The Acton-Shapleigh Youth Conservation Corps

2011 Season Report

www.asycc.com

Contents

Executive Summary

The Acton-Shapleigh Youth Conservation Corps (ASYCC) is completing its eleventh season of serving the towns of Acton and Shapleigh, Maine. The ASYCC "is committed to protecting the waterways within the Mousam Lake and Square Pond Watershed. This is achieved by providing education, community outreach, courtesy boat inspections, technical assistance, and the installation of effective erosion control practices to the communities of Acton and Shapleigh. The ASYCC continues to work to sustain and protect the valuable waterways of Goose Pond, Loon Pond, Mousam Lake, and Square Pond for the enjoyment of the community and its visitors."[1] Since it was founded in 2001 ASYCC programs have successfully raised awareness and improved the watershed's health. The ASYCC consists of two overarching programs, the Erosion Control Crew (ECC) and Courtesy Boat Inspections (CBI).

The ECC implements conservation projects on waterfront or near-water front properties to reduce erosion and prevent run-off from entering our water bodies. This year, the ECC completed a record number of projects, 27, an increase of three over the 2010 season. Each project successfully addressed the erosion and run-off problems within the affected property by implementing a variety of the EPA's Best Management Practices (BMPs). Each BMP is a low-impact, environmentally friendly solution to non-point source pollution.

Efficiency of the ECC program continues to improve. Although the total number of conservation projects completed in one season is not necessarily the most important indicator of the overall impact of the program because of the variability of time and energy needed to effectively stop run-off from individual properties, which number demonstrates that the ECC's work rate and level of expertise improved in 2011. The crew leader was an experienced three-year veteran of the ASYCC's ECC program. This had a positive impact on the quality and execution of work. Furthermore, last year's assistant technical director became this year's technical director and he was able to use his prior experience to run a successful and efficient program.

A property owner who believes he or she has an erosion and run-off problem within our watershed and requests the ASYCC's assistance in addressing it receives a visit from our technical director. At the request of the property owner that visit will produce a technical report, also known as a remediation plan. This plan addresses the property's erosion problems and recommends BMPs to fix the problems. This year, a total of 43 technical visits were completed, and 26 technical reports were produced. Last year, a total of 34 technical visits were completed, with 21 technical reports. For the 2012 season, there are already 10 homeowners who hope to be a project host of the ECC, with another eight who are still deciding. Since the ASYCC's inception the numbers of technical visits and technical reports have increased.

The ASYCC's second overarching program, Courtesy Boat Inspections, had another very successful season. The goal of the CBI program is to prevent the introduction of invasive aquatic plants from entering local water bodies. This is more important today than ever before because of the increase in invasive plants that have been introduced in neighboring lakes. If Mousam Lake and Square Pond were to be invaded by such plants the economic impact on the towns of Acton and Shapleigh, and local property owners would be catastrophic. Mousam Lake and Square Pond provide a significant percentage of each town's tax revenue. If a lake were to be invaded by invasive plant species, there would be enormous and potentially irreversible degradation not only to the lake but also to property values, and therefore the tax revenue. The CBI program is the best way to counter the threats of aquatic invasive plants

[1] Asycc.com, 2011.

CBIs inspect each boat, trailer, fishing line, and any other visible gear before the boat enters the public launch. They are instructed to educate each boat owner on the importance of not transplanting plants and marine species from one lake to the next. This year, CBIs covered the Mousam Lake boat launch 98 hours a week during the peak season, 36 hours a week during the pre-season, and 46 hours per week during the post-season. Square Pond's boat launch was covered 60 hours during the peak season and 12 hours a week during the pre-season and post-season. CBI coverage once again increased from the previous year. During the peak season, coverage at the Mousam Lake boat launch has increased each year: in 2008, Mousam Lake was covered 62 hours per week, 90 hours in 2009, and 98 hours in 2010. Coverage at the Square Pond boat launch has also increased. In 2008 Square Pond was coverage 12 hours per week, 21 hours per week in 2009, and 60 hours per week in 2010. Further, the ASYCC intends to increase CBI coverage in 2012 to monitor the annual Mousam bass tournaments in early May that bring in hundreds of uninspected boats into the lakes.

1- A picture of most of the ECC crew at a job site

The Acton-Shapleigh Youth Conservation Corps

Introduction

The ASYCC is a non-profit organization founded in 2001, working to protect the watersheds of Mousam Lake, Square Pond, Goose Pond, and Loon Pond. The ASYCC is committed to providing education, community outreach, technical assistance, courtesy boat inspections, and the installation of erosion control practices in the towns of Acton and Shapleigh. The goal of the ASYCC is to sustain and protect the valuable water resources for the enjoyment of the local community, businesses, and its visitors.

Each year the ASYCC strives to improve upon its previous success. The ASYCC hires local residents who have a vested interest in protecting the local waterways and works with them to improve the reputation of the program. ASYCC employees staff the ECC and CBI programs. Both programs continue to play a significant role in the successful restoration of Mousam Lake from its once EPA declared "impaired condition" to its current revitalized state. The ECC and CBI programs also work to protect Square Pond and Loon Pond from the dangers of invasive plants, shoreline erosion and run-off.

A brief historical overview:

Goose Pond, Loon Pond, Square Pond, and Mousam Lake are located in the towns of Acton and Shapleigh, in York County, Maine. The towns of Acton and Shapleigh have significantly changed since being established in 1772 and 1830 respectively. The shores along the Shapleigh side of Mousam Lake were first developed for industrial use by the sawmill, merchant and service businesses, and a few residential homes. Over time, Mousam Lake became a more populated residential community, resulting in the loss of naturally forested areas, the addition of dirt and paved roads, lawns, and un-vegetated properties resulting in decreased water quality. When residential developers used phosphorus, nitrate, nitrite, fertilizers, and rapid clear-cutting of natural buffers for residential development the water quality suffered dramatically. These factors have led to a decrease in dissolved oxygen (DO), clarity of water, and an increase in turbidity. Indicator species such as frogs, salmon, cranes, loons, and other native birds and wildlife left the area due to both the poor water quality and the loss of their native habitat and breeding ground to residential development.

It was not until the early 1990's that the Maine Department of Environmental Protection noticed a decrease in water quality of Mousam Lake and placed it on Maine's Impaired Waters List. Due to Mousam Lake being classified as an "Impaired Water Body", Mousam Lake received funding and special attention from the state and local governments to help fix the poor water quality. After many years and significant resources, Mousam Lake has been taken off the Impaired Water Bodies List. In turn, indicator species such as loon, salmon, and other native species have started to return back to the area. Mousam Lake being taken of the list cannot be taken for granted. Without proper management and further protection from invasive species and harmful elements such as phosphorus, Mousam Lake will relapse to its previous impaired state.

Similar to Mousam Lake, Square Pond has experienced extensive residential growth along its shore banks. Although Square Pond is not an impaired water body, without proper management by the Square Pond Improvement Association and the ASYCC it too can become an impaired water body. It costs less to prevent damage to a water body than to fix one that is already damaged.

Geography of Mousam Lake Watershed:

Mousam Lake stretches 926 acres, with over 700[1] residences inhabiting its shorelines. Square Pond covers 896 acres, with over 400 residences inhabiting its shoreline. The watershed of Mousam Lake, Square Pond, Loon Pond, and Goose Pond known as the Mousam Lake Watershed, covers 22 square miles and is home to over 2,200 seasonal and full time residents.[2]

Figure 1. Courtesy of EPA's National Lakes Assessment: a Collaborative Survey of the Nation's Lakes

[2] Mousam Lake Water Quality Improvement Project, #2000R-40-WIFAP. Viewed on August 13, 2011, retrieved from http://www .maine.gov/dep/blwq/docgrant/319_files/reports/2004pg34_43.pdf.

Problems affecting the Mousam Lake & Square Pond Watershed

The Mousam Lake watershed is a valuable resource not only to the residents of the water bodies but also to the livelihood of economic and social development for the area. The Mousam Lake Watershed and its valuable resources are threatened every year by erosion and invasive aquatic plants.

Erosion is a natural process in which the elements breakdown the earth's materials, usually rock and soil, over time. Erosion creates run-off, carrying the earth's eroded material from one location to another. The result of erosion in waterfront properties such as those found in the watershed boundaries of the ASYCC can be: sedimentation deposits, excessive nutrient loading, algal blooms, loss of native marine life, the creation of gullies, changes in the landscape slope gradient, and a decrease in shoreline property. The ECC's conservation projects are designed to reduce harmful erosion and prevent run-off from entering the watershed.

The second major issue threatening the watershed, as well as all watersheds, is the introduction of invasive species. Invasive species can be plants or marine animals, both of which greatly threaten the biodiversity of an ecosystem. These species are native to far away regions of the world: Asia, Europe, and Africa. They have been unintentionally transported to local waterways, usually through industry shipping methods; however, it is also common for non-native species to be dumped out of fish tanks into nearby water bodies. Once brought into a region, boats are the most likely source of transporting them from water body to water body. When plant fragments attach themselves to a boat or any type of boating equipment, they are known as "hitch hikers".

These invasive plants grow at abnormally high rates and are extremely difficult to control, often times being impossible to completely eradicate from the lake. Invasive plants have the ability to take over the entire littoral zone of a water body. This is due to their inherit trait of being from a foreign ecosystem where they are a part of the natural system of checks in balances that occur in a well-functioning ecosystem. When introduced into foreign lands, they do not have any predators, enabling them to reproduce at rapid rates, taking over the local flora and fauna that must compete amongst each other. Furthermore, when erosion and run off occurs along shoreline properties, this brings in excess nutrients, especially with the illegal use of fertilizer, and accelerates growth.

The CBI program is dedicated to inspecting all boating equipment entering in and out of the boat launches of Mousam Lake and Square Pond to prevent the introduction of the aggressive invasive plant and animal species. The invasive species that pose the largest threat to the Mousam Lake watershed are: Hydrilla, European Naiad, Curly Leaf Pond Weed, Eurasian Water Milfoil, Hybrid Milfoil, and Variable Leaf Milfoil. Many lakes in New Hampshire and Maine have contracted these invasive plant species, which further increase the threat of them entering the watershed that we, the ASYCC protects. If an invasive were to enter, it would grow rapidly and reach the point where the lake could no longer be used recreationally. Once a lake has no recreational benefits and is deemed unhealthy property values drop accordingly. In the Mousam Lake watershed, a tragedy like this would devastate not only the watershed but also town revenues.

Acton-Shapleigh Youth Conservation Corps Working and Support

Acton-Shapleigh Youth Conservation Corps Supporters

- Town of Acton, Maine
- Town of Shapleigh, Maine
- Mousam Lake Region Association
- Square Pond Improvement Association
- Maine Department of Environmental Protection
- Lakes Environmental Association
- Private Donors

Acton-Shapleigh Youth Conservation Corps Staff

- Pat Jackson, Technical Director
- Amanda Loomis, Technical Support
- Norris Johnson (Shapleigh), Erosion Control Crew Leader
- Morgan Johnson (Shapleigh), Erosion Control Crew Member
- Aaron Rivard (Acton), Erosion Control Crew Member
- Keegan Simons (Shapleigh), Erosion Control Crew Member
- Ben Yeaton (Acton), Erosion Control Crew Member
- Colin Boisvert (Acton), Erosion Control Crew Member
- Alyssa Clarke-Cartwight (Acton), Courtesy Boat Inspector
- Anna Purvis (Acton), Courtesy Boat Inspector
- Brandon Stanton (Acton), Courtesy Boat Inspector
- Bryan Levanie (Acton), Courtesy Boat Inspector
- Don Lelievre (Acton), Courtesy Boat Inspector
- Gail Boisvert (Acton), Courtesy Boat Inspector
- Jenny Supinski (Acton), Courtesy Boat Inspector
- Jacquelyn Archambault (Acton), Courtesy Boat Inspector
- Kady Lemelin (Shapleigh), Courtesy Boat Inspector
- Sue Mrazik (Acton), Courtesy Boat Inspector

Acton-Shapleigh Youth Conservation Corps Board of Directors:

- George Emery, President
- Bill Sherman, Vice President; Treasurer
- Jane Thomas, Secretary
- Dennis Robarge
- Nancy Deans
- Norm Lambert
- Peter Beck

Overview of ASYCC Hired Positions

- **Technical Director:** The Technical Director is a full time position responsible for running all operations of the ASYCC. Duties include assisting landowners in the technical design of their properties, direct supervision of the ECC and its crew leader, ordering all supplies, payroll and billing, and are responsible for the CBI program which involves scheduling and maintaining the program. In addition to running the ECC and CBI programs, the technical director serves as the liaison between the ASYCC Board of Directors, ECC, and CBI programs. During the "off season" the Technical Director maintains equipment and prepares for the coming season, improving upon the ASYCC's operations in any way necessary. This position is 40 hours per week, paying $16.00 per hour.
- **Erosion Control Crew Leader:** The Erosion Control Crew Leader is in charge of overseeing the members of the ECC through leading by example, training, and educating. The priorities of the ECC crew leader are safety, efficiency, and fun, in that order. Safety is always job number one on an ASYCC job site. This position is a 35-hour per week, Monday through Friday position paying $12.00 an hour.
- **Erosion Control Crew Member:** The ECC consists of five hard working, full-time members and one alternate member. All ECC members are residents of the towns Acton or Shapleigh. ECC members install the erosion and runoff control practices designed by the Technical Director. The crew is only allowed to use hand tools during the construction of the project. This position is a 30-hour per week, Monday through Friday position paying $9.00 an hour.
- **Courtesy Boat Inspector Member:** The CBIs' overall job is to protect the waterways from invasive plants. Their duties include educating boat owners about the potential dangers of invasive species within waterways, inspecting boats, trailers, and equipment within the boat. In the 2011 season, ten CBIs were hired to work between 15 to 20 hours each per week to cover the boat ramps of Mousam Lake and Square Pond. CBIs are paid $10.00 per hour, and work on both boat ramps.

Acton-Shapleigh Youth Conservation Corps Programs

The ASYCC consists of two major programs which function independent of each other, the Erosion Control Crew (ECC) and the Courtesy Boat Inspection (CBI). Both work to protect the valuable resources within the Mousam Lake watershed in Goose Pond, Loon Pond, Mousam Lake, and Square Pond, yet on two distinct fronts. The ECC program works on lake front properties in the watershed that have asked us for assistance on their erosion and run off problems. The CBI Program covers the public boat launches on both Mousam Lake and Square Pond. Both programs work to educate landowners and users of the local water bodies about the threats of invasive aquatic plants, property management, and lake protection.

Erosion Control Program

The ECC is the older of the two ASYCC programs. It was set up back in 2001 to implement erosion control projects on properties that had extensive erosion within the Mousam Lake watershed. The ECC educates landowners, business owners, and municipalities about the effects that weather, wave action, and development have on their properties and the region. The ECC program is comprised of a group of local high school students who complete conservation projects around the Mousam Lake Watershed every summer. Overseeing the ECC program is the technical director whose responsibility it is to set up the projects in the water shed, specifically creating an erosion mitigation plan for each unique property for the ECC to eventually implement.

With ongoing development and construction, the ECC continues to help educate homeowners about the most environmentally friendly ways to develop without damaging the watershed's water quality. The use of the EPA's BMPs is the foundation of our work. They aim to minimize impact on the land, use local materials, incorporate the natural landscape into the erosion remedy, promote vegetation, and most importantly prevent pollutants from entering the water body.

The ECC is open all residents, landowners, business owners, and municipalities located on or near Goose Pond, Loon Pond, Mousam Lake, and Square Pond. Landowners must request services of the ASYCC if they would like assistance with their erosion and runoff situation. The objective of the ECC is to conserve and protect landowners' properties from the effects of storm water, erosion, foot traffic, and shoreline wake; ultimately, if done successfully the water quality should improve. The ASYCC ECC provides the labor and technical assistance at no charge. The homeowners only have to pay for the supplies.

Over the past four years the ECC has made significant improvements in the number of projects completed, the number of technical reports written, and the number of sights visited. During the 2008 ECC season the crew completed 20 projects, in the 2009 season the crew completed 16 projects, and in the 2010 ECC season the crew completed 24 projects. This year, 2011, the ECC crew completed 27 projects. Of these 27, 11 were completed in Acton, with the remaining 16 in Shapleigh. The bulk of projects each year are on the larger, more developed lakes, Mousam and Square. This year, 11 projects were done on Square Pond, 14 on Mousam Lake, and 2 on Loon Pond. This breakdown is a very typical year. A goal of the 2012 season is to get Loon Pond and Goose Pond more involved and educated about the services of the ASYCC.

In addition to the project the ECC undertakes, an additional part of the program are technical visits and technical reports. Any property owner in the Mousam Lake watershed that both lives near a water body and believes to have erosion and runoff can receive assistance from the technical director. A technical visit to the property ensues where various BMP suggestions are discussed in light of the property's specific uses. A technical plan is then created to mitigate the property's erosion and runoff into the watershed. Some homeowners choose to do the work themselves and

thus happily accept the technical plan but not the labor from the ECC. This year, 43 technical visits were completed, with 26 technical reports. This is an increase from previous years. In 2010, 34 technical visits and 21 technical reports were completed; in 2009, 33 technical visits and 29 technical reports were completed; and in 2008, 32 technical visits and 26 technical reports were completed.

2 -An ECC member working on infiltration steps

Technical Visit Log

1. MLRA Foot of the Pond (Mousam)
2. Jim and Marg Vederico, 429 13th street (Mousam)
3. Pat & Ed Volta, 116 Shapleigh Corner Rd. (Mousam)
4. Elsy & Harold Cebulla, 558 East Shore Drive (Loon)
5. Donna Gillette, 126 East Shore Drive (Loon)
6. Clean 13th St. culverts (3), 13th street (Mousam)
7. Shapleigh Town Beach, Square Pond Road (Square)
8. Chris & Carolyn Wyss-Edlund, 97 34th street (Mousam)
9. Betty Simpson, 985 Goose Pond Road (Mousam)
10. Bill and Barbara Coye, 160 Indian Village Rd. (Square)
11. Jayne and Ed Bogart, 336 Cedar Drive (Square)
12. Sandy Kendall, 394 Cedar Drive (Square)
13. Jamie Fajardo, 55 24th street (Mousam)
14. Jim Novotny, 3 Trails End (Mousam)
15. Jeff & Marlene Bergart, 51 Channel Road (Square)
16. Steve Luz, 156 Covewood Drive (Mousam)
17. Dick and Kathy Rice, 1030 West Shore Drive (Square)
18. Brenda Melvin, 983 Goose Pond Road (Mousam)
19. John Sullivan, 45 Carpenters Cove (Mousam)
20. Virginia (& Scott) Collard, 10 Daisy Rd. (Square)
21. Francie Gingrich, off 23rd, before jib way (Mousam)
22. Gary & Glena Richardson, 876 West Shore Drive (Square)
23. Mary Ann & Lee Robatore, 858 West Shore Drive (Square)
24. Dick and Joy Chartrain, 115 21st street (Mousam)
25. Dawn Flak, 16 Chestnut (Square)
26. Jill Bowran, 120 Treasure Island Rd (Square)
27. Fred & Fran Tolland, 137 Treasure Island Rd (Square)
28. Nancy Herdecker, 14 Jib Way (Mousam)
29. Fred Arnstein, 10 Jib Way (Mousam)
30. Karen Tufts, 28 Jib Way (Mousam)
31. Bob Fiandaca, 54 Cat Tail Road (Mousam)
32. Dennis Lamargan, 169 23rd St. (Mousam)
33. Russell & Sandra Cuttings, 148 Shapleigh Corner Rd. (Mousam)
34. Mark & Sandy Lemelin, 21 Hemlock Road (Square)
35. Lynn Ligay, 77 24th St. (Mousam)
36. Dan & Debbie Skerry, 74 32nd St. (Mousam)
37. Judy Bagrud, 8 Blueberry Lane (Mousam)
38. George Gereux, 351 7th St. (Mousam)
39. Jacky Chaplain, 53 Channel Circle (Mousam)
40. Scott & Carol Ciak, 112 Covewood (Mousam)
41. Bob Roderick, 80 Avenue D (Mousam)
42. Jim McNamara, 15 Treasure Island Rd. (Square)
43. Susan, 17 Treasure Island Rd. (Square)

2011 Erosion Control Crew Completed Projects

- 2011: 001—MLRA Foot of the Pond (Mousam)
- 2011: 002—Jim and Marg Vederico, 429 13th street (Mousam)
- 2011: 003—Pat & Ed Volta, 116 Shapleigh Corner Rd. (Mousam)
- 2011: 004—Elsy & Harold Cebulla, 558 East Shore Drive (Loon)
- 2011: 005—Donna Gillette, 126 East Shore Drive (Loon)
- 2011: 006—Clean 13th st. culverts (3), 13th street (Mousam)
- 2011: 007—Shapleigh Town Beach, Square Pond Road (Square)
- 2011: 008—Chris & Carolyn Wyss-Edlund, 97 34th street (Mousam)
- 2011: 009—Betty Simpson, 985 Goose Pond Road (Mousam)
- 2011: 010—Bill and Barbara Coye, 160 Indian Village Rd. (Square)
- 2011: 011—Jayne and Ed Bogart, 336 Cedar Drive (Square)
- 2011: 012—Sandy Kendall, 394 Cedar Drive (Square)
- 2011: 013—Jamie Fajardo, 55 24th street (Mousam)
- 2011: 014—Jim Novotny, 3 Trails End (Mousam)
- 2011: 015—Jeff & Marlene Bergart, 51 Channel Road (Square)
- 2011: 016—Steve Luz, 156 Covewood Drive (Mousam)
- 2011: 017—Dick and Kathy Rice, 1030 West Shore Drive (Square)
- 2011: 018—Brenda Melvin, 983 Goose Pond Road (Mousam)
- 2011: 019—John Sullivan, 45 Carpenters Cove (Mousam)
- 2011: 020—Virginia (& Scott) Collard, 10 Daisy Rd. (Square)
- 2011: 021—Francie Gingrich, off 23rd, before jib way (Mousam)
- 2011: 022—Gary & Glena Richardson, 876 West Shore Drive (Square)
- 2011: 023—Mary Ann & Lee Robatore, 858 West Shore Drive (Square)
- 2011: 024—Dick and Joy Chartrain, 115 21st street (Mousam)
- 2011: 025—Dawn Flak, 16 Chestnut (Square)
- 2011: 026—Jill Bowran, 120 Treasure Island Rd (Square)
- 2011: 027—Fred & Fran Tolland, 137 Treasure Island Rd (Square)

2- A drip line trench emptying into a rain garden that is constructed around an existing tree.

Map of 2011 Completed ECC Projects

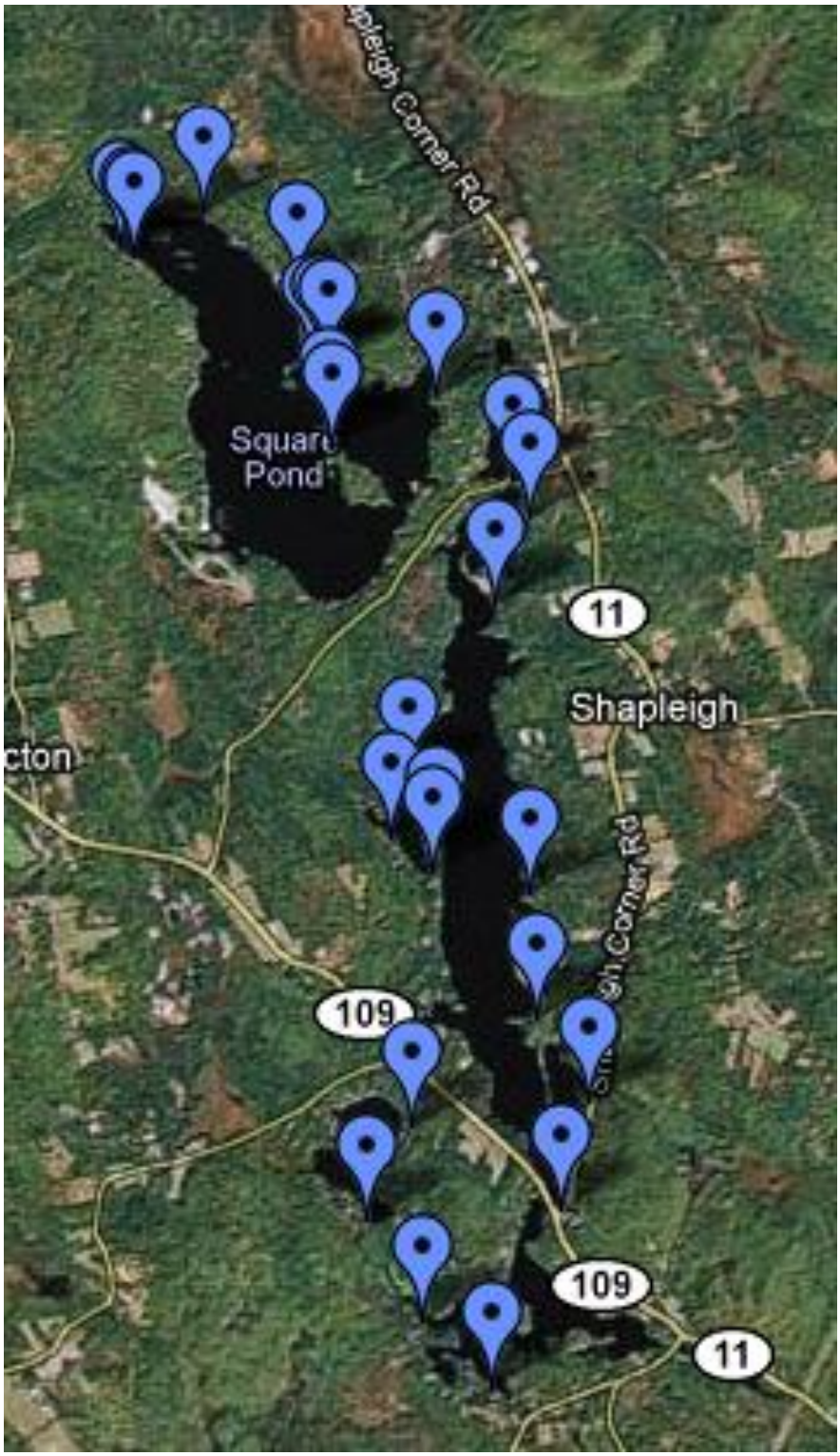


Photo courtesy of Google Maps

Erosion Control Crew Statistics

Total Number of Technical Visits

- 43 Technical Visits in 2011
- 34 Technical Visits in 2010
- 33 Technical Visits in 2009
- 32 Technical Visits in 2008

Total Number of Technical Reports

- 26 Technical Reports written in 2011
- 21 Technical Reports written in 2010
- 29 Technical Reports written in 2009
- 26 Technical Reports written in 2008

Total Number of Projects Completed

- Projects Completed in 2011: 27
- Projects Completed in 2010: 24
- Projects Completed in 2009: 16
- Projects Completed in 2008: 20

Season's Project Breakdown by Water Body

Project Breakdown 2011

-Mousam Lake, Shapleigh: 11
-Mousam Lake, Acton: 3
-Square Pond, Shapleigh: 5
-Square Pond, Acton: 6
-Goose Pond, Shapleigh: 0
-Loon Pond, Acton: 2

Project Breakdown 2010

-Mousam Lake, Shapleigh: 3
-Mousam Lake, Acton: 4
-Square Pond, Shapleigh: 14
-Square Pond, Acton: 1
-Goose Pond, Shapleigh: 0
-Loon Pond, Acton: 2

Project Breakdown 2009

-Mousam Lake, Shapleigh: 7
-Mousam Lake, Acton: 2
-Square Pond, Shapleigh: 6
-Square Pond, Acton: 0
-Goose Pond, Shapleigh: 1
-Loon Pond, Acton: 0

Project Breakdown 2008

-Mousam Lake, Shapleigh: 9
-Mousam Lake, Acton: 1
-Square Pond, Shapleigh: 4
-Square Pond, Acton: 2
-Goose Pond, Shapleigh: 1
-Loon Pond, Acton: 3

Best Management Practices Implemented in 2011 Projects

- Rain Garden
- Rubber Razor Blade
- Infiltration Trench
- Drip Line Trench
- Water Bars
- Infiltration Pathway
- Shoreline Vegetation
- Slope Stabilization Planting
- Vegetated Buffer Strip
- Retaining Wall
- Mulch (Soil conservation mulch; erosion control mulch)
- Dry –well; Plunge Pool
- Infiltration Staircase
- Mulch donut

3- ECC members stabilizing soil with Soil Conservation Mulch

Description of 2011 Completed ECC projects

(Please refer to appendix for pictures of projects)

Project 2011: 001—MLRA Foot of the Pond (Mousam)
Existing issue: The foot of Mousam Lake is the highest traffic beach on the lake. Residents from the nearby regions use it recreationally on a consistent basis. Its location is at the bottom of a slow-grade hill coming from three directions, all funneling to the beach. The largest cause of erosion and runoff was and still is from the street, in which large volumes of water with great velocity carry sediment from the roads towards the water, in some parts unchecked.
BMPs implemented as solution: Rip-rap was placed all along the guardrail to stop the water's momentum, velocity from the three-street funnel. Behind the rip-rap, a fresh layer of Soil Conservation Mulch was applied to absorb the water and stop the sediment. Existing steps with railroad ties were improved. An infiltration trench was dug, diverting the runoff towards vegetation. Lastly, a 2" X 6" pressure treated board spanned the length of the beach to create a barrier between the mulch and the sand (beach). This would serve as the last check for the water.
Materials used:

- 6" —1' rip-rap
- Geotextile fabric
- Soil Conservation Mulch
- 2" x 6" x 8' pressure treated boards

Project 2011: 002— Vederico, 429 13th street (Mousam)
Existing issue: Large amounts of water were coming from the roof and sheet flowing over the property picking up bare soil with little vegetation. The runoff filtered into a brook, which led to Mousam Lake.
BMPs implemented as solution: An infiltration pathway was constructed to catch the runoff and allow it to percolate into the ground. This catch basin prevented the soil from entering the water table by stopping it well before it could reach the brook, as well as keeping the soil in its place.
Materials used:

- ¾" smooth natural stone
- Geotextile fabric
- Fieldstones for walking on

Project 2011: 003—Volta, 116 Shapleigh Corner Rd. (Mousam)
Existing issue: Eight large pine trees were removed due to the threat of them falling onto the house. With the root systems of the old trees decomposing, barer soil exposed, and no more thirsty trees to drink up the water, runoff was carrying bare soil straight down a hill and into the lake.
BMPs implemented as solution: The crew planted 17 trees all around the property to help stabilize the soil and prevent further erosion. They were strategically placed in locations that would slow or stop the runoff in its tracks and force the transport of soil to be halted before entering the lake. Also, Soil Conservation Mulch was laid down in areas of existing erosion gullies to slow down the runoff and absorb it into the ground.
Materials used:

- Soil
- Conservation Mulch
- Variety of Maine
- Native trees

Project 2011: 004—Cebulla, 558 East Shore Drive (Loon)
Existing issue: This property was receiving a substantial amount of water from a dirt road, which was emptying into two driveway entrances. Their whole property was bare soil and the runoff had clearly established its path from the road to the lake. Several areas of their property had eroded into gullies.
BMPs implemented as solution: Over 14 yards of Erosion Control Mulch was brought in to cover the bare soil all around their property. This stabilized the soil, absorbed the runoff, and prevented any soil intrusion into the lake. Furthermore, three large infiltration trenches were placed in the driveway to act as a catch basin for the runoff from the road.
Materials used:

- Erosion Control Mulch
- ¾" crushed stone
- Geotextile fabric

Project 2011: 005—Gillette, 126 East Shore Drive (Loon)
Existing issue: This property was receiving a large amount of runoff from the paved road, which emptied right into her property. Also, runoff from the roof was adding to the volume of water. Because of the grade of the land and the distance from the lake, not a significant amount of runoff was reaching the water but it was eroding the land and transporting soil along the way.
BMPs implemented as solution: Existing boxed- flowerbeds were modified to catch the roof runoff and use it to help hydrate the plants. Soil Conservation Mulch was put in the flowerbeds to absorb large amounts of water. More mulch was spread around the property in parts where runoff from the road funneled in. Many other plants were planted around the property to help stabilize the soil and slow down the runoff. Existing plants were transplanted and replanted to maximize effectiveness and growth.
Materials:

- Soil Conservation Mulch
- Variety of Maine native bushes

Project 2011: 006—Clean 13th St. culverts (3), 13th street (Mousam)
Existing issue: Each season these three dry wells are cleaned because of the significant volume of water they filter, and the substantial debris they collect each year. The culverts are each located in strategic locations, catching where the paved roads direct vast amounts of not only storm water but also sediment from the berms and left over winter sanding.
BMPs implemented as solution: Because the ASYCC already implemented the three dry wells and have made them the appropriate size, it is only necessary to thoroughly clean them so they remain effective. Each is on municipal property so the ASYCC does the town a service by cleaning each of them for an afternoon a summer.

Project 2011: 007—Shapleigh Town Beach, Square Pond Road (Square)
Existing issue: Each season the ASYCC adds to Shapleigh's public beach on Square Pond. The property consists of a downhill paved driveway that empties into a dirt parking lot. In rainstorms, the water pools and flows down towards the water, picking up sediment along the way. Because of the high traffic it consistently has, erosion can make its way easily if the property isn't managed correctly.

BMPs implemented as solution: An existing rain garden was expanded to meet new runoff routes. More mulch was spread on the hillside to absorb the water and prevent loose soil from reaching the water. Lastly, existing infiltration steps were cleaned and touched up.

Materials:

- Erosion Control Mulch
- Native Maine plantings

Project 2011: 008—Wyss-Edlund, 97 34th street (Mousam)

Existing issue: This camp had a very steep back yard with little to stop sheet runoff and erosion. There was an existing cement wall at the bottom but had lost its lip to retain even the slightest amount of runoff. Loose soil was exposed for nearly 40 feet, all vulnerable during a rain event.

BMPs implemented as solution: This property received a makeover consisting of several BMPs. To catch the roof runoff, a drip line trench was put in. The once sloped dirt patio was leveled off with the dirt gathered from the drip line trench, then to be covered with a thick coat of Erosion Control Mulch. Several terraces were put in with 6" x 6" PT timbers going down the slope to act as a network of retaining walls. Each terrace was leveled off and contained lots of plantings and Erosion Control Mulch.

Materials:

- 6" x 6" pressure treated timbers (with 2' rebar)
- Erosion Control Mulch
- ¾" crushed stone
- Plantings
- Geotextile fabric

Project 2011: 009—Simpson, 985 Goose Pond Road (Mousam)

Existing issue: This camp was at the bottom of a steep, paved hill that received a lot of runoff from the pavement. Furthermore, the driveway was pavement, so when the rainwater entered at high speed it continued at high speed. A vegetated island with mulch one day served as a retaining wall, separating the property from the road, but due to sand buildup from each winter, the water would cruise right over retaining wall without time to get absorbed. The lawn, which is inherently a relatively impervious surface, would contract large amounts of sediment from each winter's road sanding and this sediment would make its way to the waterfront. There is a small drainage pipe at the bottom of the driveway but this would do nothing but clog up making it ineffective. Also, most of the neighbor's runoff traveled right to their camp.

BMPs implemented as solution: First, the crew cleaned out the retaining wall between the road and property, removing nearly eight inches of sand buildup to allow for the retaining wall to have its lip exposed, keeping the runoff confined and away from the rest of the property. Fresh mulch and additional plantings were laid down to help absorb the rainwater. The runoff from the roof and the neighbor's property still needed to be addressed, so a rain garden walk put in, which is needed would overflow into a plunge pool. Furthermore, the drain in the driveway was cleaned meaning that when rainfall enters it will drain to the newly constructed plunge pool. A fresh coat of Soil Conservation Mulch was applied over all the existing gardens, especially on the vegetated buffer along the front of the property.

Materials used:

- Soil Conservation Mulch
- Plantings
- ¾" crushed stone
- Geotextile fabric

Project 2011: 010— Coye, 160 Indian Village Rd. (Square)
Existing issue: Stormwater from the dirt road leading into the property would flow down towards their house, then take a turn and work its way around the side and eventually spill into their beach, being compounded by the roof runoff. This would dig a gully in the earth all along its path, growing larger as it gained speed and volume, eventually reaching the beach and bringing a good amount of sand into the lake.
BMPs implemented as solution: An infiltration pathway was made to catch the storm water that would otherwise create gullies. Soil Conservation Mulch was applied to create a vegetated buffer with new plantings.
Materials used:

- Soil Conservation Mulch
- 1 ½" smooth tumbled Natural Stone
- Plantings
- Granite edging, steps, and field stones
- Geotextile fabric

Project 2011: 011— Bogart, 336 Cedar Drive (Square)
Existing issue: This property was victim to the common problem of shorefront undercutting. There were many areas where wakes or ice had exposed large roots from trees, or taken away several feet of shore over time.
BMPs implemented as solution: Not regarded as a 'Best Management Practice,' but what we believed was an intelligent solution given the situation. The ECC crew brought up rocks that were anywhere from 6"-10" from inside the water and placed them along the shoreline to help stabilize the soil.
Materials used:

- None

Project 2011: 012—Kendall, 394 Cedar Drive (Square)
Existing issue: This house had an enormous amount of runoff going into the lake. To begin with, the large paved and impervious driveway allowed storm water to gather at speed and pour down the large dirt boat launch. The runoff going down the boat launch would gather a lot of bare soil and had a direct shot to the water. On the other side of the house was a bare soil area that was not doing much to absorb the runoff. Furthermore, the roof runoff falls onto their sandy beach and create gullies.
BMPs implemented as solution: Three large infiltration trenches were dug in the dirt boat launch to act as a reservoir for the water to go into and percolate into the ground. The bottom one directed the water towards new mulch and plantings to help drink up the water. To catch the roof runoff, a drip line trench was put, with a perpendicular mulch pathway coming off it towards the beach. On the other side of the house, Soil Conservation Mulch was laid down as well as a bunch of new bushes.
Materials:

- ¾" crushed stone
- Soil Conservation Mulch
- Plantings
- Geotextile fabric

Project 2011: 013—Fajardo, 55 24th street (Mousam)
Existing issue: This camp sat up on an extremely steep hill down to the water. Very little vegetation was established leaving mostly bare soil exposed. This created an easy access erosion highway for the runoff.
BMPs implemented as solution: Thick Erosion Control Mulch was laid down to help stabilize the soil and allow the runoff to be absorbed into the ground. On the steepest part where mulch alone would not hold its ground, a biodegradable jute mat was put down to help keep the soil from eroding and the mulch placed on top from falling into the water. Throughout all of this vegetation was planted to encourage the root systems to establish and hold the soil. Specific ground cover plants were chosen with the hope of spreading.
Materials used:

- Erosion Control Mulch
- Jute Mat (Biodegradable)
- Plantings

Project 2011: 014—Novotny, 3 Trails End (Mousam)
Existing issue: This camp was close to the waterfront and had been subject to receiving significant amounts of storm water from the neighbor's property. The sediment had any easy pathway straight to the water.
BMPs implemented as solution: A drip line trench was put in all along the side of the house where both the roof runoff fell and the water from the neighbor's property entered. At the end of the drip line trench a rain garden was constructed which encompassed a large tree that had its root severely exposed from all the runoff.
Materials used:

- ¾" crushed stone
- Soil Conservation Mulch
- Plantings
- Geotextile fabric

Project 2011: 015—Bergart, 51 Channel Road (Square)
Existing issue: Along the side of their camp some storm water would accumulate and make its way to the water, collecting sediment along the way.
BMPs implemented as solution: A large and extensive vegetated buffer was put in to absorb the storm water and help use it to hydrate the plants.
Materials used:

- Nutra-mulch
- Plantings

Project 2011: 016—Luz, 156 Covewood Drive (Mousam)
Existing issue: Storm water would travel down the long paved road leading into his driveway and make its way down the side of his house and into the lake, carrying sediment with it as it made its way towards the water. Both the driveway and the hill along the side of his house were bare soil, making the runoff able to gain speed and particles of sediment. With a large roof came lots of roof runoff, which would seep through the deck and fall onto very vulnerable bare soil for the runoff to erode and transport to the lake.

BMPs implemented as solution: To cover the bare soil in the driveway, ¾" crushed stone was brought in to stabilize the soil, slow down the runoff, prevent gullies, and give the water more time to percolate into the ground. Along the side of the house a large infiltration staircase was built to catch the runoff and force it to percolate down into the ground. Similar to the driveway, underneath the back deck a crushed stone patio was constructed to stabilize the bare soil, break up the path of the runoff, and give the water time to percolate into the ground.

Materials used:

- ¾" crushed smooth Natural Stone
- Granite edging and steps
- Geotextile fabric

Project 2011: 017—Rice, 1030 West Shore Drive (Square)

Existing issue: Storm water would travel down their dirt driveway, down the side of their house, and onto the back lawn, which lacked vegetation. Moreover, the runoff from the roof added to the volume of velocity of water that made its paths in the back lawn towards the lake.

BMPs implemented as solution: A drip line trench was constructed along nearly the entire back of the house to catch the roof runoff and let it absorb into the ground. The majority of the backyard was mulched using Soil Conservation Mulch to help stabilize the soil, absorb the water, and prevent erosion and runoff from entering the lake. A vegetated buffer on that spanned the whole shoreline was given a face-lift with more mulch and better measures to prevent any sediment from entering the water.

Materials used:

- Soil Conservation Mulch
- ¾" crushed stone
- Geotextile fabric

Project 2011: 018—Melvin, 983 Goose Pond Road (Mousam)

Existing issue: Neighbor of project host # 2011:009, it was receiving a significant volume of storm water with great velocity from the road that connected to their paved driveway. The runoff had no checks to slow it down until it reached the neighbor's property. Even though BMPs had been implemented in the neighbors' property, in the event of a large rainstorm further measures needed to keep the runoff from overflowing the BMPs next door. Also, it was not right to have this property's runoff go into the neighbor's property, so something needed to be done.

BMPs implemented as solution: A deep rain garden was made at the bottom of their paved driveway with specific Maine native plantings to help absorb the water and use it to make them grow.

Materials used:

- Soil Conservation Mulch
- Maine native plantings

Project 2011: 019—Sullivan, 45 Carpenters Cove (Mousam)

Existing issue: This camp had an extremely steep hill going down to the water that had very loose bare soil exposed. No plants had survived there, nor any type of soil stabilization method. It was a matter of time before the hill became a vertical cliff with sped up erosion. With a slope this steep, there was nothing we knew of to address the issue and try to stop the land from eroding into the lake.

BMPs implemented as solution: We thought the highest chance of keeping the land from eroding into the water would be to put jute mat all along the face of the hill, stake it into the ground, and put plants throughout it to encourage a root system to establish itself. Specific ground cover plants were chosen with the hope of spreading and stabilizing more loose soil. On top of the jute mat, Erosion Control Mulch was laid down to help give the plants water, nutrients, and try to biodegrade the jute mat faster.

Materials used;

- Erosion Control Mulch
- Ground cover plants
- Jute mat (biodegradable)

Project 2011: 020—Collard, 10 Daisy Rd. (Square)

Existing issue: Storm water from the dirt road that led to their dirt driveway would bring large volumes of water that was creating gullies and transporting sediment right into their property. The gullies were eroding their land. Runoff from the road and driveway would travel along the side of their house, eroding a large pathway, and spill into their front lawn. The trees in the front lawn had roots that were very exposed and were posing a threat to the safety of the house.

BMPs implemented as solution: A rubber razor was built, running across the driveway. This received all the water from the road and diverted it into lush vegetation. Along the side of the house, a mulch pathway was put into prevent further erosion and absorb all the rainwater that falls behind the rubber razor. The mulch would keep the roots from getting more exposed.

Materials used:

- Soil Conservation Mulch
- Rubber from conveyor belt
- 2" x 6" pressure treated boards for rubber razor

Project 2011: 021—Gingrich, off 23rd, before jib way (Mousam)

Existing issue: This camp was one of the originals on the lake and had been subject to massive amounts of erosion. The large roof creates a lot of runoff that had led to roots of enormous pines severely exposed; there was zero vegetation on most of the yard that sits on a downward slope to the water. There is an almost 400 ft. downhill dirt driveway leading straight to the water that brings large amounts of storm water down it, transporting sediment from the gullies it has eroded. Everywhere you looked were areas that had been heavily eroded with no place for the storm water to go but into the lake bringing large amounts of sediment with it.

BMPs implemented as solution: Fourteen cubic yards of mulch were brought in to cover areas of bare soil that were subject to runoff. The roots of the major trees received large mulch donuts to keep the roots from getting more eroded and to help hydrate and keep them healthy and strong. A thick 100 ft. vegetated buffer with mulch surrounded half the house, full of native Maine plants. A dry well was put at the bottom of the long driveway, right before the lake to help catch all the runoff and keep it from entering the lake with the pollutants it carries. Furthermore, large areas of mulch were put down in areas where the runoff was sheet-eroding to stabilize the soil and help it absorb into the ground.

Materials used:

- Soil Conservation Mulch
- Native Maine plantings
- ¾" crushed stone
- Geotextile fabric

Project 2011: 022—Richardson, 876 West Shore Drive (Square)
Existing issue: This camp sits at the bottom of a steep driveway that is pavement for most of it and then turning to dirt. Storm water from the paved road above brings in a lot of runoff with high velocity. The runoff created gullies in the driveway. Once it reached the house, it was move along the side of the house and creates gullies down the pathway that led to the water. The front yard was subject to erosion and the runoff was bringing sediment into the lake.
BMPs implemented as solution: Two rubber razors were built in the driveway. One would divert the water into a dry well covered in mulch, while the other directed the runoff to a vegetated piece of land off to the side of their camp. At the bottom of their pathway, a water bar was put in to divert the runoff away from the front yard and into a rain garden.
Materials used:

- Rubber from conveyor belts
- 2" x 6" pressure treated boards
- 6" x 6" pressure treated timbers
- Soil Conservation Mulch

Project 2011: 023:—Robatore, 858 West Shore Drive (Square)
Existing issue: The paved road that ran along the front lawn was angled downhill towards their property. During rain events, storm water would fly down and into the property, which was mostly grass. Grass, which is a relatively impervious surface, would not absorb much of the high velocity runoff, nor did it like the sediment that it carried with it as seen by the big areas of dead grass. Sheet flowing down their property, the runoff would eventually reach the lake. Also, this large house inevitably had a large roof, which added volumes of runoff to the equation.
BMPs implemented as solution: A large rain garden was made where the street runoff would enter the property. This connected to a long berm, which was mulched and vegetated. Down by the water, a vegetated buffer was constructed to stop the runoff and sediment from entering the lake, hydrate the plants, and prevent further land loss.
Materials used:

- Soil Conservation Mulch
- Maine native plantings

Project 2011: 024—Chartrain, 115 21st street (Mousam)
Existing issue: Storm water would run down their steep dirt driveway creating massive gullies. The runoff would enter their yard without a reservoir for the water to get absorbed, damaging the grass as it ran towards the lake. The runoff from the roof fell onto a brick patio which would then drop into their sandy beach and make its way to the lake, bringing the sand with it.
BMPs implemented as solution: The steep dirt driveway had two rubber razors put in it, which emptied into dry wells that were surrounded by vegetation in case it overflowed. This prevented the gullies from forming and took care of most the water that used to reach the lawn. The rainwater that falls in front of the second rubber razor is remediated by creating a mulch trench that ran along their brick walkway. This serves as a drip line or infiltration trench, however, they did not want stone so mulch was substituted. On this portion of the property, all runoff is now able to be absorbed into the ground. The runoff from the roof that falls onto the brick patio and on the sandy beach was addressed with a vegetated mulch buffer to absorb the water, hydrate the plants, and stabilize the soil.

Materials used:

- Rubber from conveyor belt
- 2" x 6" pressure treated boards for razor
- Soil Conservation Mulch
- Maine native plantings

Project 2011: 025—Flak, 16 Chestnut (Square)
Existing issue: Storm water would gather along the private dirt road, gaining speed and sediment, and creating gullies with no outlet until it reached the Flak's driveway. Here, it would create more gullies on their bare driveway and make its way to the bottom of the driveway where old railroad ties lied. In small storms the railroad ties would keep the water contained, however, in the event of anything bigger than a small storm the runoff would flow over the railroad tie lip and run along the grass and into the lake, bringing sediment with it.
BMPs implemented as solution: A rubber razor was put in on the private dirt road. It effectively checks the runoff and diverts it to a depression in the land lush with vegetation. The gullies in the driveway were smoothed out and at the end of it, flush with the railroad ties, an infiltration trench was put in to catch the runoff and allow it to percolate into the ground.
Materials used:

- Rubber from old conveyor belt
- 2" x 6" pressure treated boards for rubber razor
- ¾" crushed stone
- Geotextile fabric

Project 2011: 026—Bowran, 120 Treasure Island Rd (Square)
Existing issue: This camp sits on a point that is subject to wake and wave action on a consistent basis. Mass amounts of shoreline erosion occur and are taking away this valuable piece of land. Trees have been completely undercut and land has been lost. Furthermore, the large roof created a lot of roof runoff, which falls into the land and pools, eventually building up to spill over into the lake bringing in sediment with it. Some of the massive trees had roots that were severely exposed, posing a great threat to the safety of the camp.
BMPs implemented as solution: Drip line trenches were put in to catch the roof runoff and help it percolate into the ground. Along the eroded shoreline, this property was lucky enough to have tons of 6"-12" rocks in shallow water. Rocks were brought up and placed along the shoreline to prevent further undercutting and land loss. The trees that had exposed roots were given mulch donuts to help absorb water and prevent further erosion.
Materials used:

- Soil Conservation Mulch
- ¾" crushed stone
- Geotextile fabric

Project 2011: 027—Tolland, 137 Treasure Island Rd (Square)
Existing issue: This small camp had some roof runoff that was creating a drip line in the soil and spilling down the hill. The top steps down to the lake were cement, while the last two were wooden framed with earth in the middle. The water would travel over both the cement and wooden steps onto a bare soil area where it would pool. Eventually, the storm water would overflow this too and fall onto their sandy beach, making gullies in the sand as it ran towards the lake.

BMPs implemented as solution: A drip line trench was put in to catch the runoff from the roof. The two wooden steps were retrofitted, replacing the compact earth fill with crushed stone to let it percolate into the ground. The bare soil area after the steps received a layer of Soil Conservation Mulch. Along the beach a mulch buffer was put in as well as an additional bush. Trees that had rocks surrounding them were replaced mulch to better meet their needs, as rocks are no friend of tree roots.

Materials used:

- Soil Conservation Mulch
- ¾" crushed stone
- Geotextile fabric
- Maine native plant

Courtesy Boat Inspection Program

General Overview:
The goal of the ASYCC Courtesy Boat Inspection Program (CBI) is to prevent the introduction of invasive aquatic plants from entering the local watersheds. Invasive aquatic plants threaten the livelihood of the freshwater bodies, surrounding towns, and wildlife populations in the area. The ASYCC CBI program works with boat owners to inspect boats for plant fragments and provide the boat owner with knowledge about invasive aquatic plants. Boat inspections and education are the best ways to protect Mousam Lake, Square Pond, Loon Pond, and Goose Pond waterbodies from the attack of invasive aquatic plants. Once an invasive aquatic plant enters a waterway it is very costly and usually unsuccessfully treated or removed. The result of an invasive aquatic plant attack is a drastic decrease in property values, water quality, and recreational opportunities. There are several lakes in the region that have fallen victim to invasive plant fragments entering their water body, which is why the ASYCC CBI program works very hard to prevent invasive aquatic plants from entering Mousam Lake and Square Pond.

CBI's are located on the Mousam Lake and Square Pond public boat ramps to check all boats, trailers, and other items within the boats such as fishing tackle, lines, ropes, water toys, etc for invasive aquatic plants and fragments. If plants are found in or on the boat the CBI removes the plant or fragment and sends it to the lab for identification.

Since 2008, the ASYCC has increased the number of hours on both the Mousam Lake boat ramp and the Square Pond boat ramp.

- In 2008, the Square Pond boat ramp was covered Saturday and Sunday for a total of 12 hours per week, running from the first weekend of July to the last weekend of August, with additional coverage on Columbus Day. A total of 173 boats were inspected during the 2008 CBI Season.
- In 2009, coverage on Square Pond increased to Friday through Sunday for a total of 21 hours, running from June 15th to Columbus Day weekend (October 12th). A total of 233 boats were inspected during the 2009 CBI Season.
- In 2010, CBI coverage on Square Pond increased to Monday through Thursday for a total of six hours per day, with Friday through Sunday at 12hours hours per day. The CBI program during the 2010 season ran from June 6th to Columbus Day. Please note that after Labor Day coverage on Square Pond decreased to four hours per day, Friday through Sunday. A total of 432 boats were inspected during the 2010 CBI Season.
- In 2011, coverage on Square Pond increased during the pre and post seasons. The CBI pre-season and post-season runs Friday through Sunday for six hours per day for a total of 18 hours per week. Pre-season ran from May 30th-June 26th, while the post-season runs from September 9th-October 10th. Regular season on Square Pond CBI runs Monday through Thursday for five hours per day and Friday through Sunday for 12 hours per day, bringing the total to 56 hours per week. A total of 531 boats were inspected during the 2011 CBI Season.

Like Square Pond, Mousam Lake has also seen a significant increase in coverage since the 2008 CBI season.

- In 2008, the Mousam Lake boat ramp was covered Monday through Thursday for eight hours per day, and Friday through Sunday for ten hours per day, for a total of 62 hours per week. A total of 1,182 boats were inspected during the 2008 CBI Season.

- In 2009, the number of hours on Mousam Lake increased to Monday through Thursday for 12 hours per day, and Friday through Sunday for 14 hours per day, for a total of 90 hours per week. A total of 2,316 boats were inspected during the 2009 CBI Season.
- In 2010, Mousam Lake the number of hours covered was increased. The Mousam Lake Boat Ramp was covered Sunday though Saturday for a total of 14 hours each day, for a total of 98 hours per week. A total of 2,663 boats were inspected during the 2010 CBI Season.
- CBI coverage for 2011 has remained the same from 2010, with Sunday through Saturday receiving 14 hours per day for a total of 98 hours per week. During the pre-season, May 30th-June 26th and post-season, September 9th-October 10th, Mousam Lake CBI coverage is reduced to Friday through Sunday for 14 hours per day, 42 hours per week. A total of 3,638 boats were inspected during the 2011 CBI Season.

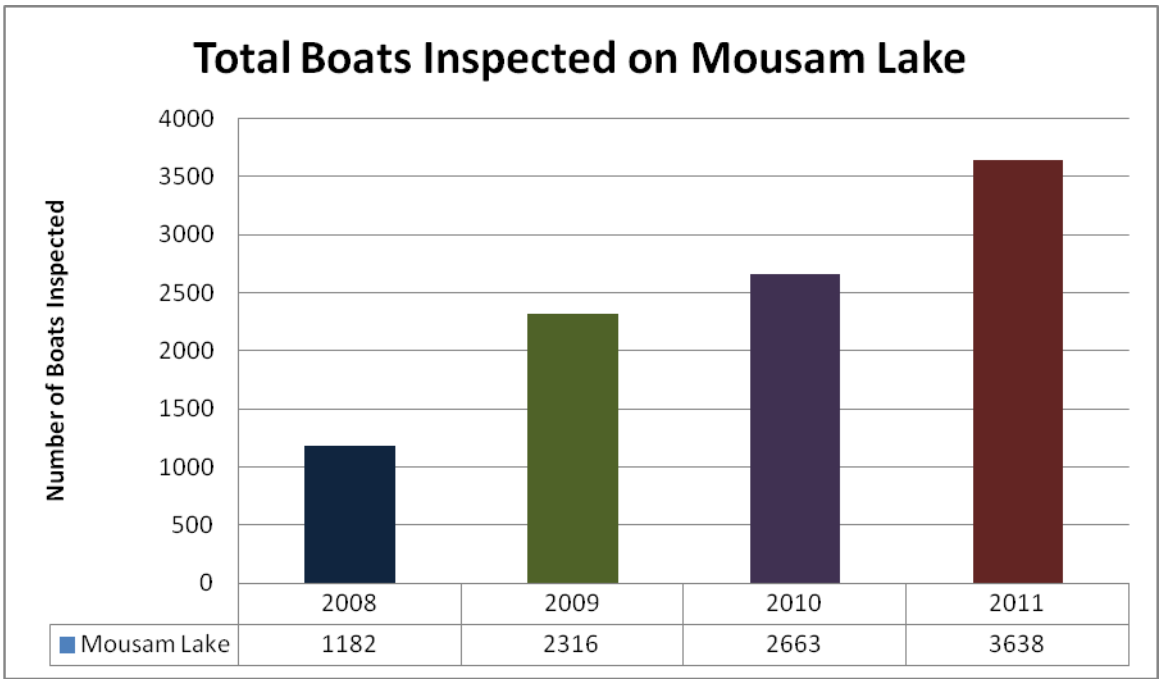
The total number of boats inspected on Mousam Lake and Square Pond has significantly increased since 2008.

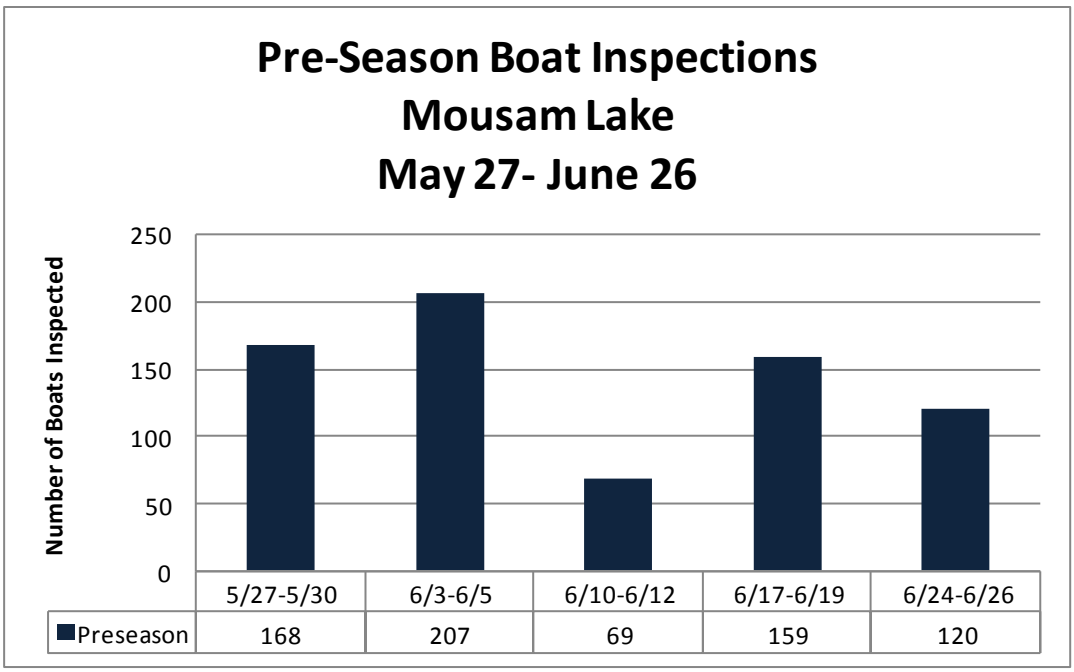
- Mousam Lake: In 2011a total of 3,638 boats were inspected. This is an increase of 26.8 percent from 2010.
- Square Pond: In 2010 a total of 531boats, an increase of 18.6 percent from 2010.

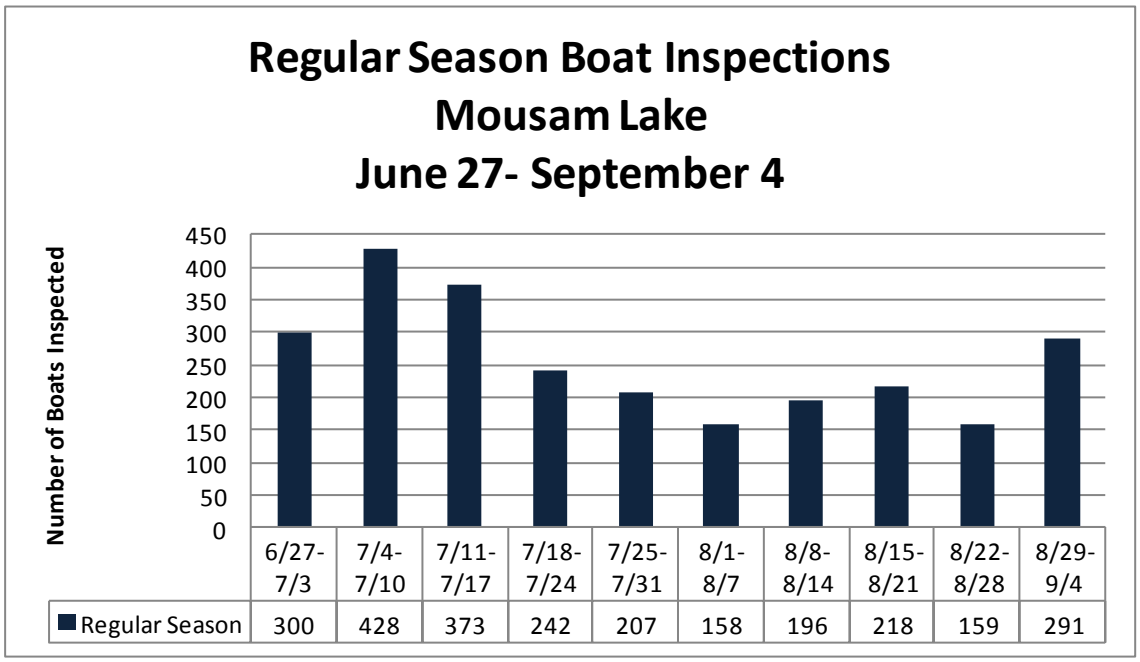
The total number of plant fragments was 58, with two of them being invasive aquatic plants. One of the invasive aquatic plants was caught entering Square Pond in June and the other fragments were found entering Mousam Lake in October. The number of waterways with invasive plants in them in New Hampshire, Maine, and Massachusetts has significantly increased each year. The increase in invasive aquatic plants in nearby waters demands increase coverage on our boat ramps, in addition to better boater education which our Courtesy Boat Inspectors provided to boat owners and anglers.

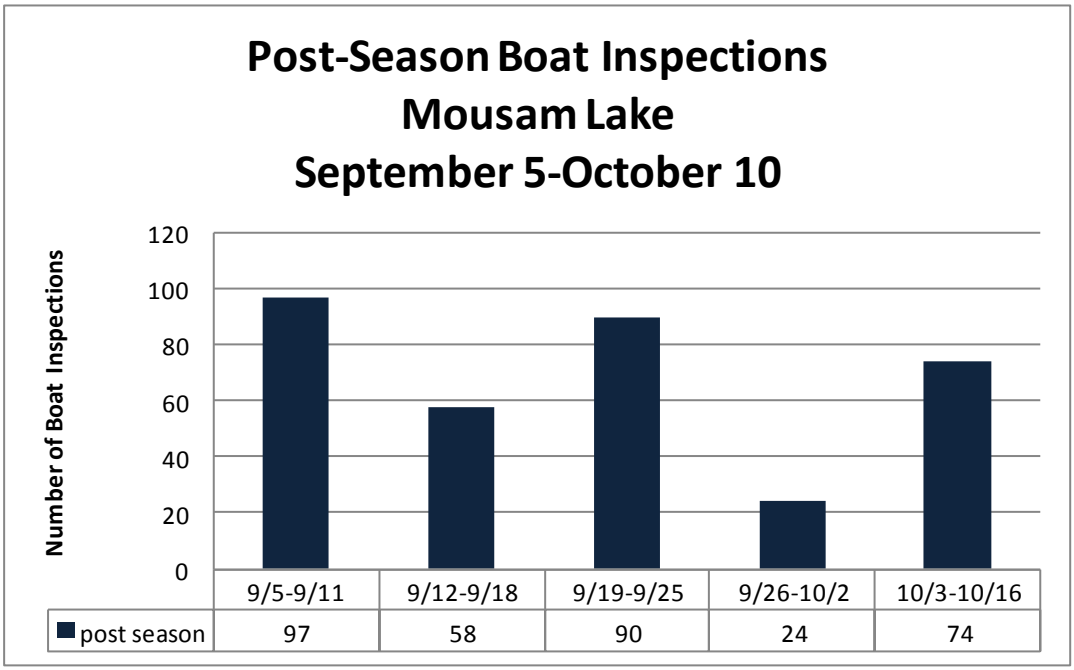
Below are tables representing the number of boats inspected on a weekly basis from Square Pond and Mousam Lake, in addition to a yearly Lake/ Pond comparison of boat inspections. As the numbers of hours covered on Square Pond and Mousam Lake have increased over the years, so have the number of boat inspections.

Mousam Lake

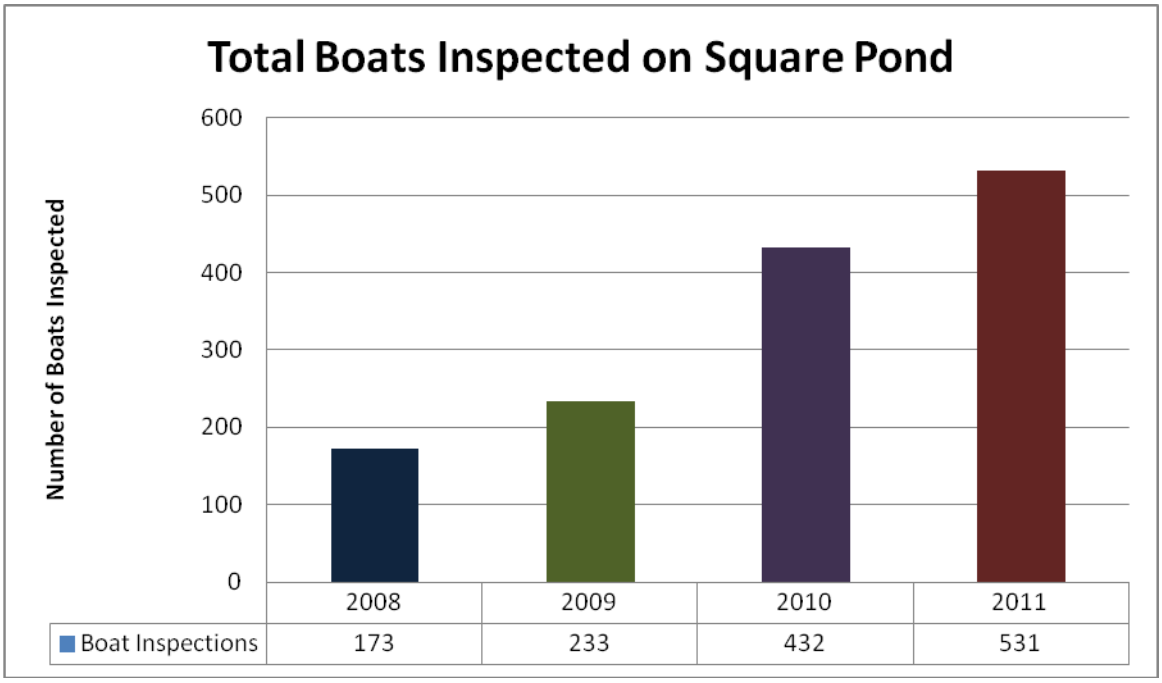

Total Boats Inspected on Mousam Lake
Number of Boats Inspected
4000
3500
3000
2500
2000
1500
1000
500
0
2008
2009
2010
2011
Mousam Lake
1182
2316
2663
3638

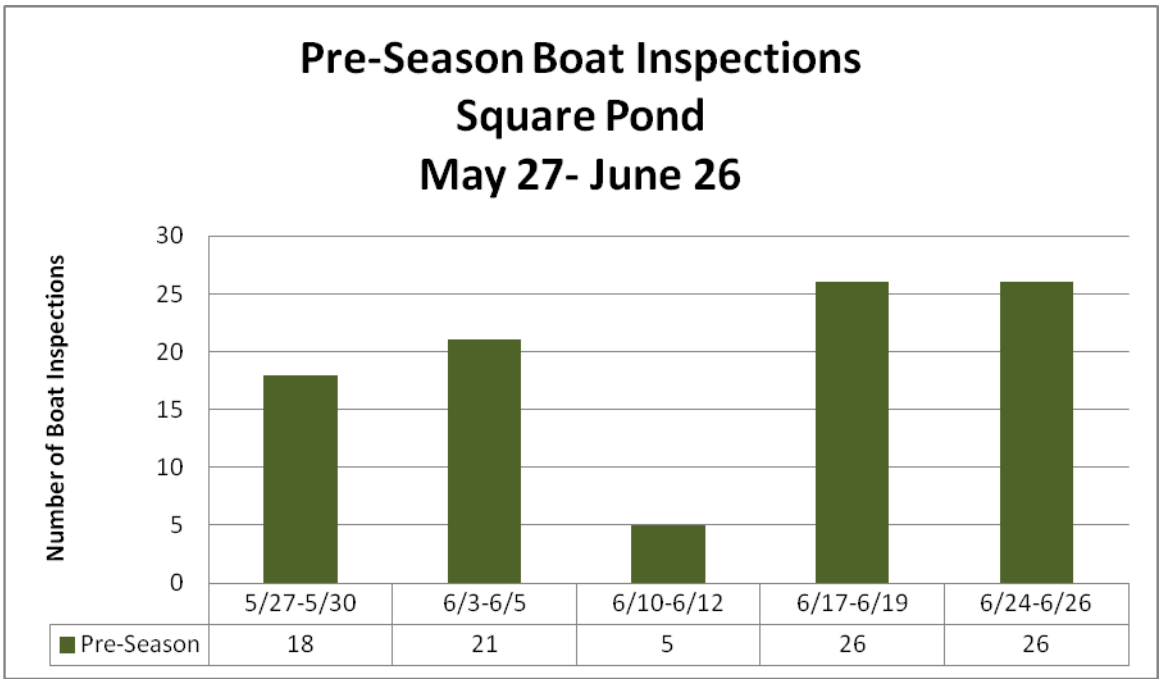

Pre-Season Boat Inspections
Mousam Lake
May 27- June 26
Number of Boats Inspected
250
200
150
100
50
0
5/27-5/30
6/3-6/5
6/10-6/12
6/17-6/19
6/24-6/26
Preseason
168
207
69
159
120

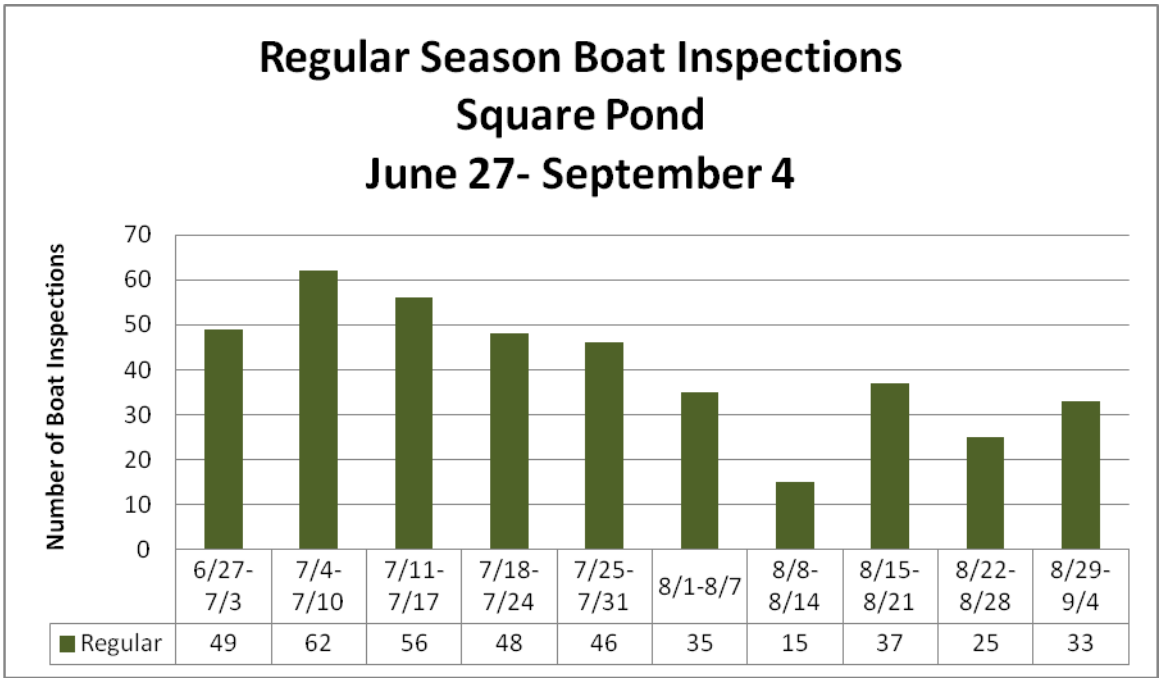

Regular Season Boat Inspections
Mousam Lake
June 27- September 4
Number of Boats Inspected
450
400
350
300
250
200
150
100
50
0
6/27-7/3
7/4-7/10
7/11-7/17
7/18-7/24
7/25-7/31
8/1-8/7
8/8-8/14
8/15-8/21
8/22-8/28
8/29-9/4
Regular Season
300
428
373
242
207
158
196
218
159
291

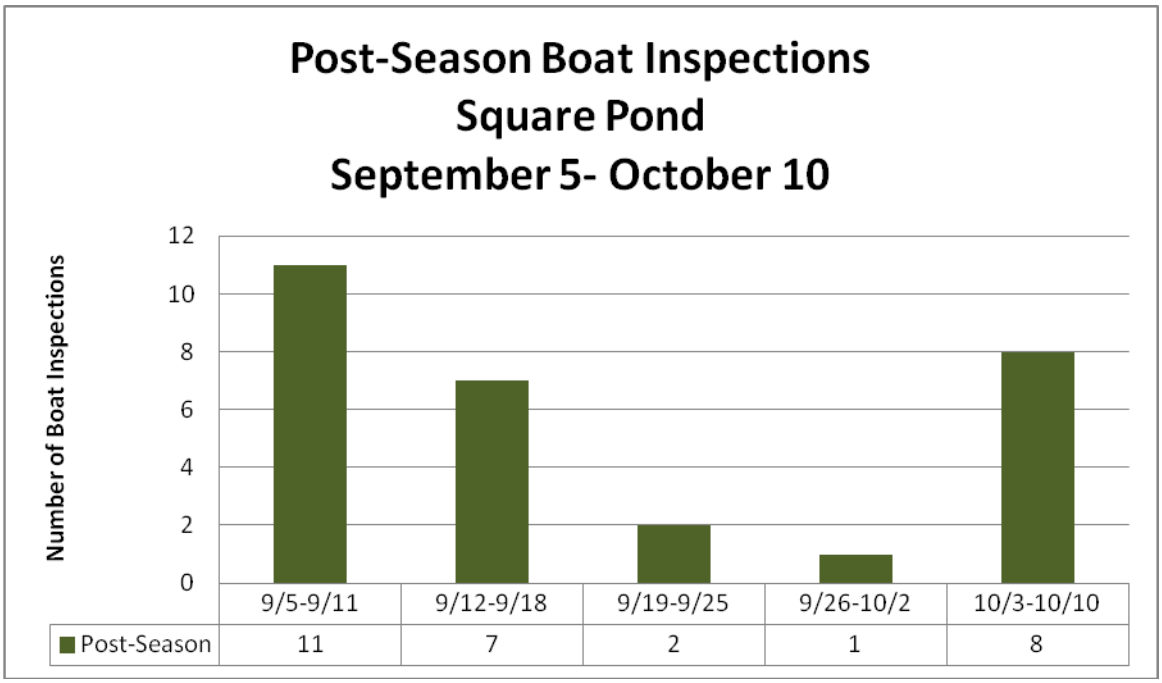

Post-Season Boat Inspections
Mousam Lake
September 5-October 10
Number of Boat Inspections
120
100
80
60
40
20
0
9/5-9/11
9/12-9/18
9/19-9/25
9/26-10/2
10/3-10/16
post season
97
58
90
24
74

Square Pond


Total Boats Inspected on Square Pond
Number of Boats Inspected
600
500
400
300
200
100
0
2008
2009
2010
2011
Boat Inspections
173
233
432
531


Pre-Season Boat Inspections
Square Pond
May 27- June 26
Number of Boat Inspections
30
25
20
15
10
5
0
5/27-5/30
6/3-6/5
6/10-6/12
6/17-6/19
6/24-6/26
Pre-Season
18
21
5
26
26


Regular Season Boat Inspections
Square Pond
June 27- September 4
Number of Boat Inspections
70
60
50
40
30
20
10
0
6/27-7/3
7/4-7/10
7/11-7/17
7/18-7/24
7/25-7/31
8/1-8/7
8/8-8/14
8/15-8/21
8/22-8/28
8/29-9/4
Regular
49
62
56
48
46
35
15
37
25
33


Post-Season Boat Inspections
Square Pond
September 5- October 10
Number of Boat Inspections
12
10
8
6
4
2
0
9/5-9/11
9/12-9/18
9/19-9/25
9/26-10/2
10/3-10/10
Post-Season
11
7
2
1
8

Plant fragments found during the 2011 Courtesy Boat Inspection Season. Plant fragments highlighted in red are invasive aquatic plant fragments found entering Mousam Lake or Square Pond.

Date	Water Body	Courtesy Boat Inspector	Native or Non-native	Plant Species if known
June 25	Mousam Lake	Donnie	Native	
June 25	Mousam Lake	Pat	Native	
June 25	Mousam Lake	Pat	Native	
June 26	Square Pond	Sue	Invasive: not confirmed*	Milfoil
June 27	Square Pond	Sue	Native	
June 30	Square Pond	Gail	Native	
June 30	Square Pond	Sue	Native	
Date	**Water Body**	**Courtesy Boat Inspector**	**Native or Non-native**	**Plant Species if known**
July 4	Square Pond	Brandon	Native	
July 5	Mousam Lake	Gail	Native	
July 5	Mousam Lake	Gail	Native	
July 7	Square Pond	Sue	Native	
July 7	Square Pond	Sue	Native	
July 9	Square Pond	Chad	Native	
July 10	Mousam Lake	Anna	Native	Bladderwort
July 10	Mousam Lake	Brandon	Native	Bladderwort
July 13	Mousam Lake	Gail	Native	
July 14	Square Pond	Sue	Native	
July 14	Square Pond	Sue	Native	
July 14	Square Pond	Sue	Native	
July 14	Square Pond	Sue	Native	
July 14	Square Pond	Sue	Native	
July 15	Square Pond	Gail	Native	
July 17	Square Pond	Brandon	Native	Pipewort
July 19	Mousam Lake	Gail	Native	Bladderwort
July 21	Square Pond	Sue	Native	
July 25	Square Pond	Sue	Native	Pipewort
Date	**Water Body**	**Courtesy Boat Inspector**	**Native or Non-native**	**Plant Species if known**
August 3	Square Pond	Sue	Native	
August 3	Square Pond	Sue	Native	
August 4	Square Pond	Sue	Native	
August 11	Mousam Lake	Donnie	Native	Elodea
August 29	Square Pond	Sue	Native	
August 29	Square Pond	Sue	Native	
August 29	Square Pond	Sue	Native	
August 31	Mousam Lake	Alyssa	Native	
Date	**Water Body**	**Courtesy Boat Inspector**	**Native or Non-native**	**Plant Species if known**
September 4	Mousam Lake	Sue	Native	
September 4	Mousam Lake	Sue	Native	
September 4	Mousam Lake	Sue	Native	
September 4	Mousam Lake	Sue	Native	
September 5	Square Pond	Sue	Native	
September 11	Mousam Lake	Sue	Native	
September 11	Mousam Lake	Sue	Native	
September 23	Mousam Lake	Gail	Native	Bladderwort
September 24	Mousam Lake	Sue	Native	Bladderwort
September 24	Mousam Lake	Sue	Native	
September 24	Mousam Lake	Sue	Native	
September 24	Mousam Lake	Sue	Native	
September 24	Mousam Lake	Sue	Native	
September 24	Mousam Lake	Sue	Native	
September 25	Mousam Lake	Sue	Native	
September 25	Mousam Lake	Sue	Native	Bladderwort
September 25	Mousam Lake	Sue	Native	
September 25	Mousam Lake	Sue	Native	
September 25	Mousam Lake	Sue	Native	
September 25	Mousam Lake	Sue	Native	
September 25	Mousam Lake	Sue	Native	
September	Mousam Lake	Sarah	Native	
September	Mousam Lake	Sarah	Native	
Date	**Water Body**	**Courtesy Boat Inspector**	**Native or Non-native**	**Plant Species if known**
October 9	Mousam Lake	Donnie	Invasive: Not confirmed*	Milfoil

*Identified in the field as invasive milfoil, invasive identification not confirmed through DNA testing (fragment too destroyed to conduct a DNA test on)

Appendix

Appendix A: ASYCC Yearly Statistics

Acton-Shapleigh Youth Conservation Corps

Our record, by the numbers

		2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	To Date
Erosion Control Deomonstration Projects		27	24	16	20	18	26	18	17	17	15	20	218
By town	Acton	11	7	2	6	8	16	11	9	4	7	10	91
	Shapleigh	16	17	14	14	10	10	7	8	13	8	10	127
By lake	Mousam Lake	14	7	9	10	7	10	10	12	12	9	12	112
	Square Pond	11	15	6	6	7	3	1	2	2	1	3	57
	Goose Pond	0	0	1	1	2	2	4	1	0	1	1	13
	Loon Pond	2	2	0	3	2	11	4	1	1	3	2	31
	Other	0	0	0	0	0	0	2	1	0	1	1	5
Technical Visits		43	34	33	32	48	65	17	31	30	35	60	428
Courtesy Boat Inspections	Total	4169	3095	2549	1421	1051	580	617	585	506			14573
# of Inspections By Lake	Mousam Lake	3638	2663	2316	1239	1042	553	616	573	506			13,146
	Square Pond	531	432	233	182	9	27	1	12				1427
Plant Fragments Collected	Mousam Lake	34	0	14	7	33	5	8	7	0			108
	Square Pond	24	3	3	1	0	1	0	1				33
	Loon Pond		1										1

Appendix B: ASYCC Information Handout- Printed in MLRA newsletter, SPIA newsletter, and available in print format at Acton and Shapleigh Town Halls, Mousam Lake and Square Pond Boat Ramps, and YCSWD

The Acton-Shapleigh Youth Conservation Corps

What is the ASYCC?

The Acton-Shapleigh Youth Conservation Corps (ASYCC) is a 501c3 non-profit organization formed to protect Mousam Lake, Square Pond, Goose Pond, and Loon Pond known collectively as the Mousam Lake-Square Pond Watershed. The ASYCC is committed to providing education, community outreach, technical assistance, courtesy boat inspections, and accomplishing erosion control projects to manage and maintain water quality within the Mousam Lake-Square Pond Watershed. Our efforts are two-pronged: An Erosion Control Crew (ECC) whose job is to reduce phosphorous intrusion into our lakes, and the Courtesy Boat Inspection (CBI) program designed to prevent invasive plants from entering our lakes.

The ASYCC is funded by taxpayer money from the towns of Acton and Shapleigh, local lake associations, the proceeds from the annual golf tournament, and private donors like you. The ASYCC provides FREE labor for Environmental Landscaping, Education, Community Service, and Boat Inspections through these funds.

The ASYCC is overseen by a Board of Directors (BOD) made up of volunteers dedicated to a healthy lake. The BOD hires and trains local personnel (mostly teenagers) and directs the organization's activities and functions.

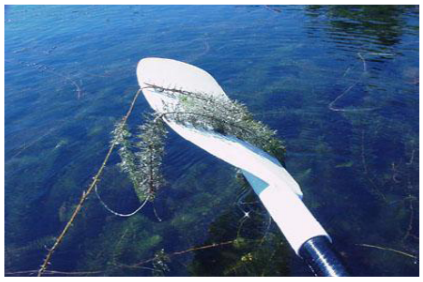
The ASYCC season runs from late spring to early fall, offering property owners within the Mousam Lake-Square Pond Watershed expertise on how to remediate erosion on their property and to monitor boats that enter and exit our waters.

Courtesy Boat Inspectors (CBI)

We all clean our boats in the fall and prep them in the winter for the next spring's boating season. But do we closely inspect our boats for plant fragments on the propeller, trailer, anchor, fishing gear or other surfaces before entering or leaving a lake? We hope you do, but we don't rely on that hope.

The Mousam Lake-Square Pond Watershed is surrounded by lakes with invasive aquatic plants that can destroy a waterbody. Non-native plants like Milfoil, Curly Leaf Pondweed, Hydrilla, Brazilian Elodea, European Frogbit, European Naiad, Fanwort, and Parrot Feather can and do invade lakes in the U.S. Our watershed is surrounded by several lakes that have been invaded by non-native aquatic plants. Just one small fragment of an invasive plant can create an entire lake invasion.

Invasive plants have no natural enemy to keep them under control and therefore reproduce rampantly. Yes, all waterbodies in the Mousam Lake-Square Pond Watershed have vegetation and weeds naturally, but these plants are native and therefore self-controlled.



With no natural checks for invasive aquatic plants and an increase in phosphorus contamination, these plants grow rapidly, stunting the growth of the native plants, and before long invade and dominate the entire plant zone in a very short time. Invasive aquatic plants inhibit swimming, fishing, motor boating, paddling a canoe or kayak. In other words, the lake becomes choked with invasive plants. To remove these plants is a very costly endeavor, hundreds of thousands dollars are spent annually to reduce invasive aquatic plants from contaminated lakes, often without success. Bottom line: it is much easier to prevent the introduction of invasive aquatic plants than to rid an infested lake of these plants.

The ASYCC maintains a CBI program at the Mousam Lake and Square Pond boat ramps on a regular basis from Memorial Day to Columbus Day each year. CBIs visually inspect all boats entering and leaving Mousam Lake and Square Pond while maintaining records indicating date and time of entry and exit, last known lake visited. This data is important for tracking plant fragments found on boats and to better track invasive plants movement from waterbody to waterbody. When a plant is found, CBIs examine the plant fragment and if a question arises as to its

identification, the plant fragment is sent to the Maine Center for Invasive Aquatic Plants for identification.

CBIs are not present at the ramps year round, so this leaves boat inspections up to the boat owners during the off months. Please do your part and inspect your boat every time you ENTER and EXIT a lake.

Erosion Control Crew (ECC)

In the mid 80's to early 90's water testing in the Mousam Lake-Square Pond Watershed revealed deteriorating water quality. The culprits were **PHOSPHORUS** and **SEPTIC INTRUSION.**

Phosphorus enters our lakes by rain event run off. Runoff from developed land occurs 10 times faster than from an undeveloped forest due to the compaction of soils, removal of trees and buffer strips, and the introduction of impervious surfaces, e.g. building, roads, and driveways, in addition to the overuse and abusing of septic system. These factors all cause rain water to carry phosphorus and waste contaminants into our lakes. Contamination of lakes and ponds by phosphorus can be reduced by re-vegetating and covering exposed soil. That work is the main focus of the ECC. With help from the ECC landowners can do their part in protecting our waters.

If you own a property within the Mousam Lake-Square Pond Watershed, and use a septic system, have paved driveways or other impervious surfaces, have lost trees or buffer strips, the ECC can help.

Before

After

The best way to fix the problem is to play detective during a rain event. During and after a rainstorm, look for areas where the rain creates gullies. Find where storm water enters and exits your property. Look for areas where pine needles or leaves have been pushed aside from the water path. If you find an "erosion footpath"- you have a problem, a problem with phosphorus run-off that needs remediation.

The ASYCC can provide **FREE assistance to help fix the problem!!!!!!!** Our Technical Director will visit your property, provide you with a remediation plan, and if you decide to accept our help we will send our Erosion Control Crew to remediate the problem. The landowner is responsible for supplying the materials to accomplish the project.

The ECC crew is comprised of 5-6 local teenagers and completes on average 25 erosion control projects annually. Under the guidance of the ASYCC Technical Director the ECC will apply best management erosion control practices to correct your erosion problem.

Septic Systems

The Mousam Lake-Square Pond Watershed is unique in that we have sandy soils that allow nutrients easy access to our waters. For this reason, septic systems are a source of unwanted nutrients to our lakes. Year- round residents should pump their septic system every 2-3 years and seasonal residents every 3-5 years, In order to properly maintain your system use only the amount of water needed for a given task, e.g.:

- Do only 1 load of laundry a day
- Limit shower use
- Put nothing down the toilet except human waste
- Limit the amount of grease entering your septic system, scrap food from plates before washing, consider eliminating your dishwasher

If fact, attend or sponsor a SEPTIC SOCIAL and get the "poop scoop." Septic socials are FREE and EDUCATIONAL.

Doing nothing to promote good water quality has a downside: your investment will suffer. Excessive phosphorus or waste encourages the growth of lake vegetation and algal blooms that inhibits swimming, fishing, and creates obnoxious odors, all of which decrease your property values. The ASYCC exists to help you and other landowners preserve and protect our local natural resources…as well as your investment.

To learn more about the ASYCC please visit our website

www.asycc.com

Appendix C: ASYCC ECC Photo Analysis