



## Maine Department of Environmental Protection

# Nonpoint Source Management Program 2007 Annual Report

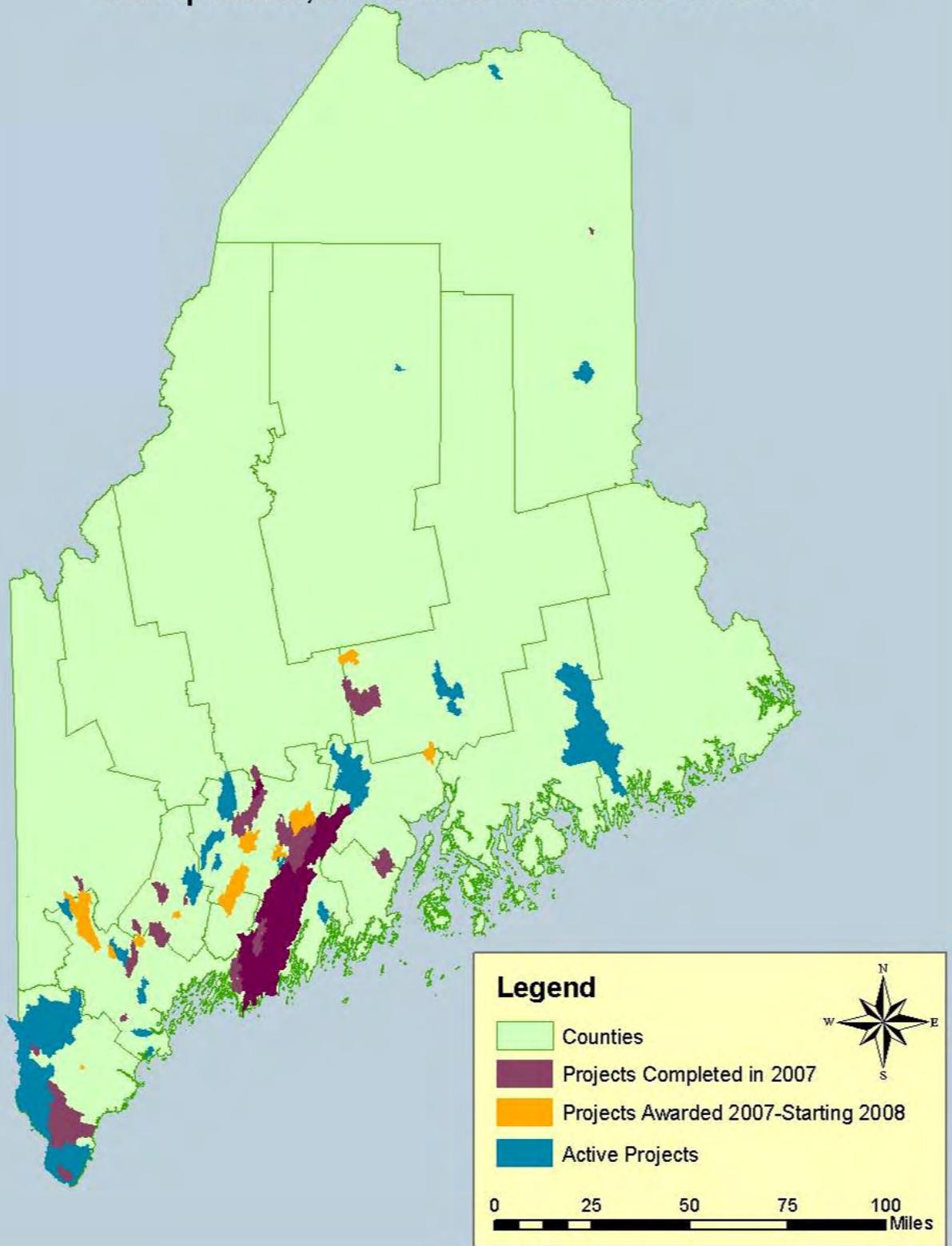
## Executive Summary



**May 2008**

The Maine Department of Environmental Protection acknowledges that preparation and publication of this report was funded, in part, with monies provided by the U.S. Environmental Protection Agency under Section 319 of the Federal Clean Water Act.

# Watersheds With 319 Projects Completed, Awarded or Active in 2007



# Nonpoint Source Management Program Overview

## What is Nonpoint Source Pollution?

Every time it rains, rainwater washes off driveways, roofs, parking lots, roads, agricultural fields, construction sites, forestry operations, and other surfaces carrying with it contaminants to our streams, lakes, ocean and groundwater. That is nonpoint source (NPS) pollution. It is a challenging water quality problem in Maine and throughout America. NPS pollution is caused by excess sediment or nutrients, high bacteria, toxic substances, increased water temperature, altered waterflows, etc. Due to NPS pollution, over 250 lakes in Maine are listed as impaired or most at risk because of increasing development. NPS pollution impairs the water quality of numerous streams and coastal waters.



NPS pollution ranges from sediment, nutrients, bacteria, toxic substances, and increased water temperature.

## Maine's NPS Program

The Department of Environmental Protection (DEP) administers the Nonpoint Source Management Program for the State of Maine. In 2007, DEP received \$2,256,543 from the U. S. Environmental Protection Agency under Section 319(h) of the Clean Water Act. DEP used 319 funding for programs designed to identify, prevent or reduce NPS pollution problems. DEP helped watershed groups across the state assess water quality problems and take action to reduce or remove sources of water pollution. During 2007 there were more than 50 active projects around the state that were funded through the 319 Nonpoint Source Grant Program. DEP also funds a number of programs that are designed to reduce NPS water pollution problems. This report highlights a few of these grant projects and programs. Please refer to the Annual Report for a complete summary.

## 2007 Highlights

- The restoration of Mousam Lake, a three-mile-long lake in York County, was highlighted on the EPA's "Nonpoint Source Program Success Stories" website <http://www.epa.gov/owow/nps/Success319/>.
- Twenty-four (24) NPS Watershed Projects funded through the 319 program in previous years were successfully brought to completion.
  - Restoration or protection work was accomplished in nine (9) lake and three (3) stream watersheds:  
  
Lakes – East Pond, Echo Lake, Lake Auburn, Little Sebago Lake, Middle Range Pond, No Name Pond, Salmon-McGrath Lakes, Sebasticook Lake and Webber Pond.  
  
Streams – Sheepscot River West Branch, Tannery Brook and Upper New Meadows River.
  - NPS Watershed Surveys describing nonpoint pollution sources were completed for six (6) watersheds: McWain Pond, Megunticook Lake, Nequasset Lake, Square Pond, Moose Brook and Spruce Creek.
  - Watershed management plans were created for the Great Works River, the Ogunquit River and the Sheepscot River.
- NPS Watershed Projects completed in 2007 reported estimated reductions in the amount of sediment and phosphorus loading to lakes or streams. In total, pollutant loading was reduced by about 310 pounds of phosphorus and 583 tons of sediment per year, equivalent to about 50 (8 yard) dump truck loads of sediment.

- Fifteen (15) new NPS Watershed Projects were funded through both a competitive grant process and the Watershed Improvement Financial Assistance Partnership, which DEP supported in cooperation with EPA, the Maine Department of Agriculture and Maine's 16 Soil and Water Conservation Districts.
- Significant progress was also made on other 319 funded programs. Some highlights include:
  - Over 1600 people (contractors, engineers, consultants, site evaluators, municipal officials and landowners) participated in training programs to learn methods to prevent NPS pollution sponsored by DEP's Nonpoint Source Training and Resource Center. Seventy-five new individuals were certified in erosion and sediment control practices in the Volunteer Contractor Certification Program.
  - Maine NEMO provides outreach to municipal officials on how land use decisions are linked to water quality in their towns. NEMO provided 19 presentations to 458 people from 80 towns. About one year after a NEMO presentation on low impact development (LID), the Town of York passed a general referendum by a huge margin (2047 to 244) modifying stormwater rules to allow the use of LID techniques.
  - The Maine Lakes Biomanipulation Project continued work to reduce algal blooms East Pond, an impaired lake in the Belgrade Lakes chain, by removing excessive perch populations. The removal will enhance zooplankton populations and ultimately result in higher water transparencies due to increased consumption of blue-green algae by the zooplankton.

## NPS Grants Program

DEP operates a program offering NPS grants for watershed-based projects that take actions to help restore or protect lakes, streams or coastal waters that are impaired or considered threatened by polluted runoff. NPS projects help local communities recognize water pollution sources in watersheds and take action to restore impaired waters or protect clean water. DEP issues grants to help fund three types of watershed-based projects:

- **NPS Watershed Projects**

Projects focus on implementing actions within an entire watershed to improve or protect a waterbody. Projects are designed to result in a significant reduction in NPS pollutant load and improve or protect water quality of a waterbody.

- **NPS Watershed Surveys**

Projects focus on finding, describing and prioritizing NPS pollution sources in a watershed, and recommending Best Management Practices for treating identified NPS sites.

- **Watershed Management Plans**

A watershed-based plan is intended to be a strategic plan for actions needed over a 5 to 15 year timeframe to achieve the load reductions called for in a TMDL to restore an NPS impaired waterbody.

### NPS Water Pollution Control Projects 2007 Summary

Program	# of Projects	Grant Amount	Match Amount
<b>Watershed Improvement Financial Assistance Partnership</b>			
Awarded	4	\$200,000	\$113,921
Completed	4	\$145,500	\$259,009
<b>Competitive Grants (Section 319 Clean Water Act)</b>			
Awarded	14	\$717,346	\$646,815
Started	11	\$559,889	\$436,839
Completed	20	\$910,549	\$827,970
<b>Total Projects Completed</b>	<b>24</b>	<b>\$1,056,049</b>	<b>\$1,086,979</b>

# Sample 319 Grant Projects Completed in 2007

## Echo Lake Watershed Improvement Project

Location: Presque Isle – Aroostook County  
Waterbody Status: NPS Priority Watershed, Impaired  
Project Sponsor: Central Aroostook Soil & Water Conservation District  
Project Duration: February 2004 – April 2007  
Project Cost: \$54,000 (319 Grant), \$52,216 (Local Match), \$18,000 (ME Dept. Ag.)



**Background:** Echo Lake is a shallow, 90-acre lake located on the south end of Presque Isle Township. Echo Lake faces a high risk of water quality problems since it is a small shallow lake with a small watershed and concentrated shoreline development. The lake has been monitored by the DEP and volunteers since 1976 and was placed on the State's list of impaired waters due to declining water quality. In 2001 a watershed survey was completed, and approximately 315 NPS sites were identified. The DEP's Phosphorus Control Action Plan (TMDL Assessment) was finalized in 2007.

### **Project Outcomes:**

- The project succeeded in fixing NPS problems on five town roads, 19 residential lots and four state park sites. Technical assistance was provided for another 130-140 sites. 60% of the high priority NPS sites from the 2001 survey were addressed.
- Annual pollutant loading to Echo Lake was reduced by an estimated 30.5 tons of sediment and 30 pounds of phosphorus per year (WEPP Method and US EPA Region 5 Method). According to the 2007 TMDL report, this amounts to 32% of the annual reduction needed to improve lake water quality.



## Messalonskee Lake Watershed NPS Reduction Project - Phase I

Location: Oakland, Belgrade, Sidney – Kennebec County  
Waterbody Status: NPS Priority Watershed  
Project Sponsor: Belgrade Region Conservation Alliance  
Project Duration: May 2004 – January 2007  
Project Cost: \$66,846 (319 Grant), \$53,331 (Local Match)



**Background:** Messalonskee Lake, also known as Snow Pond, is the last lake in the Belgrade Lakes chain. It has a surface area of 3,506 acres and a watershed area of 46 square miles. Water quality is considered to be average. However, moderate dissolved oxygen depletion and phosphorus levels have led to a continued concern over the future water quality of the lake. A 2003 watershed survey identified 426 erosion sites in the watershed.

### **Project Outcomes:**

- BMPs were implemented on seven camp roads and one driveway (covering two miles). Work included culvert inlet/outlet protection, creation and stabilization of ditches and turnouts, use of geotextile mats to stabilize road bases, and road reshaping. This work reduced pollutant loading to the lake by an estimated 3.1 tons of sediment and 2.2 pounds of phosphorus per year (WEPP Method and Colby Method).
- Thirteen buffer plantings and riprap installation projects were completed by the Belgrade Regional Conservation Corps. Technical assistance was provided to over 40 property owners and camp road associations.



## Middle Range Pond Improvement Project, Phase II Implementation

Location: Poland – Androscoggin County  
Waterbody Status: NPS Priority Watershed, Most at Risk  
Project Sponsor: Androscoggin Valley Soil & Water Conservation District  
Project Duration: January 2004 – July 2007  
Project Cost: \$54,000 (319 Grant), \$118,751 (Local Match), \$16,000 (ME Dept. Ag.)



**Background:** Middle Range Pond is part of a chain of three ponds that flow into the Little Androscoggin River. Monitoring data indicates the pond has above average water quality, but there is moderate depletion of dissolved oxygen during late summer months. In 1993, a cursory survey was conducted of the entire Range Ponds Watershed. From 1995-1998, a 319 project fixed erosion problems on 15 sites. In 2003 a comprehensive survey of the Middle Range Pond watershed identified 70 erosion sites and developed designs for seven priority sites.

### **Project Outcomes:**

- BMPs were installed on 29 priority sites including town roads, private roads, residential areas, commercial areas and driveways. The Town of Poland contributed over \$84,000 in cash match and labor towards the numerous town road sites. This work reduced annual pollutant loading to Middle Range Pond by an estimated 28 tons of sediment and 24 pounds of phosphorus (US EPA Region 5 Method).
- Twelve buffer plantings – along 375 feet of lake and 160 feet of stream – were installed. Local residents, students from a Poland High School environmental class and youth from a local summer camp volunteered to plant four of the buffers.
- Project staff provided technical assistance to 34 landowners during the project period – exceeding the goal of 20 written into the original workplan.



## Spruce Creek Watershed Survey

Location: Kittery and Eliot – York County  
Waterbody Status: NPS Priority Watershed, Impaired  
Project Sponsor: Wells National Estuarine Research Reserve  
Project Duration: May 2005 – January 2007  
Project Cost: \$23,725 (319 Grant), \$19,322 (Local Match)



**Background:** Spruce Creek is located in Kittery and Eliot in southernmost Maine. The 9.6 square mile watershed includes extensive commercial strip malls, roads and larger homes along the stream. The DEP lists Spruce Creek as Impaired due to bacterial contamination, low dissolved oxygen, toxic contamination and a compromised ability to support aquatic life. Although a portion of Spruce Creek was open to shellfish harvesting in the past, the flats have been closed since 2005. The Spruce Creek Association formed in 2002 to promote watershed stewardship and now has over 180 members.

### **Project Outcomes:**

- Over 50 local volunteers and technical staff completed a shoreline survey of Spruce Creek and documented 197 NPS sites. The *Spruce Creek Watershed: Non-Point Source Pollution Survey* report was completed in June, 2006.
- The survey project established the Spruce Creek Association as a prominent leader and helped galvanize local support for ongoing Spruce Creek protection efforts. Since the survey project, a watershed-based plan has been completed and the Town of Kittery was awarded a 319 grant to begin watershed mitigation efforts in April 2008.



# DEP NPS Program and Project Activities in 2007

In addition to the competitive grants program, DEP directly funds several NPS projects or programs. Some of these projects are carried out by DEP staff and others are implemented by partner organizations. See the full 2007 Annual Report for descriptions of each of the programs and accomplishments in 2007. Two programs are highlighted below.

Program or Project Title
Maine Lakes Biomanipulation
Maine Lakes TMDL Assessments
Maine Nonpoint Education for Municipal Officials Program
Maine Nonpoint Source Training and Resource Center
Maine Stream Team Program
Maine Volunteer Lake Monitoring Program
Statewide NPS Outreach
Stream Algae (Periphyton) Assessment Tool

## Maine Nonpoint Source Training and Resource Center

The Maine Nonpoint Source Training and Resource Center provides training to various groups throughout the state to help them prevent nonpoint source pollution. The Center also maintains a publications and videotape library and acts as a clearinghouse for information on NPS and best management practices.

### Accomplishments in 2007:

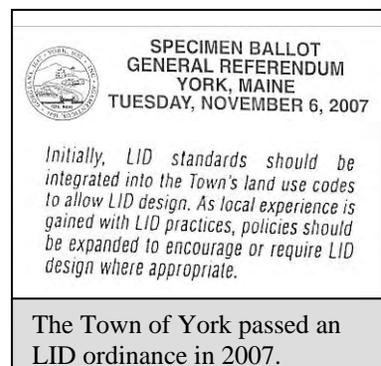
- **463** people trained on the plumbing code and septic system inspection/installation
- **529** contractors and department staff trained in erosion control practices
- **90** individuals attended workshops on maintenance of unpaved roads
- **75** new contractors certified in erosion and sediment control practices under Voluntary Contractor Certification Program
- Landowners trained and **50** LakeSmart Awards issued to recognize natural lake-friendly landscaping
- Certified Professional in Erosion & Sediment Control training resulted in **12** newly certified professionals.

## Maine Nonpoint Education for Municipal Officials (NEMO) Program

Maine NEMO provides outreach to municipal officials on how land use decisions are linked to water quality in their towns. NEMO is based at the office of the Partnership for Environmental Technology Education (PETE) in South Portland. The Maine State Planning Office Coastal Program and the Department of Health and Human Services Drinking Water Program also provide program funding.

### Accomplishments in 2007:

- Conducted 19 NEMO presentations to 458 people from 80 towns.
- As a result of NEMO presentations and training, municipalities have undertaken a variety of actions including LID ordinances, open space planning and acquisition, and evaluation of current ordinances and compatibility with new state stormwater regulations.
- Approximately one year after a NEMO LID presentation, the Town of York passed a general referendum by a huge margin (2047 to 244) modifying stormwater rules in town to allow the use of LID techniques.





Maine Department of Environmental Protection  
Bureau of Land & Water Quality  
#17 State House Station  
Augusta, Maine 04333

Agency Contact: Don Witherill, Director - Watershed Management Division  
Donald.T.Witherill@maine.gov, (207) 287-7725  
Website: <http://www.maine.gov/dep/blwq/docgrant/319.htm>