

Thompson Lake

Youth Conservation Corps



Final Report 2010

Prepared by: Drew McLaren, Coordinator/Crew Chief

2010 Staff

Crew Members:

| | |
|-------------------|----------|
| Justin St. John | Harrison |
| Katrina Heikkinen | Oxford |
| Tucker Johnson | Harrison |

Coordinator /Crew Chief:

| | |
|--------------|----------|
| Drew McLaren | Harrison |
|--------------|----------|

2009 Staff Biographies

Coordinator/Crew Chief

Drew McLaren-

Drew took over this year as the Coordinator and continued his duties as crew chief, though this took some adjustments it worked out well for the YCC. This is Drew's fourth year with TLEA YCC. He is entering his fourth year at the University of Maine at Farmington and is studying history, philosophy and politics.

Crew

Justin St. John-

Justin graduated from Oxford Hills Comprehensive High School this spring. He is in his third year as a YCC crew member. Justin will enter the Honors College at University of Maine at Orono this fall to study Business Administration.

Katrina Heikkinen-

Katrina graduated from Oxford Hills Comprehensive High School this spring. She is in her first year as a YCC crew member. Katrina will be joining the Air Force this fall.

Tucker Johnson-

Tucker graduated from Oxford Hills Comprehensive High School this spring. He is in his first year as a YCC crew member. Tucker will take a National Outdoor Leadership School (NOLS) course before pursuing other educational options.

YCC Steering Committee:

Jean Hankins
Tony Caggiano
Chris Pottle
Marcia Pottle
Dan Porter

Consultant: Jeff Stern

Summer Synopsis

The crew successfully completed 17 erosion control projects this summer. This total is a little down from years past but considering that 10 of the 17 jobs took 2 or more days this was a pretty heavy work load. The crew stayed busier this summer than in the past four summers. Only one half day was lost due to rain whereas at least one day had been lost the past couple of seasons. The weather was very cooperative for the YCC work. Eight of the 17 erosion projects involved rip-rap placement, perhaps due to higher lake levels over the last couple of years. If lake level is not addressed I can see this as being a continuing trend for the YCC. The YCC spent a lot of time working in Otisfield again this season. This may be the result of the 2008 watershed survey and also the 319 grant TLEA received to implement solutions to the problems uncovered in the survey.

Summary of Completed Jobs

| Town | Number of Completed Jobs |
|------------|--------------------------|
| Oxford | 4 |
| Otisfield | 9 |
| Poland | 3 |
| Casco | 1 |
| Total Jobs | 17 |

The Thompson Lake Environmental Association's (TLEA) Youth Conservation Corps (YCC) just completed its ninth consecutive summer of providing solutions to soil erosion problems in the watershed of Thompson Lake. The YCC consists of a group of area high school and college students, led by an adult coordinator and headed by a crew chief. A TLEA steering committee provides overall direction. Funding for the YCC program comes from two lake towns, donations from individuals, and membership dues.

The main environmental problem facing Thompson Lake is how to keep it from receiving too much phosphorus, an essential plant nutrient. Excessive amounts of phosphorus lead to harmful algae blooms that not only can turn the lake green but can upset Thompson Lake's ecological balance, notably its fish habitat. Three factors contribute:

- The first is land development. As the area surrounding the lake is continuously developed, the quality of the water is jeopardized. Deforestation, driveway construction, ditches, and excavated soil allow soil particles to be carried directly into the lake every time it rains. These soil particles not only fill in the lake but carry all sorts of compounds and chemicals, especially phosphorus, into the lake.
- A second cause is shoreline erosion caused by the action of waves which also sweep soil and phosphorus into the lake.
- The third cause involves thoughtless landscaping: Lawns extending to the lake often serve as conduits for lawn chemicals, phosphorus being the most prevalent.

TLEA, assisted by the Maine DEP, carried out intensive surveys of the entire Thompson Lake watershed in five towns during the springs of 2008, 2009, and 2010 to determine the nature and location of its erosion problems. In April 2008 volunteers surveyed most of the Otisfield portion of the watershed; in 2009, Poland and Casco; and in 2010 the remainder of the watershed, including all of Oxford and also parts of Otisfield and Norway along the shores of Greeley Brook. Approximately 350 erosion sites were discovered: about 100 erosion sites in each of the first two surveys, and 145 in the last.

The next step for TLEA was to try to find solutions to these specific problems. Most erosion sites were and are located on private residential properties. The property owners involved were notified and, in many cases, urged to contact the YCC for remedial work. Larger erosion problems caused by town and private roads were also identified during the survey but are beyond the scope of the YCC expertise and equipment capabilities.

Affected property owners typically agree to pay for materials needed to arrest or slow erosion while the YCC provides labor and expertise and obtains required permits. This year the crew installed riprap and erosion control mix; established new buffer plantings; built infiltration steps; constructed water bars and open box culverts. The purpose of all these measures is to create a means of filtering phosphorus laden run-off naturally before it enters the lake.

The following report, written by YCC Coordinator and crew chief Drew McLaren, gives the details of the YCC's ninth year.

Pete Laverdiere
 88 Black Island Rd
 Oxford, Me

Project Completion Date: 6/21
 Length of Project: 1 day

Before:



After:



| Material | Units of measurement | Quantity | Cost per unit | Total cost |
|-------------------------|----------------------|----------|---------------|--------------|
| Pressure Treated Lumber | 2x8x16 | 2 | 19.59 | 39.18 |
| Pressure Treated Lumber | 2x6x16 | 4 | 12.69 | 50.76 |
| Pressure Treated Lumber | 2x4x8 | 0.5 | 6.50 | 3.25 |
| Nails | | | | 1.00 |
| | | | | 94.19 |
| | | | | |
| | | | | |
| Maine sales tax | 5% | — | — | 4.71 |
| Total: | | | | 98.90 |

Problem: Pete Laverdiere’s driveway was scouring, a sign of driveway erosion.

Solution: The Crew installed two box culverts to divert the water off from the driveway.

Peggy Dorf
53 Sanborn Ln
Oxford, Me

Project Completion Date: 6/29
Length of Project: 2 days

| Material | Units of measurement | Quantity | Cost per unit | Total cost |
|-----------------|-----------------------------|-----------------|----------------------|-------------------|
| Rip-Rap | Cubic Yard | 6 | 25.00 | 150.00 |
| Delivery | | 2 | 40.00 | 80.00 |
| Geotextile | linear feet | 12 | 1.00 | 12.00 |
| Fabric Staples | | 40 | 0.10 | 4.00 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Maine sales tax | 5% | — | — | 12.30 |
| | | | Total: | 258.30 |

Problem: The shoreline of Peggy Dorf's property was severely undercut and starting to slough.

Solution: The crew installed rip-rap to stabilize the bank and to protect it from wave action and further undercutting.

Bruce Cummings
 Wayaka Lane
 Otisfield, Me

Project Completion Date: 6/22
 Length of Project: 1 day

Before:



After:



| Material | Units of measurement | Quantity | Cost per unit | Total cost |
|-------------------------|----------------------|----------|---------------|------------|
| Pressure Treated Lumber | 2*6-12 | 4 | 9.50 | 38.00 |
| Rubber | linear feet | 24 | 5.00 | 120.00 |
| Nails | n/a | n/a | n/a | 1.00 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Maine sales tax | 5% | — | — | 7.90 |
| Total: | | | | 166.90 |

Problem: Bruce Cummings' driveway was scouring.

Solution: The crew installed two razor bars to divert water off from the drive.

Silvaqua Owners Association
Otisfield, Me

Project Completion Date: 7/1
Length of Project: 4 days

Before:



After:



| Material | Units of measurement | Quantity | Cost per unit | Total cost |
|-------------------------|----------------------|----------|---------------|------------|
| Rip-Rap | cubic yard | 3 | 25.00 | 75.00 |
| 3/4 crushed stone | cubic yard | 3 | 25.00 | 75.00 |
| Delivery | | 2 | 40.00 | 80.00 |
| Erosion Control Mulch | cubic yard | 1 | 33.00 | 33.00 |
| Hosta | plant | 3 | 6.50 | 19.50 |
| Densa Inkberry | plant | 1 | 32.00 | 32.00 |
| Center Glow Ninebark | plant | 1 | 32.00 | 32.00 |
| Compost | n/a | n/a | n/a | 15.00 |
| Rebar | linear feet | 10 | 1.00 | 10.00 |
| Geotextile | linear feet | 20 | 1.00 | 20.00 |
| Fabric Staples | staple | 20 | 0.10 | 2.00 |
| Pressure treated lumber | 12*2*6 | 2 | 12.00 | 24.00 |
| Pressure treated lumber | 10*2*6 | 2 | 10.00 | 10.00 |
| Pressure treated lumber | 12*2*8 | 1 | 14.00 | 14.00 |
| Pressure treated lumber | 10*2*8 | 1 | 12.00 | 12.00 |
| Nails | n/a | n/a | n/a | 1.00 |
| Maine sales tax | 5% | — | — | |
| Total: | | | | 454.50 |

Problem: The Silvaqua Association beach had a shoreline that was eroding away and had become particularly unstable as well as a pathway that had some erosion.

Solution: The Crew installed a box culvert and more crushed stone on the pathway to prevent further erosion. The crew addressed the shoreline with buffer planting as well as a combination of rip-rap and logs to stabilize the bank.

Dan Porter
 37 Shore Rd
 Otisfield, Me

Project Completion Date: 7/1
 Length of Project: 1 day

After:



After:



| Material | Units of measurement | Quantity | Cost per unit | Total cost |
|-------------------------|----------------------|----------|---------------|------------|
| Peat Moss | Cubic Feet | 1 | 6.00 | 6.00 |
| Compost | Cubic Feet | 1 | 6.50 | 6.50 |
| Fertilizer | lbs | 1 | 2.00 | 4.00 |
| Fabric Staples | | 5 | 0.10 | 0.50 |
| Fabric | Linear feet | 8 | 1.00 | 8.00 |
| Mulch | per bag | 8 | 5.00 | 40.00 |
| Highbush Blueberry | plant | 1 | 40.00 | 40.00 |
| North Country Blueberry | plant | 2 | 17.50 | 35.00 |
| Jacobs Latter | plant | 1 | 17.00 | 17.00 |
| Neon Flash Spirea | plant | 1 | 27.00 | 27.00 |
| Maine sales tax | 5% | — | — | |
| Total: | | | | 184.00 |

Problem: Dan Porter had direct flow through his lawn to the lake.

Solution: The Crew installed a rain garden to help absorb some of the water flowing through the property and to act as a filter for phosphorus.

Zilinsky/Watson
99 Panacea Ln
Otisfield, Me

Project Completion Date: 7/9
Length of Project: 4 days

Before:



| Material | Units of measurement | Quantity | Cost per unit | Total cost |
|-------------------------|----------------------|----------|---------------|------------|
| Geotextile | linear feet | 24 | 1.00 | 24.00 |
| 3/4 crushed stone | cubic yards | 3 | 25.00 | 75.00 |
| Rip-Rap | cubic yards | 15 | 25.00 | 375.00 |
| Delivery | | 6 | 40.00 | 240.00 |
| North Country Blueberry | plant | 2 | 31.50 | 63.00 |
| Fabric Staples | staple | 30 | 0.10 | 3.00 |
| | | | | |
| | | | | |
| Maine sales tax | 5% | — | — | |
| Total: | | | | 780.00 |

Problem: Ice pushed the shoreline bank of the Zilinsky/Watson property causing the bank to become severely unstable.

Solution: The Crew installed rip-rap along the whole bank to stabilize the bank and prevent further erosion. The crew also planted more blueberry plants to create a buffer and continue to stabilize the bank.

Ellen Bishop
 Sand Island Ln
 Otisfield, Me

Project Completion Date: 7/8
 Length of Project: 1 day

After:



| Material | Units of measurement | Quantity | Cost per unit | Total cost |
|-------------------------|----------------------|----------|---------------|------------|
| Pressure Treated Lumber | 2x6x16 | 2 | 12.69 | 25.38 |
| Pressure Treated Lumber | 2x8x16 | 1 | 15.79 | 15.79 |
| Nails | | 1 | 1.00 | 1.00 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Maine sales tax | 5% | — | — | 2.11 |
| Total: | | | | 44.28 |

Problem: Ellen Bishop’s razor bar had become no longer functional.

Solution: The Crew replaced the razor bar with a box culvert because the driveway is plowed in the winter.

Lynn O'Brien
 33 Whittum Ln
 Otisfield, Me

Project Completion Date: 7/15
 Length of Project: 2 days

After:



| Material | Units of measurement | Quantity | Cost per unit | Total cost |
|-----------------|----------------------|----------|---------------|------------|
| Rip-rap | Cubic Yards | 11 | 25.00 | 275.00 |
| Deliveries | | 3.5 | 40.00 | 140.00 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Maine sales tax | 5% | — | — | |
| Total: | | | | 415.00 |

Problem: Lynn O'Brien's shoreline was unstable.

Solution: The Crew continued to rip-rap the shoreline. Part of the shoreline had been rip-rapped in 2009.

Dolores Whittum
23 Whittum Ln
Otisfield, Me

Project Completion Date: 7/19
Length of Project: 2 days

After:



| Material | Units of measurement | Quantity | Cost per unit | Total cost |
|-----------------|----------------------|----------|---------------|------------|
| Rip-Rap | Cubic Yards | 4 | 25.00 | 100.00 |
| Delivery | | 1.5 | 40.00 | 60.00 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Maine sales tax | 5% | — | — | |
| Total: | | | | 160.00 |

Problem: Dolores Whittum’s shoreline had some minor undercutting.

Solution: The Crew installed rip-rap to stabilize the bank.

Nick Leighton
 424 Forrest Edwards Rd
 Otisfield, Me

Project Completion Date: 7/13
 Length of Project: 2 days

Before:



After:



| Material | Units of measurement | Quantity | Cost per unit | Total cost |
|-----------------|----------------------|----------|---------------|--------------|
| Rebar | Linear Feet | 76 | 0.74 | 56.24 |
| Geotextile | Linear Feet | 18 | 1.00 | 18.00 |
| Fabric Staples | staples | 30 | 0.10 | 3.00 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Maine sales tax | 5% | — | — | |
| Total: | | | | 77.24 |

Problem: Nick Leighton had a pathway with direct flow to the lake.

Solution: The Crew installed two sets of infiltration steps to slow down the flow of water down the path. On either side of the steps the crew spread erosion control mix to stabilize the pathway.

Tim Evrard
 71 Hickory Hill Ln
 Oxford, Me

Project Completion Date: 7/26
 Length of Project: 3 days

Before:



After:



| Material | Units of measurement | Quantity | Cost per unit | Total cost |
|-------------------------|----------------------|----------|---------------|------------|
| Rubber | Linear Feet | 38 | 5.00 | 190.00 |
| Pressure Treated Lumber | 2*6*10 | 2 | 7.60 | 15.20 |
| Pressure Treated Lumber | 2*6*12 | 2 | 9.05 | 18.10 |
| Pressure Treated Lumber | 2*6*16 | 2 | 13.35 | 26.70 |
| Plant Mix | Plants | 60 | 1.00 | 60.00 |
| | | | | |
| | | | | |
| | | | | |
| Maine sales tax | 5% | — | — | |
| Total: | | | | 310.90 |

Problem: Tim Evrard’s boat path to the lake was eroding severely. Tim also had two bare hillsides that were sources for erosion and polluted runoff.

Solution: The crew planted blueberries, juniper rugs, and lilies to vegetate and create a buffer on Tim’s hills.

Kathy Cain

Project Completion Date: 7/27
Length of Project: 1 day

After:



*Kathy purchased all her own materials.

Problem: Kathy Cain was in need of a buffer planting.

Solution: The Crew planted blueberries and lilies to establish this buffer.

Marcia Matuska
 39 Storm Cove Ln
 Poland, Me

Project Completion Date: 7/27
 Length of Project: 3 days

Before:



After:



| Material | Units of measurement | Quantity | Cost per unit | Total cost |
|---------------------|----------------------|----------|---------------|------------|
| 3/4 crushed stone | Cubic Yards | 3 | 36.99 | 110.97 |
| Rip-Rap | Cubic Yards | 15 | 36.99 | 554.85 |
| Deliveries | | 6 | 35.00 | 210.00 |
| Lowbush Blueberries | Plants | 6 | 22.00 | 132.00 |
| Planting Mix | Plants | 6 | 1.50 | 9.00 |
| | | | | |
| | | | | |
| | | | | |
| Maine sales tax | 5% | — | — | |
| Total: | | | | 1016.82 |

Problem: Marcia Matuska had no buffer to her shoreline and her bank was undercutting.

Solution: The Crew rip-rapped the bank and planted blueberries above the rip-rap to stabilize the bank.

Lynn Minich
 Black Island Cove Ln
 Poland, Me

Project Completion Date: 7/28
 Length of Project: 2 days

After:



| Material | Units of measurement | Quantity | Cost per unit | Total cost |
|-------------------------|----------------------|----------|---------------|------------|
| Pressure Treated Lumber | 4*6*8' | 4 | 17.30 | 69.20 |
| Rebar | Linear feet | 40 | 0.80 | 32.00 |
| Pressure Treated Lumber | 2*6*12 | 2 | 9.00 | 18.00 |
| Rubber | Linear feet | 12 | 5.00 | 60.00 |
| Nails | | | | 1.00 |
| Filter Fabric | Linear feet | 16 | 1.00 | 16.00 |
| Erosion Control Mulch | Cubic Yards | 3 | 32.50 | 97.50 |
| Garden Edger | Linear feet | 16 | 1.50 | 24.00 |
| Maine sales tax | 5% | — | — | |
| Total: | | | | 317.70 |

Problem: Lynn Minich had bare areas with direct flow to the lake.

Solution: The Crew replaced old rotted timbers with new pressure treated timbers and established a stone step. The crew also installed a razor bar higher up on the property to divert flow and spread erosion control mulch to absorb the flow.

Moe Ouellette
Loop Rd
Otisfield, Me

Project Completion Date: 8/10
Length of Project: 1 day

After:



| Material | Units of measurement | Quantity | Cost per unit | Total cost |
|-------------------------|----------------------|----------|---------------|------------|
| Pressure Treated Lumber | 2*6*10 | 4 | 6.99 | 27.96 |
| Rubber | Linear Feet | 20 | 5.00 | 100.00 |
| Nails | | | | 1.00 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Maine sales tax | 5% | — | — | 1.40 |
| Total: | | | | 130.36 |

Problem: Moe Ouellette's driveway was scouring.

Solution: The Crew installed a razor bar to divert water and prevent further erosion.

Ken Craft

Project Completion Date: 8/9
Length of Project: 5 days

Before:



After:



| Material | Units of measurement | Quantity | Cost per unit | Total cost |
|-----------------|----------------------|----------|---------------|------------|
| Geotextile | linear feet | 50 | 0.30 | 15.00 |
| Fabric Staples | | 50 | 0.10 | 5.00 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Maine sales tax | 5% | — | — | |
| Total: | | | | 20.00 |

Problem: Ice had pushed up Ken Craft's shoreline and the waves have continued to eat away the soil.

Solution: The Crew rip-rapped the entire shoreline.

Will Couture
 240 Thompson Lake Shores Rd
 Casco, Me

Project Completion Date: 8/11
 Length of Project: 2 days

After:



| Material | Units of measurement | Quantity | Cost per unit | Total cost |
|-----------------------|----------------------|----------|---------------|------------|
| Erosion Control Mulch | Cubic Yards | 12 | 35.00 | 420.00 |
| Delivery | | 3 | 35.00 | 105.00 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Maine sales tax | 5% | — | — | |
| Total: | | | | 525.00 |

Problem: Will Couture had a lot of bare area on his property.

Solution: The Crew spread erosion control mulch to stabilize the bare area and give the water something to soak into.