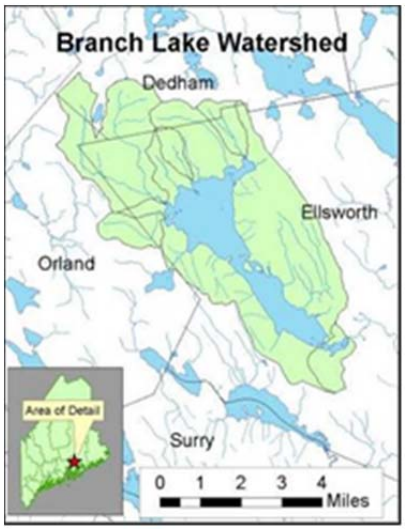
Branch Lake Watershed Improvement Project, Phase II

2010RR01

Waterbody Name:	Branch Lake
Location:	Ellsworth – Hancock County
Waterbody Status:	NPS Priority Watershed
Project Grantee:	Hancock County Soil and Water Conservation District
Project Duration:	January 2010 – September 2012
319 Grant Amount:	$89,184
Local Match:	$50,230



PROBLEM:

Branch Lake is a 2703 acre waterbody that serves as the public water supply for the City of Ellsworth. The lake's 27 mile shoreline is fringed with over 200 shorefront camps. Although the 23.4 square mile watershed is largely undeveloped, there is continued development pressure due to Branch Lake's proximity to Bangor and Ellsworth. Lake water quality is considered excellent with low potential for algal blooms. The lake flushing rate of 0.41 per year is low compared to the average rate for Maine lakes of 1-1.5 per year. Recent data show the potential for phosphorus to leave the bottom sediments and become available to support algae has increased. Also, over recent years there has been significant dissolved oxygen depletion in deep areas during warm summer months.

In 1998 a volunteer watershed survey identified 140 erosion sites. In 2008, an updated watershed survey was completed documenting 130 erosion sites. A *Phase I* grant project (2007RR01) completed in 2009, fixed 33 documented erosion problems. The majority of NPS problems observed were excessive erosion and sediment from town roads, private roads, and residential properties.

PROJECT DESCRIPTION:

Phase II work continued action to protect Branch Lake by reducing erosion and the export of sediment and phosphorus in the northwestern section of the Branch Lake watershed. Beginning in the spring of 2010, Phase II focused on reducing sediment loadings by restoring 12 high and medium priority road sites selected from the 2008 watershed survey. The remaining medium and low priority areas were addressed with local in-kind match and technical assistance from the District. Phase II also included a 50% cash match and a technical assistance program offered to at least 20 residential properties to carry out NPS 'fixes' such as the installation of vegetative buffers or water diverters on driveways. In total, conservation practices that reduced erosion and polluted runoff were implemented at 32 sites.

Public outreach and education was an essential component of this project and the grantee followed the Branch Pond Outreach Plan, developed in Phase I using the LOGIC-Model (SMART).

PROJECT OUTCOMES:

- Successfully repaired 26 erosion sites including 11 gravel camp road sites improved with new cross culverts, inlet and outlet plunge pools, ditching, ditch turnouts, and stabilization. A bridge was constructed over Dean Brook to prevent washout of a camp road at an undersized and deteriorated stream crossing that was also a barrier to fish passage. Fourteen residential sites installed sediment and erosion control BMPs, including buffers and 400' of shoreline stabilization.
- Over 60% of the documented residential sites identified in the updated Watershed Survey were addressed.
- Pollutant loading to Branch Lake was reduced by an estimated 122 tons of sediment, 103 pounds of phosphorus, and 207 pounds of nitrogen per year (Region 5 Method).
- Education and outreach efforts continued using the "Outreach Plan for the Branch Pond Watershed" developed during Phase I. Due to this outreach and technical assistance, many landowners installed BMPs.
- A gravel road maintenance workshop was held for 25+ attendees.

PROJECT PARTNERS:

University of Maine Cooperative Extension
City of Ellsworth
Branch Pond Association
Walls Farm Way Road Association
Branchview North Road Association
Sargent Drive Road Association

CONTACT INFORMATION:

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Gravel Road Workshop

Before: Failing culverts contribute erosion issues into a stream that empties into Branch Lake.

After: A new bridge reduces erosion issues and sediment getting to the lake.

Suggested Citation:
Maine Department of Environmental Protection (2013) "Nonpoint Source Management Program 2012 Annual Report," Document # DEPLW-1245. Augusta: MDEP.