defined "best management practice guidelines" (BMPs) to prevent water pollution. The overall aims of Maine's NPS Water Pollution Control Program are:

- **Clean Water.** Prevent, control, or abate water pollution caused by nonpoint sources so that beneficial uses of water resources are maintained or restored and waters meet or exceed their classification standards.
- **Using Best Management Practices.** Best Management Practices are widely used in all Maine's watersheds to minimize transport of pollutants or excessive runoff from the land into surface or ground waters.
- **Locally Supported Watershed Stewardship.** Local community awareness results in a commitment to maintain or improve the condition of local water resources through citizen action. Watershed stewardship meets community needs and maintains beneficial uses of local water resources.
- **Compliance with Applicable Laws.** Regulated activities comply with existing State and Federal laws and rules that relate to control of NPS water pollution.

DEP administers the NPS Program in coordination with EPA and other federal, state, and local governmental agencies, and non-governmental organizations. Six Maine agencies share responsibility for coordinating and implementing NPS programs: the Departments of Environmental Protection; Agriculture, Conservation, and Forestry; Transportation; Economic and Community Development; Health and Human Services, Division of Environmental Health; and Marine Resources. State agencies conduct programs that implement State laws or rules requiring people to comply with performance standards governing certain land use activities to protect water quality, and that promote voluntary use of BMPs. Maine's NPS agencies have working arrangements with other State and federal agencies, municipalities, non-governmental organizations, and business sector associations to help control or prevent nonpoint source water pollution.

Statewide regulatory programs implement several laws to control potential sources of NPS pollution, including: the Storm Water Management Law; the Site Location of Development Law; the Erosion and Sedimentation Control Law; the State Subsurface Wastewater Disposal Rules; the Natural Resources Protection Act; Pesticide Control laws; the Mandatory Shoreland Zoning Law; the Nutrient Management Act; and the Forest Practices Act.

Maine's lead NPS agencies encourage voluntary actions by governments, organizations, industry, and individuals to prevent or minimize polluted runoff. Programs support efforts to improve and protect waters threatened or impaired by NPS pollution. Maine's lead NPS agencies provide technical assistance and information about BMPs to municipalities, businesses, and individuals. The NPS Training and Resource Center at DEP provides information and technical training on BMP use. DEP administers grants to help fund NPS Water Pollution Control Projects to prevent or reduce water pollution caused by nonpoint sources.



Erosion found during Toddy Pond watershed survey.

Aligning Maine's NPS Program with EPA's Updated 319 Guidelines

EPA completed a major update of its NPS Program & Grants Guidelines for States on April 12, 2013, replacing the 2003 guidelines. In 2013 DEP began updating Maine's NPS management plan, adjusted DEP NPS staff services, and revised the annual NPS request for proposals (RFP) to better align its NPS program with the new EPA guidelines.

1. EPA called on States to conduct strategic planning to update their State NPS management program plan over a five-year outlook.

DEP worked with EPA and other State agencies to prepare a new NPS management plan. On September 26th, DEP submitted the updated Maine NPS Management Plan draft to EPA for review and comment. The plan describes the State of Maine's NPS water pollution control management programs and a five-year action plan to control NPS pollution to protect and improve Maine's lakes, streams, rivers, and coastal waters.

2. EPA designated 50% of the annual Section 319 award to each State as watershed project funds; and the other 50% as NPS program funds.
 - States must use watershed project funds to support 319-eligible activities to make progress implementing approved watershed-based plans (WBP).
 - States may use NPS program funds to support any 319-eligible activities in the State NPS Management Plan

Since 2010 DEP has gradually reduced 319-funded DEP staff from 13 to nine full time equivalents (FTEs) and in addition, curtailed 319 funding support for the Nonpoint Source Education for Municipal Officials (NEMO) Program. In 2013 DEP did not refill one position vacated through retirement. In addition, DEP adjusted NPS staff services to increase support for implementation of watershed-based plans. Forty-three percent of Section 319 funds were passed through to organizations for NPS projects to implement WBPs.

3. EPA requires States using 319 watershed project funds to make progress restoring NPS-impaired waters through implementing a WBP. However, EPA will allow a State to use a limited amount of project funds to protect priority healthy (unimpaired) waters if the State NPS plan cites protection as a priority and identifies the waters through a priority-setting process. Watershed project funds may be used for 319-eligible activities to implement a WBP to protect priority healthy (unimpaired) waters provided EPA approves the WBP.

DEP revised its annual NPS RFP to align with the new EPA guidelines. The RFP for WBP implementation provides an opportunity for communities to obtain grant funds to help implement their plan. Regarding protecting threatened unimpaired waters, DEP is updating its priority-setting process and the NPS priority watersheds list as part of updating the NPS management plan. A second RFP for WBP development invited proposals to develop a new WBP for a NPS priority watershed. To continue work protecting priority threatened lakes, DEP issued a new guidance describing the minimum elements needed in order for EPA and DEP to approve a WBP.

1. Protecting Clean Waters

DEP invests a considerable portion of available NPS control efforts to protect clean waters that are considered threatened by NPS pollution. Preventing nonpoint water pollution of Maine’s abundant clean waters is important. Preventing NPS water pollution is far more cost effective for protecting water quality than the long term efforts needed to restore an impaired waterbody. Maine has significant water quality protection and restoration challenges and fixed resources for NPS programs. DEP prioritizes and balances the use of available NPS resources to make progress both protecting and restoring lakes, streams, and coastal waters.

Protecting Maine's clean waters can be accomplished by local communities with technical and financial assistance from DEP and other partners. Local stewardship is needed for any project, plan, or outreach effort to effectively take hold because residents can increase local involvement in watershed management activities. Maine has many capable and determined watershed stewardship groups and Soil and Water Conservation Districts working to protect watersheds and clean water.

NPS Watershed Implementation Projects

To help protect clean waters considered threatened by NPS pollution, DEP invests Section 319 funds for NPS projects to implement BMPs that reduce polluted runoff. Section 319 funds helped sustain or start NPS watershed implementation projects in 13 watersheds in 2013.

Beech Hill Pond (Otis)	Little Sebago Lake (Gray)	Phillips Lake (Dedham)
Crescent Lake (Raymond)	Moose Pond (Bridgton)	Sebago Lake (Sebago)
Crooked River (Naples)	Nickerson Lake (New Limerick)	Square Pond (Shapleigh)
Great East Lake (Acton)	Parker Pond (Mt. Vernon)	Wilson Lake (Acton)
Horne Pond (Limington)		

2. Restoring Impaired Waters

State and federal water quality laws require that waters attain their assigned water quality classification. DEP monitors water quality conditions of Maine’s rivers, lakes, and coastal waters to determine if the public can use the waters for designated uses such as recreation, swimming, fishing, shellfish harvesting, and drinking water supply, and if the waters support healthy habitats for fish and wildlife. DEP places waters that are found to be degraded (i.e. not attaining water quality standards needed to support designated uses) on the impaired waters list in the *Integrated Water Quality Monitoring and Assessment Report* or "Integrated Report" (IR). Restoring impaired waters involves three steps:



AmeriCorps Volunteer, Katie Nemmer conducting sampling

- Water Quality Assessment, TMDL & Alternative Approaches.** DEP establishes a pollution allocation (Total Maximum Daily Load - TMDL) for impaired waterbodies to comply with Section 303(d) of the Clean Water Act. A TMDL assessment estimates the necessary reduction in pollution from point sources and nonpoint sources in order for the waterbody to meet the state water quality classification. EPA’s approach to the TMDL assessment is currently under review and DEP is participating with EPA, other states, and interstate organizations to explore alternative approaches.

- **Watershed-based Planning.** A watershed-based plan describes overall actions needed in a watershed to help restore water quality. EPA requires a watershed-based plan addressing nine minimum elements prior to use of 319 funds to help restore an impaired waterbody.
- **Implementing Pollution Reduction Measures.** Communities, agencies, and individuals take action to apply conservation practices or best management practices (BMPs) to eliminate or control sources of NPS pollution. Usually work needs to be focused within a watershed for 10 years or more to restore an impaired waterbody. DEP provides technical and limited financial assistance to help communities improve watersheds and restore waters.

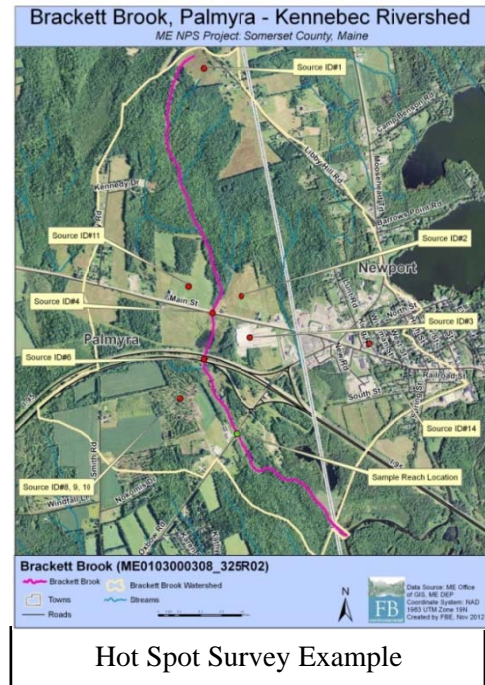
TMDL Assessments

NPS Water Quality Assessments on 30 Streams. In 2012 and 2013 DEP worked with an EPA supported contractor to develop TMDL Assessments for 30 small rural/suburban streams with impairments attributed to nutrient runoff, to produce a document entitled *Maine Statewide Total Maximum Daily Loads (TMDL) for Nonpoint Source Pollution (NPS)*. These assessments address nutrients (nitrogen and phosphorus) and sediment from nonpoint sources, which have been identified as the primary contributors to aquatic life degradation and nonattainment of dissolved oxygen standards. This approach uses MapShed, a regionally calibrated land-use model, to establish water quality targets for each waterbody. Targets were developed using a comparative attainment approach, which means identical modeling procedures are applied to both impaired watersheds and corresponding attainment watersheds. This report includes recommendations for next steps and information to support stakeholders in developing a watershed-based management plan that describes actions needed to attain water quality standards. Each of the streams has a stand-alone report that is designed for use by stakeholders and includes:

- Watershed Hot Spots Survey Results;
- MapShed Modelling Results;
- Objective Water Quality Targets; and
- Summary of Water Quality & Sampling Results

These reports were developed under a traditional TMDL framework and DEP will revise them for submittal to EPA under an Alternative TMDL Approach. The first steps will be posting the reports on DEP’s website and holding public presentations to disseminate the information.

Bacteria TMDLs. DEP developed TMDLs for three streams impaired for bacteria in the 2012 IR. These draft TMDLs are an addendum to the existing Statewide Bacteria TMDL and underwent the public review process in 2013 for submittal to EPA for approval in 2014. Bacteria concentrations were measured in each of the impaired watersheds and used to determine the percent reduction needed to attain water quality standards. The TMDLs use a



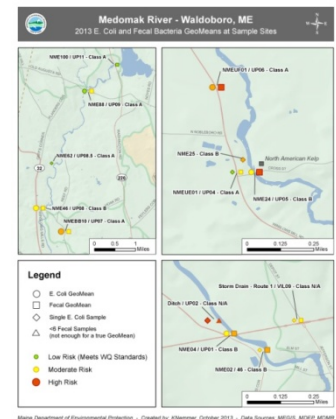
New Bacteria TMDL Streams



concentration-based approach because it is the most useful format for guiding both remediation and protection efforts in the impaired watersheds. The report identifies potential pollutant sources and sets a goal of meeting bacteria water quality criteria for all sources throughout the affected waterbodies.

Statewide Bacteria TMDL Follow-up

For the fourth season, DEP staff and an AmeriCorps volunteer (partially funded by Section 319), conducted follow-up monitoring on the Statewide Bacteria TMDL approved in 2009. Project objectives are to identify specific sources of bacteria through sampling for E. coli and sanitary surveys; then eliminate these problems; and ultimately remove the impaired stream segment from the 303d list in the IR. In 2013, streams were selected based on restoration potential, adverse impact on receiving waters, follow-up on previous sampling efforts, and the need for characterizing natural levels of bacteria at clean sites. A special project was conducted on the Medomak River to identify potential bacteria sources impacting downstream clam flats which are closed after rain events.



Watershed-based Plans to Restore Impaired Waters

DEP provided services to help six communities develop watershed-based plans (WBPs) to plan for actions needed to restore NPS impaired waters. EPA requires a watershed-based plan addressing nine minimum elements to become eligible to receive Section 319 funds to help restore an NPS impaired waterbody. This plan helps ensure Section 319-funded projects make progress towards restoring NPS impaired waters.

- DEP accepted the Ogunquit River Watershed-based Plan.
- Development of a WBP was underway for five streams: Concord Gully Brook (Freeport); Goodall Brook (Sanford); Meduxnekeag River (Houlton); Thatcher Brook (Biddeford); and Topsham Fair Mall Brook (Topsham).

From 2005 to 2013, DEP accepted 26 WBPs that describe actions needed to restore NPS impaired waters:

Annabessacook Lake (Monmouth)	Penjajawoc Stream (Bangor)
Birch Stream (Bangor)	Pleasant Pond (Gardiner)
Bond Brook (Augusta)	Pleasant River (Windham)
Capisic Brook (Portland)	Upper Prestile Stream (Fort Fairfield)
Capehart Brook (Bangor)	Red Brook (Scarborough)
China Lake (China)	Sabattus Pond (Sabattus)
Dudley Brook (Castle Hill)	Spruce Creek (Kittery)
East Pond (Smithfield)	Threemile Pond & Webber Pond (China)
Hart Brook (Lewiston)	Trout Brook (So. Portland)
Long Creek (South Portland)	Togus Pond (Augusta)
Long Pond & Great Pond (Belgrade)	Unity Pond (Unity)
Ogunquit River (Ogunquit)	Whitten Brook (Skowhegan)
Pearce Brook (Houlton)	Wilson Pond (Monmouth)

NPS Watershed Implementation Projects

To help restore NPS-impaired waters, DEP allocates a portion of Section 319 funds for NPS Watershed Projects to implement BMPs that reduce pollutant loads. During 2013, Section 319 funds helped continue or start NPS watershed projects to implement BMPs called for in WBPs for 11 NPS impaired waters:

Annabessacook Lake (Monmouth)	Penjajawoc Stream (Bangor)	Spruce Creek (Kittery)
Capehart Brook (Bangor)	Pleasant Pond (Gardiner)	Wilson Pond (Winthrop)
Christina Reservoir (Fort Fairfield)	Pleasant River (Windham)	Whitten Brook (Skowhegan)
Long Pond (Belgrade)	Sabattus Pond (Sabattus)	

3. NPS Pollutant Load Reduction

NPS load reductions for all Section 319-funded NPS implementation projects are reported in the EPA Grants Reporting and Tracking System (GRTS) database.

NPS Pollutant Load Reductions in 2013		
19 NPS Watershed Implementation Projects		
Sediment	Phosphorus	Nitrogen
313 tons/year	263 lbs/year	227 lbs/year

Eight implementation projects funded in previous years were successfully completed. Best management practices (BMPs) were installed to reduce polluted runoff in seven lake and three stream watersheds Annabessacook Lake (Winthrop); Cochnewagon Lake (Monmouth); Crescent Lake (Raymond); Great East & Wilson Ponds (Acton); Moose Pond (Bridgton); Square Pond (Shapleigh); Capehart Brook (Bangor); Penjajawoc Stream (Bangor); and the Pleasant River (Windham). These projects reduced pollutant loading by 251 pounds of phosphorus and 289 tons of sediment per year – equivalent to about 25 dump truck loads.

National Section 319 program guidelines require load reduction estimates for projects that will result in load reductions of sediment or nutrients (nitrogen and phosphorous). EPA recognizes that due to runoff variability, load reductions associated with BMP projects cannot be directly measured. Load reduction estimates for Maine Section 319 projects are developed using simple models. DEP and grantees use methods described in the EPA "Region 5 Model" and/or the U.S.D.A. Forest Service Water Erosion Prediction Project - Road (WEPP - Road) computer model to estimate NPS load reductions.

These models are described at the following websites: <http://it.tetrattech-ffx.com/steplweb/> and <http://forest.moscowfsl.wsu.edu/fswepp/>.

D. DEP NPS Program Activities in 2013

1. Section 319 Grant Award

EPA awarded FFY2013 Section 319 funds to DEP - \$1,726,692, designated as base- \$567,500 and incremental- \$1,159,192. Base funds may be used for statewide NPS programs. Incremental funds are for watershed projects to help improve NPS impaired or threatened waters. The table below shows how DEP allocated the FFY2013 319 grant award. DEP allocated 57% (\$979,860) of 319 funds to support 10 DEP NPS program staff positions and 43% (\$746,832) primarily for pass-through grants to municipalities, soil and water conservation districts and watershed groups for watershed projects.

Activity	Provider	Base 319 Subtotal	I-319 Subtotal	319 Total	Non-federal Match
NPS Grants for Watershed Projects	Grantees	0	725,829	725,829	715,923
Volunteer Lake Monitoring Program	VLMP	20,000	0	20,000	158,227
NPS Training & Resource Center	DEP	1,003	0	1,003	0
Small Community Grants Program	DEP	0	0	0	100,000
DEP Staff (10 FTE), Other & Indirect	DEP	546,497	433,363	979,860	624,013
Total		\$567,500	\$1,159,192	\$1,726,692	\$1,598,163

2. NPS Program Activities

This section provides an overview of NPS program activities during 2013. The DEP NPS program invests considerable staff resources to disseminate information, provide technical assistance, and gather data to enhance NPS pollution reduction efforts. These efforts include partnering with watershed groups to provide technical assistance, developing publications, and training contractors and others. Section E starting on page 19 contains more detailed information about NPS projects receiving grants for Watershed-based projects.

Program Activities.

- Twelve Nonpoint Source (NPS) Watershed Projects funded through the NPS grants program in previous years were successfully completed. DEP provided technical assistance and granted \$640,894 of Federal Clean Water Act funds for these projects. Grantees, partners, and landowners contributed matching funds or services valued at over \$890,000.
 - Best management practices (BMPs) were installed to reduce polluted runoff in six lake and three stream watersheds.
 - NPS Watershed Survey Projects were completed for one lake and two stream watersheds.
- A 31 mile segment of the Sebasticook River has significantly improved over the last decade and it now attains its water quality standards for aquatic life uses. The improvement was due in part to

NPS abatement work in the upstream Sebasticook Lake watershed since the 1980's. For more information, refer to Maine's 2012 Integrated Report, page 136.

- DEP and EPA Region I reviewed and accepted lake watershed-based management plans for six lakes using the new Guidance for Maine Lake Watershed-based Protection Plans: Crescent Lake (Raymond); Lake Auburn (Auburn); Little Sebago Lake (Windham); Thompson Lake (Oxford); Toddy Pond (Orland); and Woods Pond (Bridgton).
- Developed four bacteria total maximum daily loads (TMDLs) for public review and submission to EPA.
- DEP selected Oliver Brook for focused water quality monitoring under the National Water Quality Initiative (NWQI). The brook is a tributary of the Meduxnekeag River - Nickerson Lake sub-watershed. Under the NWQI, the USDA - Natural Resources Conservation Service uses farm bill Environmental Quality Improvement Program (EQIP) funds to help farmers install conservation practices in the watershed to improve water quality and aquatic habitat.
- Provided grants for nine NPS watershed implementation projects, two watershed surveys, and one project to develop a watershed-based management plan.
- DEP completed closeout of all NPS Projects previously funded under the FFY 2010 319 grant. DEP continues to administer 319 annual grants for FFY 2011, 2012 and 2013 including monitoring sub-recipient performance on 35 grant awards.
- DEP entered appropriate grant and project information into the EPA Grants Reporting and Tracking database (GRTS).

Publications.

- DEP prepared and submitted Maine's NPS Management Program Plan (draft) to EPA for comment. The plan describes the Maine's NPS water pollution control management programs and a five year action plan (2014 - 2018) to control NPS pollution to protect and improve Maine's lakes, streams, rivers, and coastal waters.
- DEP developed Guidance for Maine Lake Watershed-based Protection Plans (May 2013) to comply with new EPA Section 319 guidelines and assist groups with preparation of Lake Watershed-Based Protection Plans. A watershed-based plan accepted by the Department is a prerequisite to be eligible to submit a proposal for a 319 funded implementation grant. This document was developed to help partners:
 - understand the minimum elements required by DEP for lake watershed-based protection plans;
 - produce a locally-supported plan that describes actions needed for nonpoint source pollution (NPS) mitigation and water quality protection over a five to ten year period;
 - efficiently assemble plans using watershed survey findings and other available resources; and
 - complete needed assessment and planning so they may apply for Section 319 funds to help implement the plan.
- Reviewed proposed stormwater treatment systems and revised the BMP manual. Among the work accomplished, a new filter option for the underdrained filter basin and the Stormfilter (proprietary system) was added to the BMP manual.

- Developed the Stream Crossing Pocket Guide. The guide is designed to offer clear information for town crews and contractors in the proper installation of a culvert to provide passage for aquatic life and the storm flows during a major storm event. The guide will be issued by the Maine Department of Transportation.
- Submitted a Section 319 success story to EPA describing restoration of Echo Lake in Presque Isle. EPA posted the story on its Section 319 Nonpoint Source Success Stories webpage <http://water.epa.gov/polwaste/nps/success319/>

Technical Assistance.

- Provided administrative and technical support to partners for each of 35 active 319 implementation and planning projects.
- Participated in public meetings to update and involve local citizens and leaders in the planning process and on the local committees responsible for analyzing data, identifying stream stressors and restoration work and drafting the plans for four urban stream watersheds and one agricultural stream watershed.
- Provided technical assistance to the Long Creek Watershed Management District toward implementation of the Long Creek Watershed Restoration Plan.
- Partnered with City of South Portland to apply for and carry out \$20,000 grant project through the Royal Bank of Canada's Blue Waters grant program and assisted with the development and pilot of a volunteer biomonitoring program on Trout Brook.
- Provided technical guidance to consulting engineers and municipal officials on BMP selection and design. Provided BMP selection and design support on 319 implementation grant projects, with focus on Whitten Brook and Capehart Brook.

Data Collection.

- Collected essential information for the support of active watershed restoration planning projects in the watersheds of eight urban impaired stream watersheds and five agricultural watersheds. Data collected included dissolved oxygen, conductivity, temperature, pH, bacteria, turbidity, watershed boundary mapping, conductivity and dissolved oxygen screening, stream corridor survey, biomonitoring, geomorphic assessment, watershed surveys, and stormwater retrofits.
- Conducted preliminary water quality assessment on four urban streams and nine agricultural streams in anticipation of future planning efforts.

3. DEP Staff Services for Watershed Groups and Municipalities

DEP invests considerable staff resources to help watershed groups and towns reduce NPS water pollution. Some of the activities and projects that DEP supported in 2013 include:

- **Municipal Comprehensive Plan Reviews** – DEP staff provide maps and data to municipalities starting the comprehensive planning process. After plans are submitted to the state, DEP staff review

the water resources sections of municipal comprehensive plans for consistency with agency goals, programs and policies. In 2013, assistance was provided to the following towns: Falmouth, Greenville, Kennebunk, Litchfield, Mechanic Falls, Pittsfield, Randolph, Rumford, Sabattus, Searsmont, South Portland, Surry, and Westbrook.

- **NPS Site Tracker** – The NPS Site Tracker tool assists watershed groups with managing information on erosion sites in their watersheds. The tool allows prioritization of erosion sites, tracking of sites as they are fixed, and listing of new sites as they are discovered. The tracker combines an Excel spreadsheet with electronic photo organization and online mapping of sites. The DEP helped the following groups set up and start to use the NPS Site Tracker: Little Sebago Lake Association, Panther Pond Association, and 30 Mile River Watershed Association. After learning about the NPS Site Tracker at the Maine Lake Conference in June, the Clary Lake Association entered all their 2001 survey data and photos into the NPS Site Tracker, visited sites and updated the tracker with information about the status of each site.



DEP partnered with the City of South Portland and Gulf of Maine Coastal Program to carry out a \$20,000 grant project through the Royal Bank of Canada's Blue Waters program. Grant funds were used to plant vegetation, stabilize trails, and install a rain garden adjacent to Kimball Brook, an urban impaired stream. Sea Cadets and South Portland Land Trust volunteers (above) helped with the work.

- **Stormwater Compensation Fee (SCF) Projects** – Under the Maine Stormwater Law, developers in certain lake watersheds have the option to pay a compensation fee in lieu of constructing additional BMPs to comply with a portion of a parcel's phosphorus budget. DEP staff works annually with seven partner organizations to identify and implement phosphorus mitigation projects in these watersheds. In 2013 work was conducted in three watersheds with SCF funds, including the Camp Benson project in the Sebasticook Lake watershed (Newport) which installed stormwater BMPs along 890 feet of gravel road that previously directed stormwater directly into the lake.
- **Stream Water Quality Monitoring** - Conducted preliminary water quality assessment on the following streams in anticipation of future planning efforts: Arctic Brook (Bangor), Capehart Brook (Bangor), Sucker Brook (Bangor), Hardwood (Caribou), Nichols (Caribou), Otter (Caribou), Amdsen (Ft. Fairfield), Cloney (Ft. Fairfield), Grey (Ft. Fairfield), Hacker (Ft. Fairfield), Hockenull (Ft. Fairfield), Cowett (Presque Isle), Kennedy (Presque Isle), Merritt (Presque Isle), Goosefare Brook (Saco), Willowdale Brook (Scarborough), Whitten Brook (Skowhegan), Stroudwater River (Westbrook), Allen (Westfield), Frost (Westfield).
- **Urban Watershed Mapping** – DEP staff and two summer interns helped complete mapping projects in several urban stream watersheds to help municipalities develop watershed-based plans. Watershed boundaries and/or stormwater outfall catchments were field-checked and mapped for Shaw Brook and Sucker Brook (Bangor), and for Kennedy Brook (Augusta) mapping was completed.
- **Watershed Group Support** – The DEP supports the work of watershed associations and communities through presentations at annual association meetings and providing technical assistance outside of 319 grant-funded projects. In 2013, DEP provided assistance to the following groups:

Mousam Lake (Acton), Allen Pond (Greene), Houlton Band of Maliseet Indians (Houlton), Kimball Brook (South Portland), and Watchic Lake (Standish). The DEP also provides watershed maps to lake and watershed groups upon request. **Watershed Roundtable-** Over 50 watershed managers from state agencies, municipalities, watershed organizations, and SWCDs attended the DEP's 11th annual Watershed Managers' Roundtable, which was held at the Maine Lakes Resource Center in Belgrade. This informal, day-long event provides an opportunity for networking, sharing lessons learned, and discussing common problems in both rural and urban watersheds across the state.

- **Watershed Surveys** – A NPS Watershed Survey assesses a watershed to find, describe, and prioritize NPS pollution sources and recommend BMPs needed at specific NPS sites to reduce polluted runoff to help protect water quality. DEP provides technical assistance and project oversight to local groups that conduct volunteer watershed surveys without Section 319 grant funding.

In 2013, DEP provided assistance for surveys of the Georges Pond (Franklin) and Ogunquit River (Ogunquit) watersheds. Support was also provided for the Province Lake (Parsonsfield, ME and Wakefield, NH) survey, which was funded by New Hampshire's 319 grant program. DEP also worked with the Volunteer Lake Monitoring Program to hold a workshop on conducting watershed surveys. The workshop was attended by 18 people representing seven lakes.



DEP provides technical assistance for groups working to protect their lakes through watershed surveys. The Province Lake watershed survey (volunteers shown above) was conducted with funding from New Hampshire's 319 grant program. DEP provided technical support since this border lake is also located in Maine.

- **Youth Conservation Corps** – The DEP provides technical assistance and training to the nine YCC programs. DEP staff hosted a YCC Roundtable in December. These YCC programs hire high school students to install buffers, erosion control measures, and other conservation practices in lake and river watersheds. Most of these programs originally started as part of 319 grant projects, but communities work to find local funding to continue the programs after the grants have ended.



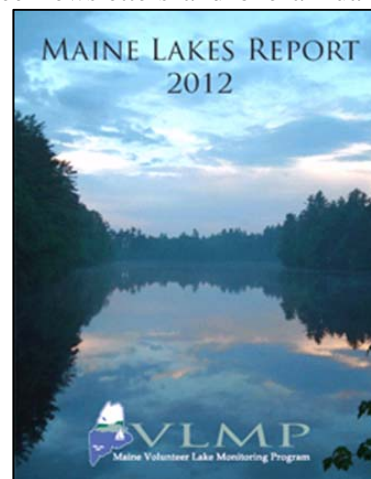
FOCW Youth Conservation Corps with installed buffer

4. Summaries of Statewide NPS Programs

This section summarizes accomplishments of three statewide NPS programs, Maine Volunteer Lake Monitoring Program, Maine Volunteer River Monitoring Program, and the NPS Training and Resource Center and the DEP's Maine Lakes Biomanipulation project.

Maine Volunteer Lake Monitoring Program (VLMP)

Funding received under Section 319 partially supported the educational aspects of the VLMP including training of volunteer monitors to collect quality data, production of three newsletters and one annual report in 2013, and the VLMP annual meeting where information about lake water quality and monitoring topics is presented. Volunteers monitor their assigned lakes twice a month for five to six months each year, enter data into electronic format, and assist in the local coordination of VLMP activities. The total match generated by the volunteers is more than an order of magnitude greater than the Section 319 funding level.



Accomplishments in 2013:

- Produced the *2012 Maine Lakes Report*, which reported that during 2012, volunteers obtained 3,738 Secchi transparency readings; 18,055 dissolved oxygen readings; 1,247 total phosphorus samples; and 608 chlorophyll-a samples. These data were collected from 400 lake stations on 333 lakes representing approximately 36% of Maine's lake surface area.
- VLMP produced four newsletters and convened the 2013 Annual Meeting, which was their 42nd Anniversary Celebration attended by more than 115 people.
- Encouraged collection of transparency readings on days that the Landsat satellite passed over Maine.
- Trained more than 60 new volunteers for transparency and five volunteers for dissolved oxygen, for a total of 442 volunteers certified to obtain Secchi transparency data and another 168 volunteers certified to collect both transparency and dissolved oxygen data. VLMP also recertified 73 volunteers for transparency, 95 volunteers for dissolved oxygen, and recertified 89 volunteers online using the Virtual Secchi Recertification tool.
- Reached a level of 610 certified volunteer water quality monitors in the program. These volunteers were monitoring 549 lake basins in Maine by the end of 2013.

For More Information:

Linda Bacon, DEP Project Manager – (207) 441-0462, linda.c.bacon@maine.gov

Scott Williams, VLMP – (207) 783-7733, Scott.Williams@MaineVLMP.org

VLMP Website – www.mainevolunteerlakemonitors.org/

Maine Volunteer River Monitoring Program (VRMP)

The purpose of the Volunteer River Monitoring Program is to provide a standardized approach to river/stream monitoring and data management. Volunteer groups participating in the Program work under a DEP Quality Assurance Program Plan and develop Sampling and Analysis Plans (SAPs) specific to their needs. Data collected by groups involved in the Program are accepted by DEP and included in the DEP water quality database.

The VRMP provides technical support and resources to the groups including the loan of monitoring equipment, as well as calibration of groups' equipment. This also includes review and assistance with SAP development/updates, annual volunteer training and certification, data management and an annual water quality report.



Training Rockport Conservation Commission members on the Goose River in Rockport.

Accomplishments in 2013:

- The “Volunteer River Monitoring Report – 2012 Data Report”, was completed in April 2013. The report was reformatted to create a more professional look.
- Trained and certified or re-certified volunteers associated with seven volunteer organizations on a number of small and major river and stream systems statewide.
- Water quality data was collected by 49 volunteers at 71 sites and included 455 sampling events.
- Data collected included temperature, dissolved oxygen, conductivity, bacteria, chlorophyll and nutrients.
- The Five-year Quality Assurance Program Plan was updated and reviewed. It will be finalized in early 2014.



Geomorphology assessment at Porters Landing Brook, Freeport

For More Information:

Mary Ellen Dennis, VRMP Coordinator – (207) 215-7946, mary-ellen.c.dennis@maine.gov
 VRMP Website – http://www.maine.gov/dep/water/monitoring/rivers_and_streams/vrmp/index.htm

Maine Nonpoint Source Training and Resource Center

The primary focus of the Maine Nonpoint Source Training and Resource Center is to provide training to various groups throughout the state to help them prevent nonpoint source pollution. In addition, the Center maintains an inventory of NPS publications and DVD lending library, and acts as a clearinghouse for information on nonpoint source pollution and best management practices.

Accomplishments in 2013:

- Provided training to 994 participants in erosion and sediment control practices for contractors, and certified 823 additional individuals in the Voluntary Contractor Certification program. This is the largest number of individuals certified in one year since the inception of the program. The total number of individuals certified now stands at 2453.
- Provided workshops on salt management and gravel road maintenance and co-sponsored four workshops on “Stream Smart” road crossings with a total of 189 participants.
- Provided continuing education training on “Controlling Turbidity on Construction Sites” to 62 certified individuals.



Culvert Installation Training at the Highway Congress in Skowhegan

For More Information:

Bill Laflamme, DEP – (207) 215-9237, william.n.laflamme@maine.gov

NPS Training Center Website – <http://www.maine.gov/dep/land/training/index.html>

Maine Lakes Biomanipulation – Post Fish Removal Phase III

The goal of this project is to improve water quality on East Pond, an impaired lake at the head of the Belgrade Lakes chain, through reduction of four fish species: non-native white perch, black crappie, landlocked alewife; and native yellow perch. The goal of this six-year annual targeted fish removal is to enhance zooplankton survival and concomitant consumption of nuisance blue-green algae, ultimately resulting in greater water transparencies. **Phase I** of this project in 2004-2006 assessed baseline water quality conditions and fish assemblages in East Pond in Oakland and Smithfield and the control waterbody, North Pond in Smithfield. **Phase II**, fish removal, began in East Pond following ice-out in 2007 and continued through the spring of 2012. **Phase III** encompasses three years of post-fish removal study to complete objectives (2013-2015), including final project assessment and project evaluation.

Accomplishments in 2013:

- Bi-weekly water quality sampling (May thru September) for total phosphorus, chlorophyll-a, water transparency (Secchi disk), dissolved oxygen-temperature profiles, and phytoplankton-zooplankton assemblages in both East and North ponds were carried out by the Lakes Assessment section of Maine DEP (from single deep-hole stations only). The Cooperative Agreement with the University of Maine (Orono) ended on 31 December 2012.
- As in past years, fish assemblages in East and North ponds were assessed monthly, June through September, using a standardized combination of active fishing gear including pre-dusk sinking gill nets, expert baitfish angling, and night-time beach seining. Maine DEP fish technicians tagged and released 2,000 white perch for mark-recapture studies to continue estimates for the adult white perch (spawning) population (to be compared with 243,686 in 2012, 603,380 in 2011; 213,986 in 2010; 200,918 in 2009; 10,628 in 2008; 77,566 in 2007; and 174,000 in 2006).
- In 2013, ice-out occurred in mid-April and a cool summer resulted in a less-productive growing season at East Pond (15 ppb avg. total phosphorus vs. 19 ppb avg. total phosphorus in North Pond) resulting in very good water quality and transparency measures throughout the summer (4.6 m avg. vs. 4.2 avg. on North Pond). Prior to this, water quality results indicated that nuisance blue-green algae blooms still occurred in East Pond, however, bloom prevalence had noticeably shifted to later August and September (2004 thru 2009). There has been a considerable improvement in water quality relative to the increased length of time in the summer when water quality/clarity standards of two meters or better are achieved.



Maine DEP fish technicians, John Reynolds and Joe Glowa tagging White Perch in East Pond to estimate population size.

For More Information:

David Halliwell, Maine DEP – (207) 215-9343, david.halliwell@maine.gov
 Melissa Evers, Maine DEP – (207) 215-3879, melissa.evers@maine.gov

E. NPS Grants Program

1. Overview – NPS Grants Program

DEP uses a watershed-based approach as the coordinating framework to organize public and private sector efforts to identify, prioritize, and then implement activities to restore or protect waters. A pass-thru grants program is administered that awards and monitors sub-grants of federal CWA Section 319 & 604b funds for watershed projects to help restore or protect lakes, streams, rivers or coastal waters from NPS pollution. These grants help communities identify nonpoint water pollution sources, prepare watershed-based management plans, and take action to reduce or prevent NPS pollution. Through the NPS Grant Program, DEP issues grants to local project sponsors who provide a minimum of a 40% match to the grant funds. DEP issued grants to help fund three types of watershed-based projects:

- **NPS Watershed Implementation Project.** Projects focus on implementing actions within an entire watershed to improve or protect a waterbody. The project is designed so that BMPs are implemented in a manner that leads to a significant reduction in NPS pollutant load to a waterbody. The load reduction is intended to improve or protect water quality of a waterbody. A NPS Watershed Survey (or other NPS assessment of equivalent detail) is needed to design and implement this type of project.
- **NPS Watershed Survey.** Project focuses on finding, describing, and prioritizing NPS pollution sources in a watershed, and recommending BMPs for treating identified NPS sites to reduce polluted runoff. NPS Watershed Surveys provide essential information for planning and implementing NPS Watershed Projects.
- **Watershed-based Plan.** A watershed-based plan (WBP) is intended to be a strategic plan for actions needed over a five to 10 year timeframe to achieve the load reductions called for in a TMDL to restore an NPS-impaired waterbody.

NPS Grant Program Changes

In 2013, DEP revised its NPS grant-making program to align it with EPA's updated NPS program guidelines.

1. DEP substantially revised the request for proposals (RFP) and issued two RFPs:

- A RFP was issued for projects to develop a nine-element or alternative WBP. A WBP provides assessment and management information and describes actions needed to restore NPS-impaired water bodies or to protect water bodies threatened by NPS pollution; and
- A RFP was issued to for projects to implement BMPs on-the-ground at critical source areas (NPS sites) guided by a WBP accepted by the DEP. This focus of this grant is to help communities make progress implementing NPS management measures described in a WBP to restore NPS-impaired water bodies, or to protect water bodies threatened by NPS pollution.

2. With EPA assistance, DEP developed a new guidance document, Guidance for Maine Lake Watershed-based Protection Plans (May 2013) to help communities prepare Lake Watershed-based Protection Plans. DEP & EPA accepted six lake watershed-based management plans using this new guidance.

3. NPS planning or assessment work may be funded only with 319 program funds. However, currently DEP relies on 319 program funds to support NPS program staff services (9 FTEs). Therefore at this time, funds for assessment of NPS problems and developing WBPs will be limited primarily to CWA Section 604(b) planning funds (\$41,600 in FY 2013). DEP plans to use planning funds for grants to help communities develop WBPs that identify sites needing BMP implementation to help ensure DEP effectively invests watershed project funds. Assessment of nonpoint sources, including NPS watershed survey work, is an eligible activity to develop a WBP. DEP does not have sufficient funding available to continue to offer grants for “stand-alone” NPS watershed survey projects as in past years.

2. NPS Water Pollution Control Projects Funded in 2013

In early 2013, DEP provided grants for eight NPS watershed implementation projects and two NPS watershed surveys based on the outcome of the annual RFP for projects DEP issued in April 2012.

Project Title	Grantee	Project #	Grant	Match
Beech Hill Pond Watershed Protection Project - Phase II	Hancock County SWCD	2013RR01	\$48,780	\$33,755
Cobbossee Lake Watershed Survey	Cobbossee Watershed District	2013RR17	\$23,089	\$16,062
Crooked River Protection Project - Phase I	Cumberland County SWCD	2013RR15	\$98,542	\$67,418
Horne Pond NPS Watershed Protection Project	York County SWCD	2013RR03	\$56,715	\$57,666
Nickerson Lake Protection Project - Phase II	Southern Aroostook County SWCD	2013RR04	\$58,362	\$38,928
Phillips Lake Watershed Protection Project	Hancock County SWCD	2013RR02	\$59,310	\$39,560
Spruce Creek Watershed Protection Project, Phase III	Kittery, Town of	2013RT06	\$75,750	\$74,055
Stroudwater River NPS Watershed Survey	Cumberland County SWCD	2013RT16	\$18,333	\$12,905
Togus Pond Watershed Restoration Project, Phase 3	Kennebec County SWCD	2013RT07	\$40,800	\$27,650
Trout Brook Restoration Project, Phase I	South Portland, City of	2013RT08	\$70,363	\$48,072

3. Request for Proposals: FFY 2014 Grants for NPS Pollution Control Projects

DEP issued 15 conditional grant awards totaling \$1,006,710 to help communities: (1) develop watershed-based plans for five watersheds or (2) continue on-the-ground implementation of BMPs according to watershed-based plans to make progress improving water quality in 10 watersheds. Clean Water Act Section 319 and 604(b) funding for these grants was provided to DEP by EPA.

DEP issued two requests for proposals (RFPs) for NPS Water Pollution Control Projects. NPS grants are awarded to help communities take action to restore NPS-impaired water bodies or protect water bodies threatened by NPS pollution. In June, DEP issued a RFP for projects to develop a watershed-based management plan. DEP received five proposals requesting \$163,691. DEP issued five conditional grant awards. In July, DEP issued a RFP for projects to implement BMPs on the ground, guided by a WBP. DEP received 12 proposals requesting \$1,051,358. DEP issued 10 conditional grant awards. Projects are scheduled to begin in 2014.

Conditional Grant Awards for NPS Projects

Project Title	Grantee	Project #	Grant	Match
Alamoosook Lake Watershed-based Plan & Watershed Survey	Hancock County SWCD	2013RR24	21,135	15,000
Capisc Brook Greener Communities Cleaner Streams	Cumberland County SWCD	2014RT04	86,635	93,280
Cochnewagon Lake WBP Development	Cobbossee Watershed District	2013RT26	10,800	17,450
Crescent Lake NPS Watershed Protection Project, Phase II	Raymond, Town of	2014RR03	82,049	76,518
Goosefare Brook WBP Development	Saco, City of	2013RT25	45,986	31,790
Little Sebago Lake Protection, Phase IV	Cumberland County SWCD	2013RR27	97,844	69,893
Long Pond NPS Watershed Restoration, Phase III	Belgrade Regional Conservation Alliance	2014RT06	74,460	72,500
Ogunquit River Watershed Restoration Project, Phase I	Ogunquit, Town Of	2014RT09	96,075	69,190
Sebago Lake Watershed Assessment & Prioritization	Cumberland County SWCD	2013PP05	41,600	33,640
Sucker Brook WBP Development	Bangor, City of	2014PP13	41,600	28,910
Thompson Lake Watershed Protection Project, Phase IV	Cumberland County SWCD	2014RR07	88,910	63,337
Toddy Pond Watershed Protection Project	Hancock County SWCD	2014RR01	82,257	54,940
Trout Brook Restoration Project, Phase II	Cape Elizabeth, Town of	2014RT08	109,588	72,979
Wilson Pond Water Quality Improvement Project, Phase II	Cobbossee Watershed District	2014RT05	65,200	45,590
Woods Pond Watershed Protection Project	Lakes Environmental Association	2014RR02	60,000	42,810

F. Summaries of NPS Water Pollution Control Projects Completed in 2013

Twelve projects funded through DEP's NPS grants program were completed in 2013. Concise two-page summaries of each project are included in the following pages and will be uploaded to the Knowledgebase database, <http://www.gulfofmaine.org/kb/2.0/search.html>. Additional project information can be obtained from the DEP or the project grantee. The map on page 1 shows the locations of watersheds with NPS projects completed in 2013.

Project Title	Page Number
Annabessacook Lake Watershed Restoration, Phase II	23
Capehart Brook Restoration Project, Phase I	25
Cochnewagon Lake NPS Watershed Protection Project, Phase I	27
Concord Gully Brook Watershed Survey	29
Crescent Lake NPS Watershed Project	31
Great East Lake & Wilson Lake Watershed Implementation, Phase I Maine	33
Moose Pond Watershed Implementation Project, Phase I	35
Penjawoc Stream Watershed LID Retrofit Project	37
Pleasant River Watershed Restoration Project, Phase I	39
Square Pond NPS Watershed Protection Project, Phase II	41
Toddy Pond Watershed Survey	43
Upper Prestile Stream Main Stem 1 Watershed Survey	45

Annabessacook Lake Watershed Restoration – Phase II

#2011RT15

Waterbody Name: Annabessacook Lake

Location: Monmouth & Winthrop- Kennebec County

Waterbody Status: Impaired, NPS Priority Watershed, Most at Risk

Project Grantee: Cobbossee Watershed District

Project Duration: January 2011 – December 2013

319 Grant Amount: \$68,450

Local Match: \$63,876



PROBLEM/NEED:

Annabessacook is a 1,391 acre lake with a direct watershed area of 21.2 square miles. There is a considerable amount of developed land in the watershed near the lake, including the urban center of Winthrop, 182 shorefront residences, and a 100-site campground. The urban centers of Monmouth and North Monmouth are located adjacent to lake tributaries.

Lake water quality improved significantly since it was severely polluted by discharges of sewage and polluted runoff in the 1960s and 1970s. Since 2000 throughout the summer period, the mean annual secchi disk transparency has exceeded four meters. However, Annabessacook experiences occasional nuisance algal blooms during the fall turnover period, reducing water clarity to less than 2.0 meters, thus it remains on Maine's list of impaired lakes. Today, water clarity and dissolved oxygen problems are attributed primarily to NPS pollution that washes into the lake from the surrounding watershed. With agriculture on the wane in the watershed, and a deceleration in the internal recycling of phosphorus from lake sediments (PCAP-TMDL 2004), soil erosion and stormwater runoff from the developed areas of Winthrop and Monmouth are critical source areas needing further attention.

PROJECT DESCRIPTION:

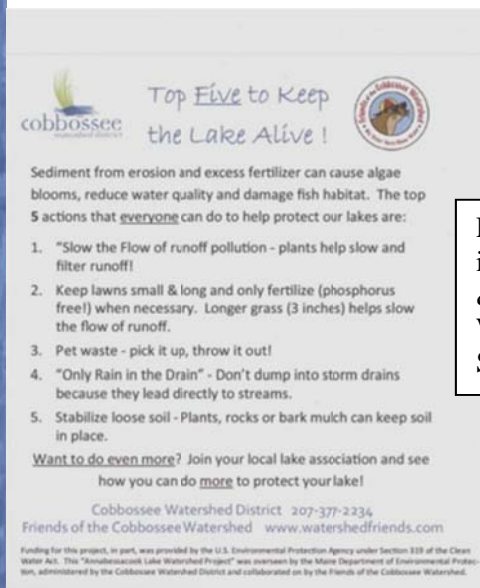
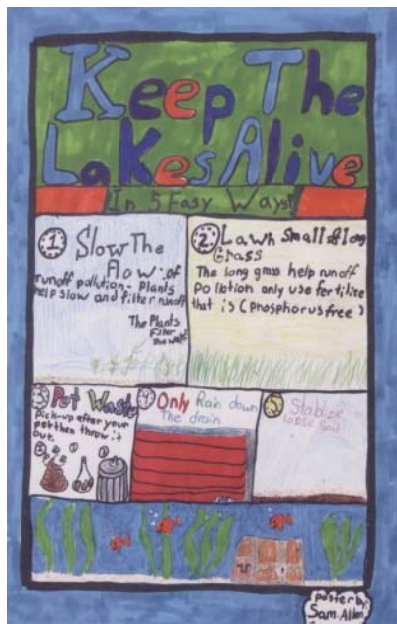
The project continued a long-term effort described in the Annabessacook Lake Watershed-based Plan (2007) to restore water quality. Improvement of Annabessacook Lake was promoted by reducing soil erosion and phosphorus runoff to the lake through installation of BMPs on documented NPS sites (gravel camp roads, public roads, and shorefront), and raising public awareness about watershed and lake water quality issues. A major thrust of the project was to implement BMPs on the most severely eroding gravel camp roads to prevent sediment from entering the lake.



One of 12 filtration BMP catch basin inserts installed on Highland Avenue to trap phosphorus & other pollutants.

PROJECT OUTCOMES

- CWD oversaw BMP implementation on five private roads, reducing sedimentation from 21 sites. BMPs included road surface improvements (hyper-elevating and crowning), ditches (grassed and rock-lined) with check dams, culverts with rock inlets and outlets, rock-lined plunge pools, settling basins, and wooded buffers.
- Filtration BMP units (StormBasin) were installed at all 12 catch basins on Highland Avenue in Winthrop which collect runoff from a 15 acre watershed. The catch basin retrofits are expected remove approximately 50% (3.9 lbs/yr) of the dissolved phosphorus in the runoff from the watershed.
- 2070 lineal feet of eroding shorefront on 18 properties were stabilized by the Friends of the Cobbossee Watershed's Youth Conservation Corps (YCC), through their *Slow-the-Flow* Program.
- Pollutant loading to Annabessacook Lake was reduced by an estimated of 5.4 tons of sediment and 6.95 pounds of total phosphorus per year (WEPP model and Region 5 Method).
- More than two dozen property owners received expert recommendations on how to stabilize their shorefronts to prevent erosion and sedimentation.
- The watershed community, including the more urban (i.e., non-shorefront) neighborhoods of Monmouth and Winthrop, gained a better understanding of how polluted water runoff from the watershed can adversely impact the lake.



Postcard mailed to 700 households in the “urban” sections of Winthrop & Monmouth. (Artwork by Winthrop Middle School student, Samantha Allan).

PROJECT PARTNERS:

Annabessacook Lake Improvement Association
 Friends of the Cobbossee Watershed
 Town of Monmouth
 Town of Winthrop

CONTACT INFORMATION:

Norm Marcotte, Maine DEP – (207) 215-6277, norm.g.marcotte@maine.gov
 William Monagle, Cobbossee Watershed District – (207) 377-2234, wmonagle@roadrunner.com

Capehart Brook Restoration, Phase I

#2011RT16

Waterbody Name:	Capehart Brook
Location:	Bangor, Penobscot County
Waterbody Status:	Urban Impaired Stream
Project Grantee:	City of Bangor
Project Duration:	April 2011 – November 2013
319 Grant Amount:	\$60,000
Local Match:	\$96,120



PROBLEM:

Stormwater runoff from the 15% impervious cover of the watershed is the largest source of pollution to Capehart Brook. Stormwater runoff from roads, roofs, and parking lots in developed areas flows quickly carrying dirt, oils, metals, and other pollutants, and sending high volumes of flow to the brook. Developed areas in the watershed are primarily residential. The watershed is 48% non-developed, particularly in the southern portion of the watershed. These non-developed woodland areas absorb and filter stormwater pollutants and help protect the water quality of the brook. To support Class B aquatic life uses, the watershed needs the characteristics of a watershed with 8% impervious cover according to the *Maine Impervious Cover TMDL for Impaired Streams* (DEP 2012). The TMDL and the Stream Corridor Survey recommended disconnecting runoff from impervious surfaces to reduce volume, slow velocity, and filter out contaminants.

PROJECT DESCRIPTION:

The subsurface bioretention cells installed at the Rangeley South and Downeast School sub-catchments will provide much needed reduction in peak flows and will filter out pollutants commonly found in urban stormwater. It is expected that this project along with several successive phases will effectively disconnect 10% of the impervious area of the entire watershed from directly draining to the storm system, a needed step towards restoring the brook.

This project also focused on educating single-family homeowners regarding stormwater problems and solutions. The Capehart Brook watershed is filled with single-family homes where the disconnection of impervious areas can occur by capturing rain water from rooftops and parking areas and installing infiltration systems. Two dozen homeowners received technical assistance and materials, free of charge, to install rain barrels or rain gardens. Also, volunteers were solicited from the surrounding community to assist with stenciling storm drains and to participate in a stream clean-up to raise awareness about the impact of stormwater on Capehart Brook.

PROJECT OUTCOMES:

- A subsurface bioretention cell was installed at Rangeley South which treats and attenuates stormwater from six acres of the housing development prior to discharging to Capehart Brook.
- A subsurface bioretention cell was installed at the Downeast School which treats and attenuates stormwater from 0.5 acres of developed area (60% impervious) prior to discharging to Capehart Brook.
- The City of Bangor Public Works Department became familiar with construction and maintenance of subsurface bioretention cell treatment systems.
- The runoff going to Capehart Brook from the project area has been reduced by 50%. The remainder of the runoff from the project area is cooled, filtered, and attenuated, mitigating its impact on Capehart Brook.
- The bioretention cell portion of the project prevents an estimated 5.7 tons of sediment, 6.6 lbs. of Phosphorus and 9.1 lbs. of Nitrogen from entering Capehart Brook annually.
- The rain barrel and rain garden portion of the project remove an additional 0.21 pounds of phosphorous and 1.2 pounds of Nitrogen from entering Capehart Brook annually.



Downeast School biocell during construction.



Downeast School biocell after construction.

PROJECT PARTNER:

Bangor Housing Authority

CONTACT INFORMATION:

Greg Beane, DEP, 299-4703 greg.e.beane@maine.gov

Wynne Guglielmo, Environmental Coordinator, City of Bangor,
949-3819, Wynne.Guglielmo@bangormaine.gov

Cochnewagon Lake NPS Watershed Protection Project, Phase I #2011RR02

Waterbody Name: Cochnewagon Lake

Location: Monmouth, Kennebec County

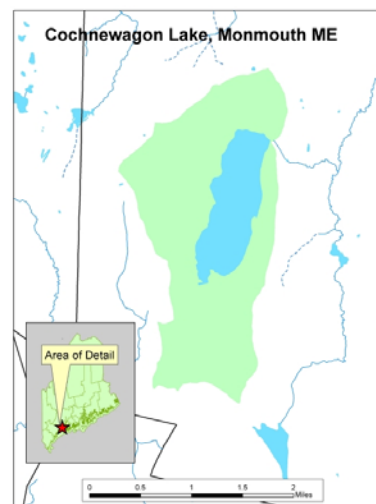
Waterbody Status: Impaired, NPS Priority Watershed

Project Grantee: Cobbossee Watershed District (CWD)

Project Duration: January 2011 – March 2013

319 Grant Amount: \$81,005

Local Match: \$81,838



PROBLEM:

Cochnewagon Lake is a prominent feature in Monmouth. The public beach and boat launch on this 386 acre lake is in walking distance from downtown. Development in the lake's 3.4 square mile watershed consists mostly of year-round non-shorefront homes, seasonal homes along the shoreline, upland dairy farmland, and gravel roads.

The lake, which flows to Annabessacook Lake, had a history of algae blooms until an alum treatment in 1986. The alum treatment was a major project spearheaded by the CWD with funding and support from the EPA and DEP. After the treatment, transparency improved to 5.5 to 8.0 meters from 1986 to 2004. After many years of good water quality, water clarity decreased and severe algae blooms returned starting in 2006. As a first step in developing a strategy to improve lake water quality, the CWD with local support and a 319 grant (#2008PP29), conducted a lake watershed survey in 2009. The survey found that BMPs to control sediment and erosion problems along roads were a top priority for reducing NPS phosphorus in the watershed. Shoreland residential properties were also found to lack conservation practices that could reduce near-shore NPS contributions.

PROJECT DESCRIPTION:

The Cochnewagon Lake NPS Watershed Protection Project, Phase 1, implemented BMPs at NPS pollution sites along roads and the lakefront to reduce sediment and phosphorus loading to the lake and alleviate late summer algae blooms. The project installed BMPs at 20 road and 11 shore sites. CWD entered into cost-sharing agreements with the Town of Monmouth for NPS sites on public roads and with private road associations for NPS sites on private camp roads. The Friends of Cobbossee Watershed (FOCW) employed their Youth Conservation Corps (YCC) to install BMPs at shorefront sites where property owners contributed the cost of materials. This successful BMP implementation project established a stronger partnership between CWD, FOCW, the Town of Monmouth, and the watershed residents who participated in the road and shore projects.

PROJECT OUTCOMES:

- Installation of BMPs on twenty road sites, including significant projects on both public and private roads, stabilizing driveways, roads, ditches, and culverts, installing ditch turnouts and plunge pools, and renovating a wet pond;
- Implementation of eleven shorefront BMPs by the local Youth Conservation Corps;
- Technical assistance visits to sixteen shorefront properties;
- Reduction of pollutant loading to the pond by an estimated 65 tons of sediment and 58 pounds of phosphorus annually (WEPP and Region 5 methods); and
- Demonstration of road and shoreline BMPs that were not generally in use in the watershed and which resulted in inquiries from interested residents and interest in future BMP work.

1st Place State of Maine Excellence Award

Significant reconstruction of eroding sections of the town-owned Packard Road was completed. The Packard Road project won a 1st Place State of Maine Excellence Award at the 2012 Highway Congress sponsored by the American Public Works Association



Before – eroding bank and ditch



During – removing bank, including large boulders



After – bank removed, slope stabilized, ditch installed

PROJECT PARTNERS:

Town of Monmouth
Friends of Cobbossee Watershed
Dearborn Ridge Road Association
P2 Road Association
Shorefront property owners

CONTACT INFORMATION:

Kristin Feindel, Maine DEP – (207) 215-3461, Kristin.b.feindel@maine.gov, www.maine.gov/dep
Wendy Dennis, CWD – (207) 377-2234, cwd@fairpoint.net

Concord Gully Brook Watershed Survey

#2011PP20

Waterbody Name: Concord Gully Brook

Location: Freeport - Cumberland County

Waterbody Status: Urban Impaired Stream

Project Grantee: Town of Freeport (assisted by Cumberland County Soil & Water Conservation District)

Project Duration: January 2012 – December 2013

319 Grant Amount: \$15,385

Local Match: \$7,966



PROBLEM:

Concord Gully Brook has a watershed area of 0.9 square miles. The main stem of the brook is approximately 1.5 miles in length. The main stem receives input from three tributaries, the primary one being Porters Landing Brook that drains the northern, more heavily developed part of the watershed. The brook drains to Allen’s Pond, a dammed wetland which discharges to the Harraseeket River. Land use consists of commercial, residential, industrial, highway, roads, and forest. Development is concentrated in the northern part of the watershed which drains portions of the commercial downtown area and the Route 1 corridor. Portions of the watershed are also largely forested including the riparian corridor. Overall, the watershed has 22% impervious cover.

Concord Gully has a statutory water quality classification of Class B, but it does not meet its designated uses and criteria. The causes of non-attainment are aquatic life and habitat assessment. Stormwater runoff from impervious areas is the largest contributor to impairment. Bacteria monitoring in 2012 and 2013 indicates that the stream also fails to meet standards for bacteria. Additional monitoring was also recently completed by Cumberland County Soil & Water Conservation District (District) and Maine DEP. Monitoring shows that the brook is experiencing high conductivity and chloride levels likely due to ongoing and historic winter salt sources and periodic low dissolved oxygen in one tributary that drains a developed portion of the watershed along Main Street.

PROJECT DESCRIPTION:

The purpose of the project was to identify, document, and prioritize soil erosion and polluted runoff sites, and recommend best management practices. An additional goal was to complete a stream corridor survey to document riparian and habitat conditions. Between June and October 2012 the District, project partners, and volunteers completed a watershed survey. The District, Maine DEP, and a volunteer completed the Stream Corridor Survey. Also a geomorphology assessment of the stream was completed by in 2013.



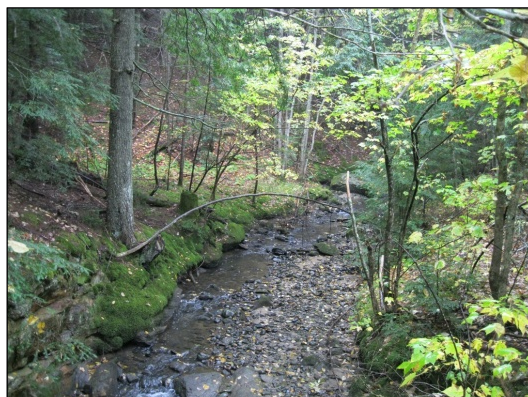
Concord Gully Brook watershed survey, eroded parking area.

PROJECT OUTCOMES:

- Four steering committee meetings were held that included representatives from the town, business community, and watershed representatives. Ten citizen volunteers participated in the project.
- 45 NPS problem sites were identified: 2 high impact, 24 medium impact and 19 low impact. Impacts are primarily from parking lots and roads and are clustered in the commercial district.
- The “Concord Gully Watershed Survey” and “Fluvial Geomorphic Assessment of Concord Gully Brook in Freeport, Maine” reports were completed.
- Sediment transport from land use is minimal. Total soil loss from high and medium impact sites is estimated to be 5.73 tons per year and phosphorus loading is 4.87 pounds per year.
- The Fluvial Geomorphic Assessment led by John Field Geology Services identified contrasting morphologies between the main stem and Porters Landing Brook which is incised with unstable banks, has poor pool formation, and lacks flow complexity; while the main stem has a meandering channel, with access to the flood plain and ample wooded cover.
- The project focus transitioned into the Watershed Management Plan development during 2013, and there is considerable energy to develop a locally supported watershed based management plan.



Porters Landing Brook, degradation due to high flows.



Concord Gully Brook main stem.

PROJECT PARTNERS:

Casco Bay Estuary Partnership
Cumberland County Soil & Water Conservation District
Maine Department of Environmental Protection

Citizen Volunteers
L.L. Bean
Maine Department of Transportation

CONTACT INFORMATION:

Mary Ellen Dennis, Maine DEP – (207) 215-7946, mary-ellen.c.dennis@maine.gov
Albert Presgraves, Town of Freeport – (207) 865-4743, apresgraves@freeportmaine.com
Kate McDonald, Cumberland County SWCD – (207) 892-4700, kmcdonald@cumberlandswcd.org

Crescent Lake NPS Watershed Protection Project

#2011RR03

Waterbody Name: Crescent Lake

Location: Raymond and Casco - Cumberland County

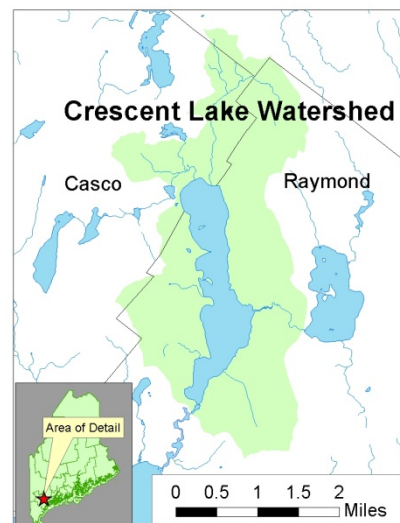
Waterbody Status: NPS Priority Watersheds, Most At Risk

Project Grantee: Town of Raymond

Project Duration: April 2011 – December 2013

319 Grant Amount: \$79,133

Local Match: \$238,217



PROBLEM:

Crescent Lake covers 716 acres and has a direct watershed of 6.1 square miles. Several smaller lakes flow into Crescent Lake which then flows into Panther Pond and Sebago Lake, a public drinking water source for over 45,000 households in Southern Maine. Crescent Lake is developed with over 290 seasonal and year-round homes, a commercial campground, several private youth camps, two public beaches, one formal boat access and an extensive network of private unpaved camp roads.

The Maine DEP and Raymond Waterways Protective Association (RWPA) have monitored Crescent Lake’s water quality since 1974. Water quality is considered above average, however there is significant depletion of dissolved oxygen in the hypolimnion in late summer. The Raymond Conservation Commission spearheaded a watershed survey in 2000, and the Raymond Pond and Crescent Lake BMP Demonstration Project (#2001R-03) addressed 13 NPS sites and provided technical assistance to 12 landowners in the watershed. The Crescent Lake Watershed Association (CLWA) formed in 2009 to promote lake protection. CLWA also joined the Maine Lake Society’s LakeSmart program in 2009, and 14 full awards have since been issued to lake-friendly properties on Crescent Lake.

PROJECT DESCRIPTION:

The project’s purpose was to significantly reduce erosion and export of sediment and phosphorus to Crescent Lake. In 2009, project staff and volunteers visited sites from the 2000 watershed survey and identified 70 priority areas. The project installed conservation practices at 21 of these priority sites and provided small matching grants to address problems at another 11 residential properties. A NPS Site Tracker was created to catalog NPS sites and projects. Project outreach activities included presentations at the CLWA’s annual meetings; three hands-on workshops; targeted mailings to landowners with identified NPS sites; and a final brochure and tour highlighting project activities.



Many projects around the lake were completed with help from CLWA Board members and local residents.

PROJECT OUTCOMES:

- The project fixed 21 of the priority erosion problems in the watershed reducing pollutant loading to Crescent Lake by an estimated 25 tons of sediment and 22 lbs of phosphorus per year (Region 5 Method and WEPP Model). Another 11 residential sites were addressed through a small matching grants program.
- The Town of Casco replaced undersized culverts on Edwards Road with three large concrete box culverts to address chronic road washouts, improve fish passage, and improve public safety. The CLWA funded preliminary engineering work and the Town contributed over \$165,000 in match.
- The project successfully engaged several of the lake’s summer camps. Project staff provided technical assistance to two camps and completed a series of projects at Camp Laurel South, which experienced severe erosion on its steep beach access. A 200’ long drainage swale was constructed to intercept and divert runoff; plants were installed at the top of the beach area; a rain garden was installed; and bare soil was covered with erosion control mulch. Work was completed with \$7,436 in grant funding and \$12,571 in match.
- The 2000 watershed survey was updated, and 70 NPS sites were documented. A NPS Site Tracker was created to document and track site conditions over time. This information was used to develop the *Crescent Lake Watershed-based Protection Plan* (2013) and apply for a second 319 grant. The Town of Raymond was awarded a 319 grant for a Phase II project, which will begin in 2014.



After completing work through the project, three property owners (including the one shown above) received LakeSmart awards, which recognize lake-friendly properties.

PROJECT PARTNERS:

Crescent Lake Watershed Association	FB Environmental Associates
Raymond Waterways Protective Association	Town of Casco
Town of Raymond	

CONTACT INFORMATION:

Wendy Garland, Maine DEP – (207) 615-2451, wendy.garland@maine.gov
 Don Willard, Town of Raymond – (207) 655-6994, don.willard@raymondmaine.org
 Patrick Marass, FB Environmental – (207) 221-6699, info@fbenvironmental.com

Great East Lake and Wilson Lake Watershed Implementation (Phase I Maine) #2012RR01

Waterbody Name:	Great East Lake and Wilson Lake
Location:	Acton – York County
Waterbody Status:	NPS Priority Watershed
Project Grantee:	Acton Wakefield Watersheds Alliance
Project Duration:	February 2012 – February 2014
319 Grant Amount:	\$67,641
Local Match:	\$83,616



PROBLEM:

Wilson Lake lies entirely in Maine and Great East Lake lies on the border between Wakefield, New Hampshire and Acton, Maine. Great East Lake covers 1,707 acres and its watershed covers 15.3 square miles. Wilson Lake covers 208 acres with a watershed of 3.9 square miles. Great East Lake is developed with over 700 homes, and Wilson Lake is surrounded by over 200 homes. Each lake has a public boat launch, and Great East Lake is widely used for recreation with an average of 1500 visiting boats each season. Both lakes drain into Horn Pond and comprise the headwaters of the Salmon Falls River, which flows along the state border and serves as a drinking water supply for over 28,000 people.

Volunteers have monitored water quality on both lakes for several decades. Water quality on Great East Lake is considered outstanding, and Wilson Lake's water quality is average with high oxygen depletion in late summer. In 2006 the Acton Wakefield Watersheds Alliance (AWWA) formed to protect the water quality of ten lakes in Acton and Wakefield. AWWA's summer Youth Conservation Corps (YCC) has since installed BMPs on numerous properties on Great East and Wilson Lakes. In 2008, AWWA received a NH 319 grant to complete a watershed-based plan for the upper Salmon Falls River watershed. The project included a watershed survey on Great East Lake, which identified 177 NPS sites. In 2009, DEP and the Wilson Lake Association carried out a watershed survey that identified 72 NPS sites. In 2010, NH DES funded a project to fix NPS problems on the NH side of Great East Lake's watershed.

PROJECT DESCRIPTION:

The purpose of the project was to reduce erosion and pollutant loading to Wilson Lake and Great East Lake. All work was focused in Maine. Cost-sharing assistance was provided to road associations to fix priority NPS problems on seven road sites and AWWA's YCC provided labor to address 16 residential sites. Project staff provided technical assistance to 42 landowners and carried out three septic socials and one road social, which led to the formation of a road association. Project information was shared with the community through lake association newsletters, the AWWA website, annual YCC video tours, and YCC project signs.



2012 YCC Crew holding a rubber razor

PROJECT OUTCOMES:

- The project installed conservation practices on seven private road sites to remedy high priority, chronic erosion problems identified in the watershed surveys. The initial work plan called for work on five road sites, but the projects were completed under budget, which allowed the project to complete more work than anticipated.
- AWWA’s YCC program installed 73 BMPs on 16 project sites in the project areas on Great East (12 projects) and Wilson Lake (four projects). Seven of the projects on Great East Lake were in the Langley Shores neighborhood where the project’s road work helped spark landowner interest and participation in the YCC.
- Work completed through the project reduced pollutant loading to Great East Lake by an estimated 29.1 tons of sediment and 24.6 pounds of phosphorus per year and to Wilson Lake by an estimated 9.9 tons of sediment and 8.3 pounds of phosphorus per year (Region 5 Method and WEPP Model).
- Approximately 40 local residents attended the project’s three septic socials and one road social. The road social took the form of a meeting with residents of Lakeside Drive interested in forming a formal road association. The group has now drafted bylaws and is planning to hold their first meeting in 2014. A follow-up survey was sent to septic social participants to find out if the workshop led to behavior changes. Although only seven people participated, several people changed their water use, detergent use, and septic system maintenance because of what they learned.



Abbott and Jericho Roads – 400’ of eroding gravel road was crowned and paved, and water redirected into ditches. The grant provided \$3,500 and the road association provided almost \$2,000 in match.



Langley Shores Road – 150 feet of steep gravel road was paved, and a catch basin was installed at the base to infiltrate runoff and capture sediment before it washes into the lake.

PROJECT PARTNERS:

Great East Lake Improvement Association
 New Hampshire Department of Environmental Services
 York County Soil and Water Conservation District

Town of Acton
 Wilson Lake Association

CONTACT INFORMATION:

Wendy Garland, Maine DEP – (207) 615-2451, wendy.garland@maine.gov
 Linda Schier, AWWA – (603) 473-2500, info@AWwatersheds.org, www.AWwatersheds.org

Moose Pond Watershed Implementation Project, Phase I

#2012RR03

Waterbody Name: Moose Pond

Location: Bridgton, Denmark, and Sweden – Cumberland and Oxford Counties

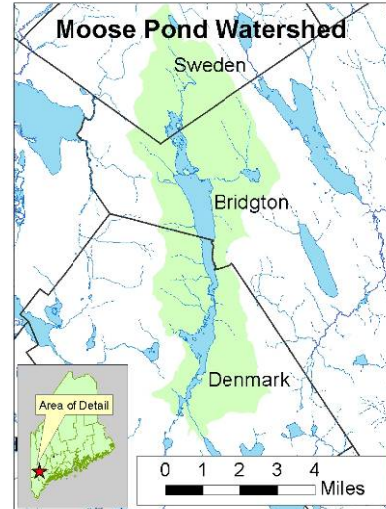
Waterbody Status: NPS Priority Watershed

Project Grantee: Cumberland County SWCD

Project Duration: January 2012 – January 2014

319 Grant Amount: \$60,371

Local Match: \$43,266



PROBLEM:

Moose Pond has three distinct basins with a combined surface area of 1,617 acres. The lake sits at the base of Pleasant Mountain, and its shoreline is fringed with three public boat launches, a scenic public picnic/rest area on Route 302, a public beach, a private campground, two summer residential youth camps and numerous homes. The 17.4 square mile watershed includes the Shawnee Peak Ski Area and is part of the Saco River watershed.

Lakes Environmental Association (LEA) and local volunteers have monitored Moose Pond water quality since 1976. The uppermost basin, which is located in the least developed part of the watershed, is considered to have above average water quality. The lower two basins show moderate oxygen depletion in the bottom waters of the lake, which can limit the pond’s cold-water fish habitat. As a result, LEA rates Moose Pond as a moderate to high degree of concern.

In 2010, CCSWCD along with Moose Pond Association (MPA), LEA, and volunteers conducted a 319-funded watershed survey and identified 208 sites with soil erosion and uncontrolled runoff to the lake. Of these 208 sites, 23 were rated as having a high impact to water quality, 75 as medium impact, and 110 as low impact. Sites were found on residential properties (73 sites), town roads (34 sites), commercial properties (30 sites), driveways (24 sites), beach access (18 sites), and private roads (17 sites).



Moose Pond

PROJECT DESCRIPTION:

The primary purpose of this project was to reduce erosion and export of sediment and phosphorus into Moose Pond. Another purpose was to raise awareness about watershed problems and work to foster long-term watershed stewardship. Conservation practices that reduce erosion and polluted runoff were installed at 25 sites throughout the watershed. Work was conducted through successful collaboration between four local water protection organizations: CCSWCD, LEA, MPA, and OCSWCD.

PROJECT OUTCOMES:

- Installation of conservation practices at 11 priority sites. Work included ditch creation and stabilization, construction of a riprapped swale, gravel road improvements, installation of culverts, and stabilization with erosion control mulch and riprap.
- Installation of 28 conservation practices on 14 matching grant sites. Matching grant recipients were offered 50/50 cost share up to \$300 to install recommended conservation practices.
- Completion of nearly 50 technical assistance site visits, including providing written recommendations for most of the sites.
- Reduction of an estimated 62.5 tons of sediment and 53.1 pounds of phosphorus per year entering Moose Pond (WEPP and Region 5 Methods).



This heavily eroded access site on the Route 302 causeway in Bridgton was stabilized using stone riprap and erosion control mulch. Key goals of protecting water quality include diverting, spreading out, and infiltrating runoff.



Erosion along this residential walkway was addressed using lumber and crushed stone to create steps or tiers, and bare soil was covered with three to four inches of erosion control mulch.

PROJECT PARTNERS:

Lakes Environmental Association
Town of Bridgton

Moose Pond Association
Town of Denmark

Oxford County SWCD

CONTACT INFORMATION:

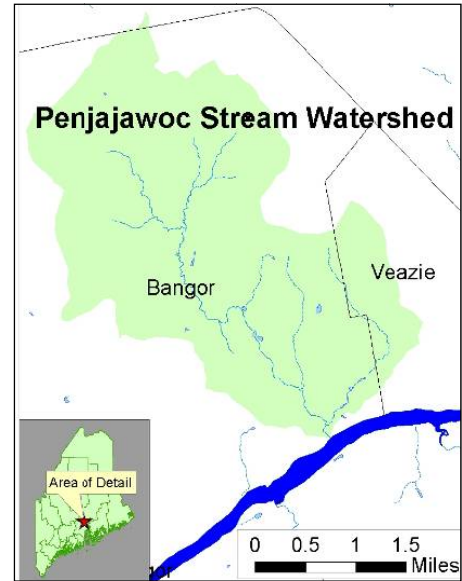
Kristin Feindel, DEP – (207) 215-3461, kristin.b.feindel@maine.gov

Heather True, Cumberland County SWCD – (207) 892-4700, htrue@cumberlandswcd.org

Penjajawoc Stream Watershed LID Retrofit Project

#2012RT05

Waterbody Name: Penjajawoc Stream
 Location: Bangor, Penobscot County
 Waterbody Status: Urban Impaired Stream
 Project Grantee: City of Bangor
 Project Duration: February 2012 – October 2013
 319 Grant Amount: \$36,620
 Local Match: \$36,084



PROBLEM:

The Penjajawoc Stream TMDL (draft) stated that “the most probable cause of aquatic life impairment in Penjajawoc Stream is a combination of unmitigated stormwater and a complex array of pollutants transported by nonpoint-sources and urban stormwater runoff”. The TMDL further recommends that “hot-spot” areas be prioritized for mitigation actions based upon proximity and connectedness to the stream. Swett’s convenience store and service center (Swett’s) is considered a “hot-spot” by DEP since it receives a high volume of automobile traffic, is located close to the stream, and is directly connected to the stream via 200 feet of underground pipe. Swett’s owners estimate they receive 600 vehicles at their business on an average day, which contribute pollutants to nearby Penjajawoc stream.

PROJECT DESCRIPTION:

Stormwater from Swett’s and a portion of Hogan Road will now be treated by a filter-equipped catch basin on Hogan Road. Curbing was also installed along the edge of Swett’s gas pump area to direct stormwater to a second filter-equipped catch basin in the corner of their parking lot. The two hydrocarbon specific filter-equipped catch basins will treat runoff from 33,300 square feet of impervious area. The catch basin filter inserts are a best management practice (BMP) for pollutant removal. As part of the purchase contract, the manufacturer will provide the first three years of inspection and maintenance of the filters. The City of Bangor will maintain the catch basin inserts and replace the filter cartridges as needed after the initial three year contract with the manufacturer expires. Additionally, an eroding ditch along the north side of Sylvan Road was stabilized with geotextile fabric and riprap, thus removing this source of sediment into Penjajawoc stream by eliminating ongoing erosion.



Swett's convenience store and service station, a hotspot in the Penjajawock Stream watershed.

PROJECT OUTCOMES:

- This project captures and filters hydrocarbons and other pollutants from a busy service station and convenience store located along a major arterial roadway. Stormwater treatment was achieved by directing runoff into two catch basins equipped with filters. FABCO Industries, Inc. inserts (filter casings were fitted with cartridges specifically designed to remove hydrocarbons) in drainage structures are a best management practice (BMP) for hydrocarbon removal. The total impervious area receiving treatment is 33,300 square feet.
- Over 400 linear feet of eroding ditch on Sylvan Road was re-shaped and stabilized with riprap eliminating a large source of sedimentation into Penjajawoc Stream. This ditch receives runoff from 32 acres adjacent to Sylvan Road, much of which is impervious.
- Catch basin filter inserts are a relatively new water quality treatment method and the City of Bangor and its contractors became familiar with this method of filtration treatment during this project.
- An estimated 1.74 tons of sediment and 2.5 pounds of hydrocarbons per year will be prevented from going into Penjajawoc Stream.

PROJECT PARTNERS:

Swett's Convenience Store and Service Station

CONTACT INFORMATION:

Greg Beane, DEP, 299-4703,
greg.e.beane@maine.gov

Wynne Guglielmo, Environmental Coordinator,
City of Bangor, 207-949-3819,

Wynne.Guglielmo@bangormaine.gov



Filter-equipped catch basin installed in Swett's parking lot.



Crew installing a filter-equipped catch basin at the entrance to Swett's along Hogan Road.



400 feet of linear ditch stabilized with filter fabric and riprap along Sylvan Road.

Pleasant River Watershed Restoration Project, Phase I

#2011RT04

Waterbody Name:	Pleasant River
Location:	Gray and Windham - Cumberland County
Waterbody Status:	NPS Priority Watershed, Impaired
Project Grantee:	Cumberland County Soil & Water Conservation District (CCSWCD)
Project Duration:	January 2011 – September 2013
319 Grant Amount:	\$60,032
Local Match:	\$46,304



PROBLEM:

The Pleasant River has a 29 square mile watershed. The headwaters originate at Gray Meadows and Thayer Brook in Gray. Many smaller tributaries and wetlands feed the river including Wiggins Brook, Allen Bog, Baker Brook, and Ditch Brook which drains Collins Pond. The Pleasant River joins the Presumpscot River which drains to Casco Bay. Land uses in the watershed include forest - 69%, agriculture- 14%, wetlands- 4%, open space- 4%, and development- 9%. The Maine Department of Inland Fisheries and Wildlife manages the river for cold water fisheries, stocking Brown Trout and Brook Trout. Native Brook Trout are also present in the river and tributaries. As a result, the river is one of the most prized fly-fishing rivers in Southern Maine. Pleasant River does not attain Class B water quality standards due to high levels of bacteria and low dissolved oxygen.

In 2006, Casco Bay Estuary Partnership (CBEP), in conjunction with the Presumpscot River Water Coalition (PRWC) was awarded a Targeted Watershed Initiative Grant from the USEPA. This helped to initiate on-the-ground fixes throughout the Presumpscot River watershed. Presumpscot River Watch was awarded federal 604(b) funds to carry out a watershed survey of Pleasant River conducted from 2008-2009. In 2011, CCSWCD, with funding from CBEP and in partnership with local stakeholders, completed a watershed-based management plan describing actions needed to restore the river.

PROJECT DESCRIPTION:

The purpose of the project was to reduce erosion and export of sediment and phosphorus into the Pleasant River. Conservation practices that reduce erosion and polluted runoff were to be installed at 14 of the highest priority sites identified in the watershed survey. Another goal was to raise awareness about watershed problems and work to foster long term watershed stewardship.

The workplan focused on addressing 14 high priority sites. However many sites were not addressed due to high costs in addressing key sites or disinterest from agricultural landowners whose properties were identified in the survey. However, six NPS sites were addressed including three road sites and three sites with significant bank failure and erosion. Additionally, technical assistance was provided on 25 sites and significant outreach occurred, in part during the attempts to find additional projects.

PROJECT OUTCOMES:

- Outreach, site visits, and recommendations were provided for 25 sites (nine agriculture, six private landowners, five Town of Gray, two Town of Windham, two private roads, and one Department of Transportation site).
- Six large abatement sites were addressed. BMPs installed at the three road sites included inlet/outlet stabilization, new road ditches, sediment basins, and gully and bank stabilization. Severe bank erosion was addressed along Windham High School's cross country trail (12' x 28' exposed river bank) and a 30' landslide on private property following recommendations provided by a geomorphologist. A vegetated buffer was installed and shoreline stabilized at another private property.
- Over 72 tons of sediment per year is no longer reaching the Pleasant River due to BMPS installed.
- The Town and landowners increased their awareness about the Pleasant River and NPS pollution. Public works staff for the towns of Windham and Gray received technical assistance and education that should result in ongoing improved road maintenance practices.
- Outreach and education included the following: presentation to the Gray Town Council; information to the Windham Town Council; numerous newspaper and newsletter articles advertising the grant and its opportunities; four Yardscaping presentations providing landowners with information on lawns and impacts to water quality; and creation and distribution of a final brochure provided to the towns, steering committee, and interested residents highlighting the accomplishments of this project.



Windham High School trail riverbank stabilization



Vegetative buffer, residential property in Windham

PROJECT PARTNERS:

Maine Department of Environmental Protection
Casco Bay Estuary Partnership
Watershed Residents

Presumpscot River Watch
Towns of Gray and Windham

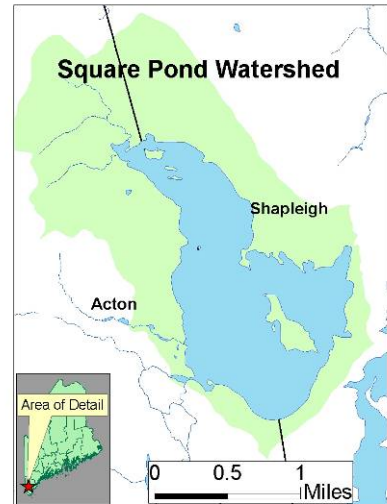
CONTACT INFORMATION:

Mary Ellen Dennis, Maine DEP – (207) 215-7946, mary-ellen.c.dennis@maine.gov
Heather True, Cumberland County SWCD – (207) 892-4700, htrue@cumberlandswcd.org

Square Pond NPS Watershed Protection Project, Phase II

#2011RR01

Waterbody Name: Square Pond
 Location: Acton and Shapleigh – York County
 Waterbody Status: NPS Priority Watershed
 Project Grantee: York County SWCD
 Project Duration: February 2011 – December 2013
 319 Grant Amount: \$54,853
 Local Match: \$85,067



PROBLEM:

Square Pond is a 910 acre lake with a direct watershed of 4.3 square miles. Square Pond flows into Goose Pond and then Mousam Lake, which was removed from the state’s impaired waters list in 2006. The pond is highly developed with over 500 seasonal camps and year-round homes, a state-owned boat launch, and a town-owned beach. About 80 seasonal homes are located on Treasure Island. The residents operate their own ferry service to the island, which does not have formal roads or automobiles.

The Square Pond Improvement Association (SPIA) and Maine DEP have monitored the pond’s water quality since 1977. Data indicate that the lake currently has above average water quality. However, the pond is at risk due to its high density shoreline development and moderate oxygen depletion in one of the two basins. York County SWCD led a 2006 watershed survey (#2006P-12), which identified 207 NPS sites including a mix of residential areas- 67%, beaches- 10%, driveways- 8%, and private and town roads- 8%. A Phase I project (#2008RR11) fixed 21 priority NPS sites through cost-sharing grants and 16 NPS sites through the Acton Shapleigh Youth Conservation Corps (ASYCC) program. Six septic socials were conducted to raise awareness about septic system maintenance, and 20 landowners received technical assistance.

PROJECT DESCRIPTION:

The project goal was to address priority NPS sites from the watershed survey and continue to strengthen relationships with landowners and project partners. Cost-sharing assistance to address 22 large-scale NPS sites was provided to towns, road associations, and private landowners. The ASYCC also provided labor to install conservation practices at 34 residential sites. Technical assistance was provided to 32 landowners, and five septic socials were conducted. Project outreach included four project newsletters that were mailed to 500 landowners, installation of signs at six road projects, and presentations at SPIA meetings. Refrigerator magnets listing lake protection tips were also created and provided to rental units on the lake.



Landowners install a rubber razor to divert driveway runoff into a buffer.

PROJECT OUTCOMES:

- The project fixed erosion problems at 24 NPS sites (exceeding the goal of 22 sites). As a result, pollutant loading to Square Pond was reduced by an estimated 12.4 tons of sediment and 10.2 pounds of phosphorus per year (Region 5 Method and WEPP Model). Of the 17 high-impact sites identified in the 2006 watershed survey, to date 15 have been fixed and another site is in the process of being addressed by the landowner.
- The Acton Shapleigh YCC completed 34 projects (far exceeding the goal of 12 sites). York County SWCD and YCC staff completed 32 technical assistance visits. Nearly 80% of the landowners that received technical assistance from York County SWCD went on to complete some or all of the recommended conservation practices.
- 38 people attended five septic socials, which were hosted by local residents, the Treasure Island Landowners Association (TILOA) and SPIA Board members. The socials provided a relaxed setting for participants to learn about septic system function and maintenance.
- The Towns of Acton and Shapleigh and local organizations have continued to demonstrate strong commitment to lake protection. This is exemplified by the strong local match on the project (nearly \$28,000 more than planned) and ongoing annual contributions to the Acton Shapleigh YCC program. The 2013 annual golf tournament alone secured over \$20,000 for the YCC program.



PROJECT PARTNERS:

Acton Shapleigh Youth Conservation Corps
Town of Acton
Treasure Island Landowners Association

Square Pond Improvement Association
Town of Shapleigh

CONTACT INFORMATION:

Wendy Garland, DEP – (207) 615-2451, wendy.garland@maine.gov

Joe Anderson, York County SWCD – (207) 324-0888

Theresa Galvin, York County SWCD – (207) 324-0888, tgalvin@yorkswcd.org

Toddy Pond Watershed Survey

#2011PP19

Waterbody Name: Toddy Pond

Location: Orland, Surry, Penobscot, Blue Hill – Hancock County

Waterbody Status: Attains Class GPA

Project Grantee: Hancock County Soil and Water Conservation District

Project Duration: January 2012 – May 2013

319 Grant Amount: \$17,941

Local Match: \$12,032



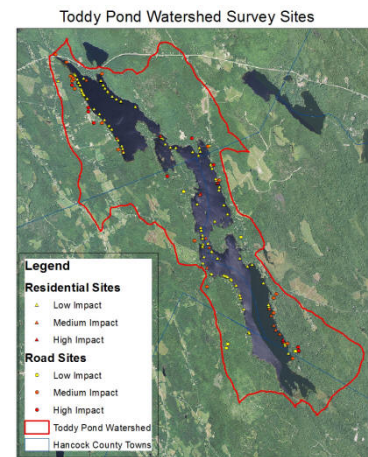
PROBLEM:

The Toddy Pond watershed is experiencing significant development pressure. Many summer camps have been converted to year-round residences and poorly built, inadequately maintained camp roads and driveways are getting heavier use. These factors indicate an increasing threat of NPS pollution entering Toddy Pond from developed areas in the watershed. It is important to document these NPS issues and work towards correcting them before the water quality of Toddy Pond experiences a substantial decline.

Since 1977, water quality data has been collected on Toddy Pond by the Maine DEP and the Volunteer Lake Monitoring Program. The water quality of Toddy Pond is considered to be above average and the potential for nuisance algae blooms is low. However, secchi disk readings show a decline of almost two meters in water clarity in the last ten years.

PROJECT DESCRIPTION:

The watershed survey was managed by Hancock County Soil and Water Conservation District (the District) and guided by a Steering Committee consisting of the Toddy Pond Association, Maine DEP, towns of Orland, Surry, Blue Hill, and Penobscot, Toddy Pond watershed residents, and University of Maine Cooperative Extension (UMCE). The Steering Committee was the force behind the planning and implementation of the watershed survey. The entire Toddy Pond watershed was surveyed during this project. The District and the UMCE trained the volunteers, completed the follow-up survey, and produced the survey report. The community was informed of project activities through an initial mailing to watershed residents, articles in the District newsletter and on their website, press releases to local newspapers, the Toddy Pond Association newsletter, and at the Toddy Pond Association Annual Meeting. During the survey, volunteers distributed educational materials to watershed residents and took the opportunity to speak with residents regarding NPS problems, their impacts on water quality, and potential solutions and fixes.



PROJECT OUTCOMES:

- This project successfully created the Toddy Pond Watershed Survey Report which summarizes the findings of the watershed survey and gives information on the number and nature of the NPS sites, the severity of each site's erosion problems, the recommended fixes, influence on the water quality of the lake, and the cost and technical level needed to fix the problem.
- It was estimated that 176 tons of sediment and 150 pounds of phosphorus per year is getting into the lake from 15 sites of the most significant NPS sites found in the watershed
- Creation of a NPS Site Tracker database which will be used by the Toddy Pond Association to track changes to documented NPS sites and the status of new sites as they are discovered.
- Helped to create a more knowledgeable citizenry on NPS pollution and its effects on Toddy Pond.

PROJECT PARTNERS:

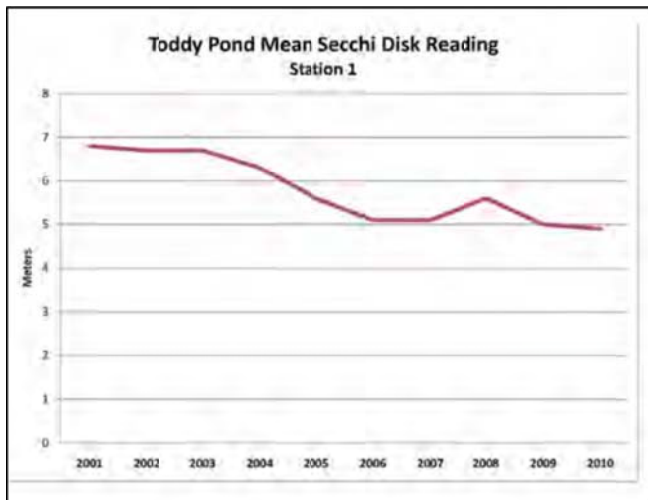
Toddy Pond Association
Towns of Orland, Surry, Penobscot, and Blue Hill
University of Maine Cooperative Extension, Water Quality Program

CONTACT INFORMATION:

Greg Beane, DEP, 299-4703, greg.e.beane@maine.gov
Megan Facciolo, Hancock County Soil and Water Conservation District, 667-8663, hancockcountyswcd@live.com



NPS sites found in the Toddy Pond watershed during the survey.



Upper Prestile Stream Main Stem 1 Watershed Survey 2011PT18

Waterbody Name: Upper Prestile Stream

Location: Easton, Presque Isle, and Westfield-
Aroostook County

Waterbody Status: Impaired, NPS Priority Watershed

Project Grantee: Central Aroostook Soil & Water
Conservation District (CASWCD)

Project Duration: January 2013-December 2013

319 Grant Amount: \$8,336

Local Match: \$6,798



PROBLEM:

The Upper Prestile Stream Main Stem 1 subwatershed is a 5,494 acre drainage for a 6.1 mile long segment of Upper Prestile Stream above the main bridge crossing in Westfield. In 2009, a TMDL assessment report and a watershed based plan (WBP) for Upper Prestile Stream & Christina Reservoir watershed was completed. The Upper Prestile Stream subwatershed is a significant source of polluted runoff to Prestile Stream according to the Generalized Watershed Loading Function Model used to develop the TMDL. Prestile Stream watershed is on the NPS Priority Watersheds list. In 2005, CASWCD used a 319 program grant awarded through the DEP, to develop a watershed management plan for the entire Prestile Stream watershed. The watershed plan calls for continuing subwatershed surveys to determine the sources of NPS pollution in need of attention. CASWCD has previously surveyed Christina Reservoir, Frost, Allen, Williams, and Getchell brooks. A 319 BMP implementation project was completed for the Christina Reservoir subwatershed and a volunteer stream monitoring group assisted in collecting storm event data.

PROJECT DESCRIPTION:

The watershed survey was performed using guidelines outlined in *Stream Survey Manual Volume I: A Citizen's Guide to Basic Watershed, Habitat and Geomorphology Surveys in Stream & River Watersheds*. Natural resource professionals from USDA-NRCS, Maine Forest Service (MFS), MDEP and CASWCD trained students from University of Maine Presque Isle environmental studies class to assist in the survey. Since the major land uses in this watershed are agriculture and forestry, a special agriculture and forestry based data sheet was developed. Surveyors identified and rated NPS pollution sites for potential pollution impact and recommended BMPs for each site. Students were accompanied by a natural resource professional during the survey. The survey was performed predominately in the spring after snowmelt before fields were plowed. An initial flyover of the watershed was completed with the assistance of the MFS. Survey observations, locations and recommended BMPs were recorded in NPS Site Tracker and presented to watershed landowners.

PROJECT OUTCOMES:

- The survey identified 25 NPS sites; 7 were documented as high or medium impact and were the focus of outreach efforts. Seventeen (17) of the identified sites were cropland, 2 sites farm field roads, 2 public roads sites, 2 stream channels, 1 site on pasture/hay land and a 1 recreational trail.
- The Maine Forest Service assisted the CASWCD with surveying the forested land (31% of the landscape) within the Main Stem 1 by providing a helicopter flight and technical assistance. No NPS problem sites were found on forestlands within the Main Stem 1.
- Educated and empowered Main Stem 1 landowners as well as survey volunteers with a greater understanding of NPS pollution and the significance of water quality. This has enabled the students to practice and educate others about conservation stewardship
- Completed an assessment of NPS sites in *Upper Prestile Stream Main Stem 1 Watershed Survey* and produced a report documenting survey findings.

PROJECT PARTNERS:

Maine Forest Service

U.S. Department of Agriculture - Natural Resource Conservation Service & Farm Service Agency
University of Maine at Presque Isle, Environmental Studies Program.

CONTACT INFORMATION:

Kathy Hoppe, DEP 207-540-3134, kathy.m.hoppe@maine.gov

Kassy Michaud, Central Aroostook Soil & Water Conservation District, 207-764-4153,
kathryn.watson@me.nacdn.net



Soil erosion from a farm field.



Gully erosion on an ATV trail with a 10% slope.

Appendix A. NPS Watershed Projects Active in 2013

Project ID# Codes:

20XX Appropriation year of funding source

RR Funding source - Section 319 Clean Water Act / waterbody attains water quality standards

RT Funding source - Section 319 Clean Water Act / waterbody is impaired

PP Funding source - Section 604(b) Clean Water Act

Project Title	Project ID#	Grantee	Grant Amount	Non-federal Match	Date Completed (bold) or To Be Completed
Annabessacook Lake NPS Watershed Restoration Project, Phase II	2011RT15	Cobbosee Watershed District	68,450	52,450	12/31/13
Bear Pond Watershed Survey	2012PP21	Oxford County SWCD	15,960	12,021	12/31/14
Beech Hill Pond Watershed Improvement Project	2012RR02	Hancock County SWCD	58,125	38,770	12/31/14
Beech Hill Pond Watershed Protection Project - Phase II	2013RR01	Hancock County SWCD	48,780	33,755	12/31/15
Capehart Brook NPS Restoration Project, Phase I	2011RT16	Bangor, City of	60,000	42,124	12/03/13
Cobbosee Lake Watershed Survey	2013RR17	Cobbosee Watershed District	23,089	16,062	12/31/15
Cochnewagon Lake NPS Watershed Protection Project, Phase I	2011RR02	Cobbosee Watershed District	81,005	63,365	04/12/13
Concord Gully Brook Watershed Management Plan	2012RT18	Cumberland County SWCD	36,720	29,018	12/31/14
Concord Gully NPS Watershed Survey	2011PP20	Freeport, Town of	15,385	7,966	12/31/13
Crescent Lake NPS Watershed Protection Project	2011RR03	Raymond, Town of	79,133	118,128	01/01/14
Crooked River Protection Project - Phase I	2013RR15	Cumberland County SWCD	98,542	67,418	12/31/15
Dexter Lakes NPS Watershed Project Phase III	2009RR21	Penobscot County SWCD	25,000	18,000	3/15/13
Goodall Brook Watershed Management Plan Development	2012RT17	Sanford, Town of	40,154	43,151	12/31/14
Great East Lake & Wilson Lake Watershed Implementation: Phase I Maine	2012RR01	Acton Wakefield Watershed Alliance	67,641	86,566	01/01/14
Horne Pond NPS Watershed Protection Project	2013RR03	York County SWCD	56,715	57,666	12/31/15

NPS Management Program 2013 Annual Report

Project Title	Project ID#	Grantee	Grant Amount	Non-federal Match	Date Completed (bold) or To Be Completed
Long Pond NPS Watershed Restoration Project, Phase II	2011RT07	Belgrade Regional Conservation Alliance	99,500	88,544	01/01/14
Meduxnekeag River Watershed Based Plan	2012RT19	Southern Aroostook SWCD	13,748	12,580	12/31/14
Moose Pond Watershed Improvement Project	2012RR03	Cumberland County SWCD	60,371	42,068	12/31/14
Nickerson Lake Protection Project - Phase II	2013RR04	Southern Aroostook County SWCD	58,362	38,928	12/31/15
Parker Pond Watershed Protection Project	2012RR23	30 Mile River Watershed Association	62,372	47,124	12/31/15
Pejajawoc Stream Watershed LID Retrofit Project	2012RT05	Bangor, City of	36,620	25,615	11/19/13
Phillips Lake Watershed Protection Project	2013RR02	Hancock County SWCD	59,310	39,560	12/31/15
Pleasant River NPS Watershed Restoration Project, Phase I	2011RT04	Cumberland County SWCD	60,032	46,304	10/21/13
Sebago Lake Watershed Implementation Phase II	2012RR04	Portland Water District	86,484	96,253	12/31/14
Spruce Creek Watershed Protection Project, Phase III	2013RT06	Kittery, Town of	75,750	74,055	12/31/15
Square Pond NPS Watershed Protection Project Phase II	2011RR01	York County SWCD	54,853	57,350	01/01/14
Stroudwater River NPS Watershed Survey	2013RT16	Cumberland County SWCD	18,333	12,905	12/31/15
Sucker Brook Regional Corridor Survey and Watershed Survey	2012PP22	Bangor	27,942	30,910	12/31/14
Thatcher Brook Watershed Based Management Plan	2012RT20	Biddeford	59,958	59,260	12/31/14
Toddy Pond NPS Watershed Survey	2011PP19	Hancock County SWCD	17,941	12,032	05/30/13
Togus Pond Watershed Restoration Project, Phase 3	2013RT07	Kennebec County SWCD	40,800	27,650	12/31/15
Topsham Fair Mall Stream Watershed-based Management Plan Project	2012RT16	Topsham, City of	38,912	26,500	12/31/14
Trout Brook Restoration Project, Phase I	2013RT08	South Portland, City of	70,363	48,072	12/31/15
Upper Prestile Stream Main Stem Watershed Survey	2011PT18	Central Aroostook SWCD	8,336	6,885	12/31/13
Whitten Brook Watershed Restoration Project, Phase I	2012RT15	Skowhegan, Town of	88,649	59,223	12/31/14



Maine Department of Environmental Protection
Bureau of Land & Water Quality
#17 State House Station
Augusta, Maine 04333
www.maine.gov/dep

Don Witherill
Director Division of Environmental Assessment
Donald.T.Witherill@maine.gov
(207) 215-9751

Document available for download at:
<http://www.maine.gov/dep/water/grants/319-documents/reports/>

