

# Highland Lake Watershed Improvement Project (Bridgton)

#2005R-10

Waterbody Name: Highland Lake

Location: Bridgton, Sweden – Cumberland and Oxford Counties

Waterbody Status: NPS Priority Watershed, Most at Risk

Project Sponsor: Cumberland County SWCD

Project Duration: April 2005 – August 2008

319 Grant Amount: \$98,008

Local Match: \$83,236



## PROBLEM:

Highland Lake is a 334-acre lake in Bridgton that drains into Long Lake and then Sebago Lake. The lake's direct watershed covers 10.2 square miles and extends into Sweden and Waterford. The shoreline is moderately developed with 351 camps and year-round homes, including a town beach and several businesses. Lakes Environmental Association (LEA) and Maine DEP have monitored Highland Lake's water quality since 1976. The lake was placed on the State's list of impaired waters due to declining water clarity, and a TMDL Assessment for the lake was completed in 2004.

LEA has conducted outreach and provided technical assistance to Highland Lake residents and municipal officials for several decades. In 1997 they received a 319 grant to carry out the *Highland Lake Watershed Project*. Using their 'hotspots' GIS inventory, they identified and prioritized erosion sites in the watershed, and used grant cost sharing funds to fix six of the nine highest priority sites in the watershed. The project also conducted 42 Clean Lake Check-Ups, which resulted in another nine construction projects. Due in part to LEA's efforts, the lake was removed from the impaired list in 2006 after the water quality data showed an improving trend.

## PROJECT DESCRIPTION:

The purpose of the project was to significantly reduce erosion and export of sediment and phosphorus into Highland Lake. Conservation practices were installed at 46 sites throughout the watershed. This included 16 large-scale abatement sites and 30 residential sites (funded with help from the project's \$300 small matching grant program).



During the project, LEA spent over 280 hours (in-kind match) educating local children through their watershed education program. In addition, presentations about the project were presented at LEA's annual meetings, and project updates were included in LEA's and CCSWCD's newsletters and websites. In October 2007, a watershed tour showcased completed road and residential sites. At the end of the project, LEA conducted an inventory of remaining problem sites and maintenance needs in the watershed and identified seven roads that need additional work. LEA tested Highland Lake's water quality from May – September throughout the grant period, and completed a Water Quality Summary Report about the data and preliminary trends.

## PROJECT OUTCOMES:

- The project successfully fixed 16 high and medium impact NPS sites in the watershed, including 12 road sites, three beach sites and one driveway. The project awarded \$300 matching grants to address another 30 residential sites.
- The road sites involved grading, adding new surface material and installing plunge pools, settling basins and ditches. Other conservation practices installed during the project include:

Native buffer plantings (575 plants)	Rubber razor diverters (5)
Roof dripline trenches (5)	Open top culvert diverters (5)
Infiltration steps (4)	Drywell (1)
- Pollutant loading to Highland Lake was reduced by an estimated 50 tons of sediment and 42 pounds of phosphorus per year (Region 5 Method).
- LEA conducted a preliminary analysis of water quality data collected during the project (2004 – 2007) and found that phosphorus, clarity and chlorophyll levels showed minor improvements since the beginning of the project.



The project addressed three high impact sites on Hardscrabble Road in the Town of Sweden. Work included 850 feet of ditch stabilization, slope stabilization and installation of several turnouts and plunge pools, resulting in a pollutant load reduction of an estimated 20.15 tons of sediment per year.

## PROJECT PARTNERS:

Lakes Environmental Association  
Portland Water District  
Town of Bridgton  
Town of Sweden

## CONTACT INFORMATION:

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