

**Androscoggin Watershed
Roadside Erosion Control Project, Phase II
#2000-04**

Waterbody Name: Androscoggin River Watershed

Location: Androscoggin, Franklin, Sagadahoc and Oxford Counties

Waterbody Status: N/A

Project Sponsor: Androscoggin Valley SWCD

Project Duration: April 2000 - June 2004

319 Grant Amount: \$80,530

Local Match: \$253,859



PROBLEM:

Roadside erosion and sedimentation is one of the major causes of NPS pollution in Maine. Roadside erosion has been documented as a major contributor of sediment and nutrients to lakes and streams in watershed surveys in the Androscoggin River watershed and throughout the state. The lack of understanding about soil stabilization, a resistance to change and insufficient funding can be a handicap for local road crews and town officials and can be difficult to overcome. Proper maintenance and the prevention of chronic erosion within roadside ditches and at culvert crossings could be a major step to healthier streams, lakes and rivers.

PROJECT DESCRIPTION:

The purpose of this project was to expand the use of conservation practices on road construction and maintenance projects throughout the Androscoggin River watershed in order to reduce soil erosion and sedimentation in streams and lakes.

This was accomplished by offering educational workshops, roundtable discussions and field training as well as by providing technical assistance and construction oversight to municipal and state road crews. In all, 240 individuals from 52 communities from within and outside the watershed were offered the opportunity to participate including road foremen, road crews and town officials. Maine DOT road crews and one New Hampshire town also participated in the training.



PROJECT OUTCOMES:

- The education component of this grant included: 7 direct mailings of a project newsletter to 52 towns; 9 workshops about various topics offered throughout the watershed; and 7 presentations and displays at outreach events.
- Technical assistance was provided to 18 communities and 12 others received more informal help. Roadside erosion control BMPs were installed at 9 sites with cost-sharing from the grant. 39 communities benefited from a demonstration project.
- The construction projects consisted of installing several culverts with proper sizing and outlet protection; reshaping and stabilizing roadside ditches; installing waterbars and ditch turnouts for runoff discharge to a stable buffer; and maintaining and stabilizing several miles of gravel roads.
- Soil loss was computed for one site (Newry stream crossing) and was estimated at 36 tons per year.
- Improvement at the sites in Auburn, Minot, Raymond, Greenwood, Greene and Fayette made a positive and direct impact on water quality of abutting streams or ponds. Fish habitats were significantly improved because of enhancements at stream crossings.
- The project generated \$200,000 more match contribution than was required and 1700 hours of volunteer participation for the successful completion of this project. The project was highly appreciated by local as well as state road crews, and all were disappointed that the grant could not continue to provide them with an education and discussion venue, technical assistance and project seed money.



PROJECT PARTNERS:

Maine Local Roads Center, Maine Department of Transportation

Maine Department of Inland Fisheries and Wildlife

39 Towns

CONTACT INFORMATION:

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Cobbossee Lake Restoration: Reduction of Phosphorus in the Jock Stream Watershed #99R-29

Waterbody Name: Cobbossee Lake, Jock Stream

Location: Monmouth, Wales, Litchfield
Kennebec County

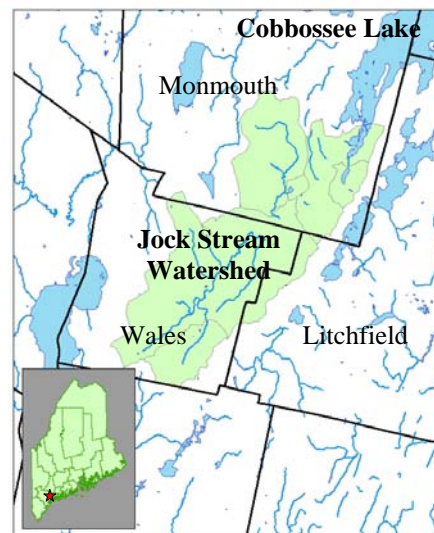
Waterbody Status: Impaired, NPS Priority Watershed

Project Sponsor: Kennebec County SWCD

Project Duration: July 1999 – December 2004

319 Grant Amount: \$220,040

Local Match: \$152,117



PROBLEM:

Cobbossee Lake is one of Maine's premier bass fishing lakes and a source of drinking water supply for Augusta. The lake has a surface area of 5200 acres and a watershed of 32 square miles located in Winthrop, Manchester, and Monmouth about 5 miles from the state capitol - Augusta. The lake has a long history of nuisance algal blooms during summer months. Nonpoint source pollution is the primary cause of the impaired water quality.

The Total Maximum Daily Load (TMDL) water quality assessment reported that elevated levels of phosphorus in Jock Stream accounted for about one-third of the phosphorus load to Cobbossee Lake. The report found that agriculture, primarily dairy farms, was a significant phosphorus source and recommended conservation practices to improve existing conditions. A subsequent survey found that many roads and road ditches were also phosphorus and sediment sources.

PROJECT DESCRIPTION:

The project goal was to help restore Cobbossee Lake water quality by reducing annual total phosphorus entering the lake from the Jock Stream watershed. This was accomplished by reducing sediment and associated phosphorus export from roadways and farms - via the installation of improved roadside drainage and agricultural (livestock) BMPs. The SWCD and NRCS worked with farmers to install winter manure storage facilities, write nutrient management plans, install livestock exclusion fencing & alternative water systems, and install heavy use areas in barnyards. The SWCD collaborated with 3 towns and MDOT to identify, design, and fix many roadside runoff problems that were sediment and phosphorus sources.

Cobbossee Watershed District conducted a water quality monitoring program in Jock Stream and Cobbossee Lake to evaluate the restoration project. The lake was monitored to assess attainment of water quality goals. Jock Stream monitoring stations were sampled bi-monthly from spring to fall for phosphorous, dissolved oxygen and bacteria.



Crystal Lake Watershed Survey

#2003P-05

Waterbody Name: Crystal Lake

Location: Gray - Cumberland County

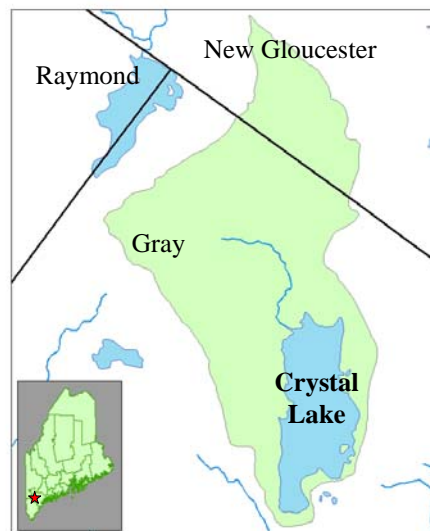
Waterbody Status: NPS Priority Watershed, Most At Risk

Project Grantee: Cumberland County SWCD

Project Duration: April 2003 – April 2004

319 Grant Amount: \$12,745

Local Match: \$9,296



PROBLEM:

Crystal Lake has a surface area of 189 acres and flushes during periods of high water into Mill Pond. Its direct watershed covers 1.7 square miles and is part of the larger Collyer Brook and Royal River Watersheds. The lake's shoreline is almost completely ringed with about 180 seasonal and year-round homes, and the lake has a public boat ramp and beach, which receives heavy summer recreational use.

The pond has been monitored since 1974, and the data indicates that the pond has moderate depletion of dissolved oxygen in the hypolimnion in late summer. As a result, Crystal Lake is listed on the NPS Priority Watersheds list and list of lakes "Most at Risk from New Development" under the Maine Stormwater Law.

PROJECT DESCRIPTION:

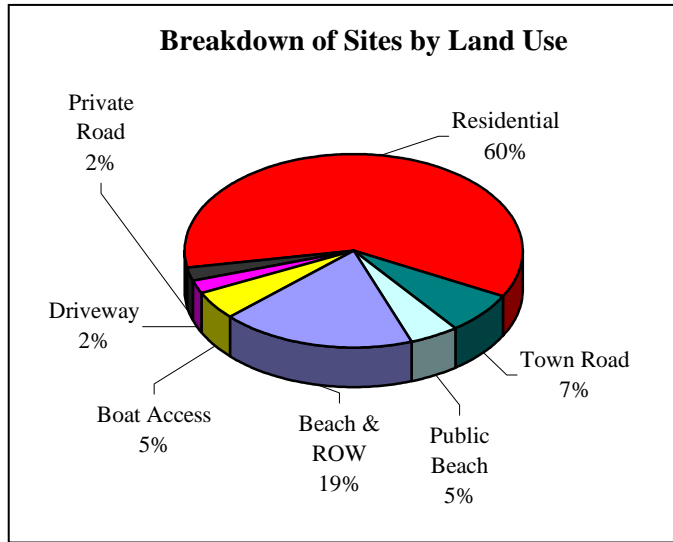
The purpose of the project was to identify, document and prioritize soil erosion sites in the Crystal Lake Watershed and to recommend conservation practices for each of these sites. Survey methods were based on those outlined in the DEP publication, *Citizen's Guide to Lake Watershed Surveys*. The volunteer training session was held on May 18, 2003 and was modified to provide more hands-on training in the field. The 13 volunteers were trained to identify erosion problems, rate water quality impact and develop recommendations. About ¾ of the survey was completed on the day of the training.



Technical staff compiled the survey data, developed maps and created the *Crystal Lake Watershed Survey Report*. In total, 42 sites were identified that are impacting or have the potential to impact Crystal Lake. None of the sites were rated with a high impact to the lake, 14 were rated as medium impact and 28 were rated as low impact. Survey reports were distributed to the public; and presentations were delivered at the Crystal Lake Association's annual meeting and a Gray Town Council meeting; and project information appeared in local newspapers and on the local cable access channel.

PROJECT OUTCOMES:

- Project staff and volunteers surveyed the entire Crystal Lake Watershed and documented 42 erosion sites. They also developed preliminary recommendations for each site and rated the impact to the lake, cost, and technical level required to fix each site.
- Project staff produced the *Crystal Lake Watershed Survey Report* (March 2004), which summarizes watershed survey findings, lists specific information on each identified site and outlines next steps for watershed stewardship.
- The project steering committee distributed copies of the report to municipal officials and all 180 lakefront households. Those residents with identified erosion sites also received a customized letter attached to the report explaining their specific issues and recommendations.
- The detailed information collected through the survey was shared with the newly formed Royal River Youth Conservation Corps (YCC). The Royal River YCC planned to use this information to identify candidate sites for their 2004 construction season.



PROJECT PARTNERS:

Crystal Lake Association

Town of Gray

CONTACT INFORMATION:

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East Pond and North Pond NPS Remediation Project #2001R-02

Waterbody Name: East Pond and North Pond

Location: Oakland, Smithfield, Mercer and Rome -
Kennebec and Somerset County

Waterbody Status: Impaired, NPS Priority Watersheds

Project Grantee: Belgrade Regional Conservation Alliance

Project Duration: April 2001 – August 2004

319 Grant Amount: \$42,641

Local Match: \$40,505



PROBLEM:

East Pond is located in the towns of Oakland (Kennebec County) and Smithfield (Somerset County). North Pond is located in the towns of Rome (Kennebec County), Smithfield and Mercer (Somerset County). East Pond is a 1724 acre lake and has a 4.3 square mile watershed. North Pond has a surface area of 2253 acres and a 14.6 square mile watershed. East Pond is at the top of the Belgrade Lakes drainage system. East Pond flows into North Pond and North Pond drains to Great Pond.

East Pond has been monitored since 1975 and water quality is considered to be below average to poor. The lake experienced algal blooms in 1993, 1995, 1998, 1999, 2002, and 2003. The pond is on the list of impaired lakes and had a TMDL (loading allocation) completed. Water quality monitoring data for North Pond has been collected since 1970 and water quality is considered to be below average. Both ponds are on the NPS Priority Watersheds list. The Belgrade Regional Conservation Alliance (BRCA) completed a watershed survey and management plan for both ponds.

PROJECT DESCRIPTION:

The purpose of the East Pond and North Pond Remediation Project was to begin addressing threats to water quality by installing conservation practices on specific sites that will correct erosion and runoff problems. These also demonstrate conservation practices for town officials, lake property owners, lake associations, and the general public.



BRCA staff coordinated the installation of conservation practices on 24 sites including 1 town road, 10 camp roads, 3 driveways, 9 residential vegetated buffer sites, and 1 beach. The BRCA Conservation Corps addressed an additional 20 smaller sites through installation of buffers, riprap, mulch, and french drain. Over three field seasons, 192 landowner contacts were made. Tours were also provided to camp road commissioners to educate them on what could be done on their road.

PROJECT OUTCOMES:

- 17 problem sites were installed on East Pond and 8 sites on were installed on North Pond. A total of 2.56 miles of road were re-built and 7,711 square feet of buffer garden were installed.
- A large variety of conservation practices were installed including the following:

Re-graded/crowned roads (7)	Bank stabilization (2)
New road surface material (13)	Riprap (1)
Ditch installation (9)	Terraces (4)
Recycled asphalt installed (1)	Berm (1)
Ditch stabilization (3)	Trail mulched (2)
Culvert installation (5)	Sediment trap/settling basin (2)
Culvert inlet/outlet stabilization (2)	Drywell (2)
Sediment basin (3)	Mulch berm (1)
Turn-outs (10)	Permanent mulching (1)
Vegetated buffer plantings (9)	Rubber razors (3)
French drains (2)	
- The estimated Pollutant Load Reduction resulting from the project totaled 11 tons/year of sediment and 14.5 pounds/year of phosphorus (WEPP: Road model and Colby College).
- Community outreach and education occurred through landowner contacts, contractor education and demonstration of a highly visible demonstration sites.



PROJECT PARTNERS:

Belgrade Regional Conservation Alliance
BRCA Conservation Corps
North Pond Association
East Pond Association
Town of Smithfield
Maine Department of Transportation
Pine Tree Camp

CONTACT INFORMATION:

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