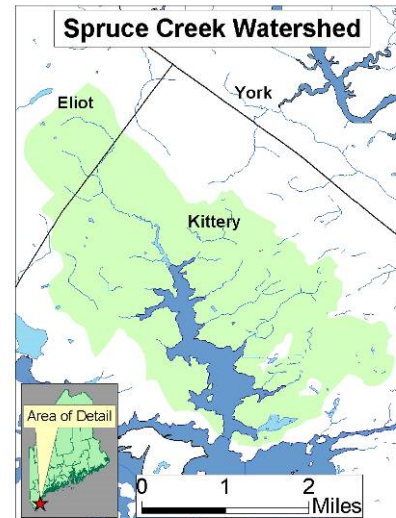


Spruce Creek Watershed Improvement Project – Phase II

#2010RT07

Waterbody Name: Spruce Creek
Location: Kittery and Eliot – York County
Waterbody Status: NPS Priority Watershed, Impaired
Project Grantee: Town of Kittery
Project Duration: December 2009 – September 2012
319 Grant Amount: \$79,780
Local Match: \$134,108



PROBLEM:

The Spruce Creek watershed covers 9.6 square miles in Kittery and Eliot in southernmost Maine. The creek flows into the Piscataqua River about 1.5 miles from where the river meets the Gulf of Maine. The creek is primarily fed by six freshwater streams and includes approximately three square miles of tidal area (including high salt marsh, ledge, and mud flats). Watershed land use includes sparse residential development and some active farmland and woodlots in the upper reaches in Eliot. Along the Route 1 and Route 95 corridor, there are extensive impervious areas in commercial strip malls, roads, and interchanges. The tidal portion is residential with larger homes along the immediate shoreline.

The Maine 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 due to poor water quality and high fecal coliform concentrations. The Spruce Creek Association (SCA) formed in 2002 to promote watershed stewardship and now has over 180 members. A survey completed in 2007 (#2005R-01) identified 197 NPS sites and provided preliminary recommendations for those sites. A Phase I project (#2008RR01) installed conservation practices at six sites, hosted nine septic and residential socials, completed an intercept survey, and initiated a residential pledge program.

PROJECT DESCRIPTION:

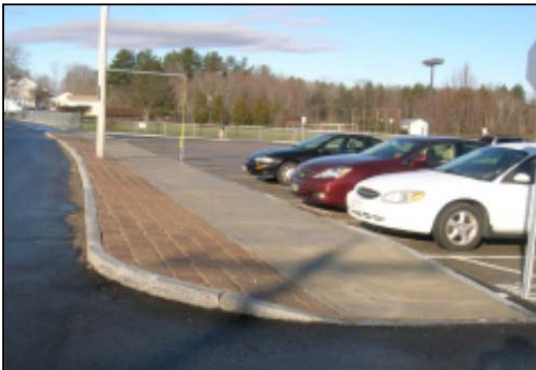
The goal of this project was to reduce bacteria loading and the export of sediment and nutrients into Spruce Creek to improve water quality and help re-open shellfish harvest areas. This was accomplished through the installation of Best Management Practices (BMPs) at residential, town, and commercial properties. Bacteria sources were pursued through a Maine Department of Marine Resources sanitary survey, stormwater investigations, and development of a septic system ordinance.

Project outreach was accomplished through continuation of the residential pledge program; presentations at eight workshops and events; and numerous articles in local newspapers and the Save Kittery Waters website.



PROJECT OUTCOMES:

- Stormwater BMPs including rain barrels, permeable pavers, and buffers were installed at three commercial properties (Bob's Clam Hut, Robert's Maine Grill and the GAP Outlet) and at the Shapleigh School. Twenty one additional BMPs including rain gardens, infiltration trenches, and buffers were installed at five residential properties. Volunteers contributed over 1,526 hours to help with the residential projects.
- One residential overboard discharge located 30 feet from Spruce Creek was discovered through the project. The system was replaced with a modern septic system and leach field, which cost the landowner \$44,000.
- Annual pollutant loading to Spruce Creek was reduced by an estimated 31 pounds of nitrogen and 1.6 tons of sediment per year (Region 5 Method).
- The Town of Kittery completed a draft septic ordinance that would require regular pump-outs and inspections of privately owned septic systems. The project supported ordinance development by attending two public meetings and creating and distributing outreach materials.
- 54 people pledged to complete a total of 648 watershed-friendly practices on their properties through the Save Kittery Waters Pledge Program.



Permeable pavers installed at Shapleigh School



Rain barrel installed at Bob's Clam Hut

PROJECT PARTNERS:

Maine Department of Marine Resources
Maine Nonpoint Education for Municipal Officials (NEMO)
Spruce Creek Association
University of New Hampshire Cooperative Extension
Wells Reserve National Estuarine Research Center

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Suggested Citation:

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