The Acton-Shapleigh Youth Conservation Corps

2012 Season Report

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I. Executive Summary

The Acton-Shapleigh Youth Conservation Corps (ASYCC) is completing its twelfth 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 first program is the ECC program which implements conservation projects on lake front properties to reduce erosion and prevent run-off, specifically phosphorus, from entering the watershed. The overall objective is to improve the water quality of the lakes by reducing phosphorus intrusion via non-point source pollution. This year, the ECC completed 26 projects, each uniquely addressing the property's run-off problem without compromising the homeowner's ability to use and enjoy the camp site. Each project successfully addressed the erosion that was occurring 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 27 projects were completed in 2011, the total number of conservation projects completed in one season is not necessarily the most important indicator of the overall impact of the program. The amount of time and energy required to effectively stop run-off from eroding a property and polluting a lake with phosphorus intrusion varies from job to job, some taking several days while others just an afternoon. Because we enjoyed an experienced crew in 2012 we were able to complete several projects that required as many as six BMPs. The crew leader was an experienced four-year veteran of the ASYCC's ECC program and many of the crew members were in their second or third year. This experience level had a positive impact on the efficiency, quality and execution of work. Additionally, the technical director, now on his third year with the program, returned with new and improved methods to manage an effective program.

The Courtesy Boat Inspections program is the ASYCC's second overarching program. The program completed another extremely successful season. The goal of the CBI program is to prevent the introduction of all aquatic plants and marine species, especially invasives, from entering the watershed. This is more important today than ever before because of the increase in invasive plants and mussels 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 the property values of local residents, would be catastrophic.

CBIs inspect each boat and trailer before entering the public boat launches of Mousam Lake and Square Pond. They are instructed to also educate, to an appropriate extent, each boat owner on the importance of not transplanting plant and marine species from one lake to the next by inspecting their own boats and trailers.

Once again CBI coverage increased from the previous year. In 2012 CBIs covered the Mousam Lake boat launch 98 hours per week during the peak season, 36 hours per week during the pre-season, and 40 hours per week during the post-season. Square Pond's boat launch was covered 60 hours per week during the peak season, 16 hours per week during the pre-season and 22 hours

[1] asycc.com, 2012.

per week during the post-season. While the peak season hours have remained the same as 2011 hours at both ramps, 14 hours per day at Mousam and 8.5 hours per day at Square, pre and post season hours have increased substantially at both ramps. Mousam Lake was covered as early as mid-April and over a few weekends of the following month for the bass tournaments and sunny, warm weekends.

Figure 1 The Erosion Control Crew showing the ASYCC Board of Directors one of their 2012 projects.

II. The Acton-Shapleigh Youth Conservation Corps

Introduction

The Acton-Shapleigh Youth Conservation Corps (ASYCC) is a non-profit organization founded in 2001, working to protect the immediate 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 its ecological importance as well as for the enjoyment of the local community, businesses, and its visitors.

Each year the ASYCC strives to improve upon its previous successes. The ASYCC hires local residents who, through their work, come to have a vested interest in protecting the local waterways. Between the two programs, CBI and ECC, and administrative roles the ASYCC hired 24 employees during the 2012 season. Of those 24, 22 were local residents. Hiring locally is extremely important to us. We want to have the residents of Acton and Shapleigh learn how to protect this vital resource. Furthermore, with the exception of three adults, all are young people. We believe in employing and educating our youth to help produce future leaders in our efforts to protect valuable resources like watersheds and better care for the planet .

The ASYCC was created for the purpose of helping to restore Mousam Lake. In the early 1990's the EPA placed Mousam Lake on the list of Maine "Lakes at Risk." Understanding the importance the lake has on the town's economy and recreation, there began a major effort on the part of many of the local residents who were able to partner with the Maine Department of Environmental Protection to launch a campaign to restore Mousam to a healthy lake. One of our two programs, the Erosion Control Crew (ECC), continues to target residential remediation projects to prevent phosphorus intrusion into the lake. After much time, hard work, educational outreach, and nearly a million dollars from the region, Mousam Lake was removed from the 'Lakes at Risk' list in 2007.

With invasive species threating New England water bodies more and more every year, our second overarching program, the Courtesy Boat Inspection (CBI) program, was designed to prevent the transportation of any aquatic species, both plants and animals, from entering Mousam Lake and Square Pond. The emphasis is on invasive species, but we collect and send to the state all plant and animal fragments taken off boats and trailers at the two boat launches.

Educational outreach and community involvement is the underlying foundation of our mission. Education is the most critical piece of the puzzle. Generally speaking, there is a lack of education among the public on the importance our actions have on the larger ecosystem. Our CBI program helps boaters understand how vital it is to inspect their own boats each time they are going to or leaving a water body. The ECC program and technical director spend a lot of time with homeowners and town residents to help educate them on how properties contribute to phosphorus intrusion and what it means to the health of a lake. The homeowners that host an ECC project take great satisfaction in knowing they're doing their part in caring for the lake.

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, as well as a few residential homes. Over time, Mousam Lake became a more populated residential community. This resulted in the loss of naturally forested areas, the addition of dirt and paved roads, lawns, and un-vegetated properties all having a negative impact on the lake's water quality. When residential developers used phosphorus, nitrate, nitrite, fertilizers, and on top of that rapidly clear-cut 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 the "Lakes at Risk" list. Due to Mousam Lake being classified as an "Impaired Water Body", the town received funding and special attention from the state and local governments to help fix the poor water quality. After many years, much local effort and significant resources, Mousam Lake was taken off the list in 2007. In turn, indicator species such as loon, salmon, and other native species have started to return back to the area. Mousam Lake being off 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. The ASYCC works hard to help educate the local residents to prevent such a recurrence.

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 may become impaired. It costs less to prevent endangering a water body than to fix one that is already impaired. Prevention in this case is far less expensive than reacting to problems once they exist and that is why the towns fund the ASYCC.

Figure 2 One of the many examples of erosion caused by residential development. Photo taken at Mousam Lake on one of the properties we implemented Best Management Practices.

Geography of Mousam Lake Watershed:

Mousam Lake stretches 926 acres, with over 700 residences inhabiting its shorelines. Square Pond covers 896 acres, with nearly 500 residences inhabiting its shoreline. Both Loon Pond and Goose Pond are significantly smaller water bodies, both in size and development. Loon Pond has just over 200 residencies while Goose Pond has 40. 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 3. Courtesy of EPA's National Lakes Assessment: a Collaborative Survey of the Nation's Lake

[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 Watershed

The Mousam Lake watershed is a valuable resource not only to the lake front property owners but also to the livelihood of economic and social development for the greater 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 and run-off creates erosion; it is a self-perpetuating cycle. When rainwater and melting snow are not absorbed into vegetation or deposited into a water body right away, it will travel down hill until it is absorbed or deposited. As it runs down hill, the run-off gathers together increasing in volume as well as velocity. The effect is erosion. Often times, once erosion begins, it penetrates substrates in the soil that are not as compact allowing for accelerated erosion. As the erosion is occurring, the run-off transports what it has eroded, which in this region is a general sandy gravel composition. Further perpetuating again, when the run-off transports this composition, it then has the ability to erode more of the land because of the sand and gravel churning up more of the land as it travels downhill. Unfortunately, the downhill topography of the four lakes means that the erosion and run-off ends up in the lake.

When the erosion is deposited into the lakes, it brings in phosphorus. Phosphorus is a natural nutrient that is necessary for plant life, but it is classified as a limited nutrient. Phosphorus is healthy to a certain amount, but overabundance is detrimental. With all of the development over the last several decades, the removal of natural vegetation along the shorelines has resulted in excess amounts of phosphorus entering the watershed.

The results of erosion from waterfront properties such as those found in the watershed boundaries of the ASYCC can be on several levels. It affects the biology of lakes by introducing excessive nutrient loading which leads to algal blooms, lower dissolved oxygen leading to the loss of native marine life, as well as decreased water quality and increased turbidity. From an economical standpoint, the less healthy the lakes are the lower the property values are valued. Recreational use can decrease as well. Property owners who remove vegetation and do not address the run-off appropriately can get gullies running through their land, mass amounts of soil removed exposing the roots of trees, water problems in their homes, and the water can degrade the structural integrity of structures such as walls, stairs, pathways, and porches. The ECC's conservation projects are designed to reduce harmful erosion and prevent run-off from entering the watershed by allowing it to naturally percolate into the ground like it is theoretically suppose to do.

The second major issue threatening the watershed 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, and even regions of the United States. They have been unintentionally transported to faraway 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 are dangerous because they grow at abnormally high rates and are extremely difficult to control, often times being impossible to completely eradicate from lakes and rivers. 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 any 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 state of Maine has banned 11 invasive aquatic plants that have been documented in Maine public waters as of 2012: Brazilian elodea, Curly-leap pondweed, Eurasian water milfoil, European frog-bit, European naiad, Fanwort, Hydrilla, Parrot Feather, Variable-leaf water milfoil, Water Chestnut, and Yellow floating heart. As of March of 2012, there are 23 water systems in Maine that have one of these invasive plants. Nearby New Hampshire is up the low 70's. Massachusetts is even worse. There are three lakes within 30 minutes from the Mousam Lake Watershed that have documented infestations. The threat of invasive plants being transported from nearby lakes is very real and our CBI's primary objective is to stop the plants from ever entering.

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. Lakes with extreme infestations can reach a point where they can no longer be used recreationally because the plant has overtaken so much. The CBI program is the best way to counter the threats of aquatic invasive plants by inspecting boats entering the Mousam Lake and Square Pond boat launches each summer.

Figure 4 ASYCC Courtesy Boat Inspector thoroughly looking over a boat before entering Mousam Lake.

III. 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
- Province Lake Golf Course for their annual golf tournament

Acton-Shapleigh Youth Conservation Corps Staff

- Pat Jackson, Technical Director
- Amanda Loomis, Assistant Technical Support

Erosion Control Crew:

- Norris Johnson (Shapleigh), Erosion Control Crew Leader
- Aaron Rivard (Acton), ECC Crew
- Ben Yeaton (Acton), ECC Crew
- Colin Boisvert (Acton), ECC Crew
- Ronnie Cartwright (Acton), ECC Crew
- Morgan Johnson (Shapleigh), ECC Crew

Courtesy Boat Inspectors:

- Alyssa Clarke-Cartwight (Acton)
- Natalie Dionne (Acton)
- Keegan Simons (Acton)
- Sarah Stanley (Sanford)
- Bryan Levanie (Sanford)
- Don Lelievre (Acton)
- Gail Boisvert (Acton)
- Jenny Supinski (Acton)
- Jacquelyn Archambault (Acton)
- Kady Lemelin (Shapleigh)
- Sarah Stanley (Springvale)
- Sue Mrazik (Acton)
- John Coleman (Acton)
- Zach Lemelin (Shapleigh)
- Cassandra Tremblay (Acton)
- Melissa Carmichael (Shapleigh)
- Paige Tranchemontagne (Acton)

Figure 5 The Erosion Control Crew showing off their Loon shaped Rain Garden.

Acton-Shapleigh Youth Conservation Corps Board of Directors

- George Emery, President
- Norm Lambert, Vice President
- Bill Sherman, Treasurer
- Jane Thomas, Secretary
- Beth Matthews,
- Nancy Deans
- 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 for the ECC program include assisting landowners in the technical design of environmental improvements to their properties, direct supervision of the ECC and its crew leader, ordering all supplies, payroll and billing, and public outreach and education. Duties for the CBI program include scheduling and overseeing the program, tracking the number of inspected boats, and acquiring grants with the Lakes Environmental Association. 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 $17.00 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, effectiveness of project implementation, managing crew member's abilities, and to have fun while doing it, all in that order. Safety is always job number one on an ASYCC job site. This position is for 35 hours per week, Monday through Friday, at $13.00 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 run-off control practices designed by the Technical Director. The crew uses only hand tools during the construction of the project. This position is a 30 hour per week, Monday through Friday position paying between $9.00-$10.00 an hour depending on how long they've been with the program.

Courtesy Boat Inspector Member: The CBIs' main job is to protect the Mousam Lake and Square Pond boat launches from boats and trailers transporting plant and animal species into the lakes. The broader reason is to prevent invasive plants and animals from entering the watershed. 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 2012 season, a total of 16 CBIs were hired to work, most working between 15 to 20 hours each week, with some joing the ASYCC in late August to work the post-season. CBIs are paid $10.00 per hour, and work on both boat ramps.

IV. ASYCC Erosion Control Crew Program

Erosion Control Program Overview

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 program is responsible to educate 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. This entails creating an erosion mitigation plan for each affected property.

With ongoing development and construction on lakeside properties, 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 Best Management Practices (BMPs) are the foundation of our work. They aim to minimize man's 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 services of the ECC are open to anyone owning property on Mousam Lake, Square Pond, Goose Pond, or Loon Pond. A project usually begins with a homeowner requesting the technical director to look at their erosion situation. A technical visit from the Technical Director follows and discussions will take place as to how the homeowner uses the land in every way possible. Once the technical director has gathered enough information from the homeowner and has acquired a good understanding of the natural landscape he then recommends various BMPs to address the erosion without compromising how the homeowners want to use their land. A technical report will be created using ~~the~~ suggested BMPs, in which the photos taken of the property will have the BMPs superimposed on the report so a homeowner may conceptualize how it will look when finished. Those living on one of the four lakes will be given the option for the ECC to do the work, or the homeowner himself. If the homeowner chooses to use the labor of the ECC the technical director will pick a date that works for both parties. The labor and technical assistance is free of charge. The homeowner is responsible to pay for the materials that the ECC uses to complete for the project.

Over the past five years the ECC has made significant improvements in the number of projects completed, the number of technical reports created, the number of sights visited, and overall outreach and education to the townspeople.

Figure 6. Map of Mousam Basins 1 & 2. Courtesy of EPA http://www.epa/gov/water/tmdldocs /9760_tmdlmousamrep.pdf

Map of 2012 Completed ECC Projects

Figure 7. Created using Google Maps

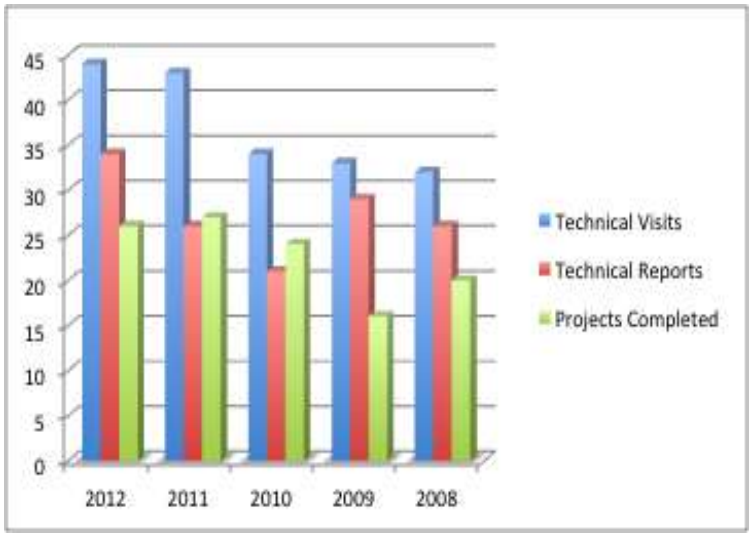
Erosion Control Crew Statistics

Total Number of Technical Visits
44: Technical Visits in 2012
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
34: Technical Reports created in 2012
26: Technical Reports created in 2011
21: Technical Reports created in 2010
29: Technical Reports created in 2009
26: Technical Reports created in 2008

Total Number of Projects Completed
26: Projects Completed in 2012
27: Projects Completed in 2011
24: Projects Completed in 2010
16: Projects Completed in 2009
20: Projects Completed in 2008

ECC Annual Comparison



Season's Project Breakdown by Water Body:

Project Breakdown 2012
- -Mousam Lake, Shapleigh: 6
- -Mousam Lake, Acton: 7
- -Square Pond, Shapleigh: 5
- -Square Pond, Acton: 3
- -Goose Pond, Shapleigh: 1
- -Loon Pond, Acton: 4

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

1. Rain Garden
2. Rubber Razor Blade
3. Infiltration Trench
4. Drip Line Trench
5. Water Bars
6. Infiltration Pathway
7. Shoreline Vegetation
8. Slope Stabilization Planting
9. Vegetated Buffer Strip
10. Retaining Wall
11. Mulch (Soil conservation mulch; erosion control mulch)
12. Dry –well; Plunge Pool
13. Infiltration Staircase
14. Mulch donut

Figure 8 The ECCs spreading mulch and planting native Maine bushes.

Description of 2012 Completed ECC projects

(Please refer to website for pictures of projects)

PROJECT 2012:001—Shapleigh Town Beach (Square Pond)
Existing issue: The Shapleigh Town Beach is a high traffic property on Square Pond. 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. Each season we tend to the beach and hillside to improve it. Without upkeep significant volumes of run-off flow towards the beach and into the lake, causing erosion along the way. If not tended to, high phosphorus intrusion can occur because of the sandy beach.
BMPs implemented as solution: An existing rain garden was expanded to meet new runoff routes. More mulch was spread on the hillside as well as a large parking area to absorb the water and prevent loose soil from reaching the water. Ten native plantings were planted on the hillside to help address the issue long-term. Lastly, existing infiltration steps were cleaned and touched up.
Materials:

- Erosion Control Mulch
- Native Maine plantings

PROJECT 2012:002—Bagrud, 8 Blueberry Lane (Mousam Lake)
Existing issue: This property resides at the bottom of a long dirt street that brings in massive volumes of run-off during any rain storm. The path of the water runs down hill without any checks, eroding the property and spilling sediment and phosphorus into the lake.
BMPs implemented as solution: We heavily mulched the 100' driveway with a 4" thick layer of Soil Conservation Mulch. A rubber razor was installed part way down the driveway to divert the majority of the run-off into a low lying depression of native vegetation
Materials:

- Soil Conservation Mulch
- Rubber razor wire

PROJECT 2012:003—13th Street Culverts (Mousam Lake)
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 located in three strategic locations, catching run-off 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 dry well serves 13th street residents so the ASYCC does the town a service by cleaning each of them during an afternoon each summer.

PROJECT 2012:004—Folsom, 868 West Shore Drive (Square Pond)
Existing issue: This property resides at the bottom of a paved street that brings in massive volumes of run-off during any rain event. The path of the water runs down their dirt driveway without any checks, eroding the driveway, and continues underneath and to the side of the hill until

it reaches the front yard where it continues to do major eroding. It all ends up in the lake, which can be seen from the large deposits in shallow water.
BMPs implemented as solution: We installed a rubber razor at the top of the driveway to account for all the run-off that was coming from the street. For the rain that fell past the razor, two vegetated buffers were put in to absorb the run-off and stabilize the soil.
Materials:

- Soil Conservation Mulch
- Native Maine plantings
- Rubber razor wire

PROJECT 2012:005—Mrazik, 1080 West Shore Drive (Square Pond)
Existing issue: This property is also at the bottom of a paved street that brings in massive volumes of run-off during any rain event. The run-off enters the property at three points along the hill, each with high velocity and volume, eroding as it runs down hill. As it travels down the property, the erosion gets worse and worse until it reaches the lake and deposits large amounts of sediment, and thus phosphorus.
BMPs implemented as solution: We installed several BMPs. We began by creating a vegetated buffer about 10' wide full of Soil Conservation Mulch and native plantings to help absorb the water and stabilize the soil. We also installed a rain garden and an infiltration path. A previously existing patio was improved so account for the run-off and to prevent further erosion down hill. A large garden was expanded to account for a drainpipe that was making matters worse so it could be used to help provide the plantings with more water.
Materials:

- Soil Conservation Mulch
- Native Maine plantings

PROJECT 2012:006—Carpenito, 60 Covewood Drive (Mousam Lake)
Existing issue: The black top street leading to the camp is pitched such that it empties the run-off directly into the property. The water continues down hill, eroding their driveway and into their yard until finally reaching the lake.
BMPs implemented as solution: We installed an infiltration trench at the top of the driveway to catch the run-off from the street. Further down we spread 14 yards of Erosion Control Mulch on both sides of their house to absorb all the remaining water and stabilize the soil.
Materials:

- Erosion Control Mulch
- ¾" stone and Geotextile fabric for trench

PROJECT 2012:007—Puopolo, 169 14th Street (Mousam Lake)
Existing issue: The topography of the land is a very steep slope leading down to the lake. While there is a good amount of vegetation already, there is a break in the vegetation right along the shoreline where the camp has a landing area for sitting and recreational use. Run-off from just the last few yards of sloping land would erode his hillside making it a potentially big problem in the future if left as is.
BMPs implemented as solution: To address the slope erosion, we used heavy Erosion Control Mulch with the hope of it absorbing the run-off and slowing it down to a non-destructive level.

Along the landing area we installed a vegetated buffer to establish root systems and drink up the run-off before it reaches the lake.
Materials:

- Erosion Control Mulch
- Native Maine plantings

PROJECT 2012:008—Verity, 180 Avenue D (Mousam Lake)
Existing issue: This was a dirt driveway that had been severely eroding for who knows how long. The driveway slopes downhill with berms on each side that are much higher than the driveway, making it impossible for the water to go anywhere but down the impermeable driveway. Massive roots were exposed and the gravel was loose, with car traffic making it worse each time.
BMPs implemented as solution: We had never addressed an issue quite like this so there was some trial and error. Overall, we brought in many tons of gravel and sand to create a uniform slope. We installed a rubber razor which diverted the run-off through a berm into a highly vegetated area.
Materials:

- ½" crushed stone
- Sand
- Rubber Razor and timbers
- Erosion Control Mulch

PROJECT 2012:009—Reeves, 720 West Shore Drive (Square Pond)
Existing issue: In their back yard, there is a previously established stone pathway towards the water that runs for at least 100 feet. This pathway would be where all the run-off travels from the roof and the black top driveway. It would run the length of the path and then spill over the end and erode the yard leading up to the lake, bringing in phosphorus.
BMPs implemented as solution: We retrofitted the first 15 feet and last 15 feet of the pathway by creating an infiltration pathway about one foot deep. This served as a catch basin for much of the run-off to enter and theoretically get absorbed into the ground. After the pathway, we installed a rain garden to catch any of the remaining runoff and use it to hydrate the plantings.
Materials:

- ¾" Stone
- Soil Conservation Mulch
- Native Maine plantings

PROJECT 2012:010—Ciak, 112 Covewood Drive (Mousam Lake)
Existing issue: This camp had been getting a lot of work done on it so there was a ton of bare soil that was exposed. The topography is sloping downhill, with it being very steep right before the shoreline. Whenever it rained, the run-off had nowhere to go but towards the lake, eroding through the bare soil. If nothing was done their hill would be undercut and the problem would be bigger than we could handle.
BMPs implemented as solution: We installed a drip line trench under the back roof to absorb the run-off that was coming off of the roof. Where the hill began, we put down a four-inch thick layer of Soil Conservation Mulch with about 30 plantings spread throughout. This prevented the run-off from gathering unchecked which lead to massive erosion. The plantings will establish strong root systems and stabilize the soil, and the mulch will also stabilize the soil. At the bottom of the hill, we

put in an infiltration pathway to their dock to catch any of the remaining runoff that made its way through the mulch and plantings.
Materials:

- ¾" Stone
- Soil Conservation Mulch
- Native Maine plantings

PROJECT 2012:011—Whitten, 67 Loop Rd (Loon Pond)
Existing issue: The dirt road on both sides of the driveway, as well as a large unvegetated section above their house, all spilled over its run-off into this property's driveway. During severe rain storms, enormous volumes of water would run through the driveway, carving large gullies, and continuing down the property relatively unchecked. Lots of erosion occurred and would empty right into the lake.
BMPs implemented as solution: In the large unvegetated area we laid down a thick coat of Soil Conservation Mulch to help slow down the run-off, absorb it, and stabilize the soil. We installed a very long rubber razor to divert the road run-off into a large and deep rain garden full of native Maine plantings. Further down the property we laid down more Soil Conservation Mulch to again help absorb the water and stabilize the soil.
Materials:

- Soil Conservation Mulch
- Native Maine plantings

PROJECT 2012:012—MacDonald, 8 Burlington Way (Mousam Lake)
Existing issue: One of the original camps on Mousam Lake, this property has a significant slope the entire length of the house plus another 30 yards down to the lake. Without dense vegetation throughout, the run-off was ripping down the land and severely eroding the soil. We addressed this problem on several levels.
BMPs implemented as solution: We installed an infiltration pathway down the hill where water collected and travelled with the idea of it infiltrating into the ground instead of continuing to pick up speed and erode. On the other side of the house we put in a drip line trench as well as a thick layer of Soil Conservation Mulch. Down closer to the water, we put in a vegetated buffer full of native blueberry bushes and Soil Conservation Mulch to help stabilize the sand and soil and drink up the water. There was a side deck that was on the verge of collapsing which would have led to an enormous amount of sediment dumping right into the lake so we rebuilt it to help retain it all.
Materials:

- ¾" Stone
- Soil Conservation Mulch
- Native Maine plantings
- 6"x6" timbers

PROJECT 2012:013—Kenary, 45 Totte Rd (Goose Pond)
Existing issue: This camp has recently changed owners and there was a lot of work to be done on the property, with significant bare soil exposed on a slope with no roots to stabilize it to prevent it from eroding into the lake. During rain events, water would fly down their black top driveway into their bare soil yard and empty directly into the lake.

BMPs implemented as solution: At the bottom of the driveway we installed a large infiltration trench to absorb the run-off. For those larger storms we wanted to have another check for the volume of water we anticipated so we put in a rain garden full of native Maine plantings. All along their yard we put in a large vegetated buffer with Soil Conservation Mulch and native Maine plantings. There is a set of steps that some water would travel over so we retrofitted them to be infiltration steps. Finally, we did another vegetated buffer along a walkway to their dock.
Materials:

- ¾" Stone
- Soil Conservation Mulch
- Native Maine plantings

PROJECT 2012:014—Rosenkrantz, 336 Cedar Drive (Square Pond)
Existing issue: The driveway runs downhill towards the camp and the lake. Most of the run-off was coming from the driveway and would go for a long distance before reaching any type of vegetation. The result was erosion and overburdening the vegetation to the point where it would just overpass it and run into the lake.
BMPs implemented as solution: We installed a rubber razor towards the bottom of the driveway to divert the water to an area where we had put a thick coat of Erosion Control Mulch.
Materials:

- Soil Conservation Mulch
- Rubber razor wire and timber

PROJECT 2012:015—Roderick, 80 Avenue D (Mousam Lake)
Existing issue: Run-off would enter this property from both sides of the driveway where the streets' run-off came from. From the top of the driveway, the run-off would fly downhill on a tremendous slope. Without thick vegetation of catch basins, the erosion was substantial, carving up large amounts of soil and transporting it towards the lake.
BMPs implemented as solution: To address the run-off coming from the street, we installed a mulch trench along the road to help catch the water before it ran downhill. All along the driveway where the water ran, we dug a very long infiltration trench with a plunge pool at the bottom to serve as a catch basin. Along the steep hillside, we laid down thick amounts of Erosion Control Mulch to help stabilize the soil and absorb some of the runoff.
Materials:

- ¾" Stone
- Soil Conservation Mulch

PROJECT 2012:016—Lajeunesse, 89 24th Street (Mousam Lake)
Existing issue: The run-off comes from the street bringing water at high speeds to their flat lawn. Without much vegetation or ground cover, the run-off would erode the soil and bring it towards the beach, further eroding and transporting sediment into the lake.
BMPs implemented as solution: We installed an infiltration pathway in the path of the run-off to catch the water and encourage it to percolate into the ground. Right before the beach there is a retaining wall where the water would spill over into the sand. To prevent this from continuing to happen we dug an infiltration trench before the retaining wall to help it enter the ground before reaching the beach and the lake.
Materials:

- ¾" Stone

- 2”x6” Timbers

PROJECT 2012:017—Foster, 316 East Shore Drive (Loon Pond)
Existing issue: This camp has a steep black top driveway that would allow the rainwater to travel at serious speed and erode further down their property. Although there were some areas of vegetation, there was not enough to mitigate the driveway run-off as well as the roof run-off.
BMPs implemented as solution: We installed a vegetated buffer to help absorb some of the run-off on the upper parts of their property. A large dripline trench was put in to not only take care of the roof run-off but also much of the driveway run-off. In the back (lakeside) of their house we laid down a thick layer of Soil Conservation Mulch and put in an infiltration pathway to the water to replace the eroded gullies.
Materials:

- ¾” Stone
- Soil Conservation Mulch
- Native Maine plantings

PROJECT 2012:018—Lohrman, 17 Treasure Island (Square Pond)
Existing issue: This property had erosion mainly because of the roof run-off as well as loose bare soil along a path from years of erosion.
BMPs implemented as solution: We installed a dripline trench for some of the roof run-off. For other areas, we improved upon their existing patio area by putting down a thick layer of Soil Conservation Mulch, installing native Maine plantings, and fixing their railroad ties to actually work with the land instead of hurting the land. Down along their path that circles the island, we put down a very thick coat of mulch to help build the soil back up and protect the exposed tree roots.
Materials:

- ¾” Stone
- Soil Conservation Mulch
- Native Maine plantings

PROJECT 2012:019—McNamara, 15 Treasure Island (Square Pond)
Existing issue: Similar to their neighbor on project 2012: 018, this camp had minor erosion that had occurred over many years, mainly from their roof run-off.
BMPs implemented as solution: We began with a dripline trench for part of the roof’s run-off. We put in an infiltration pathway where the run-off regularly travelled to help to percolate into the ground. Finally, we planted native Maine plantings and laid down a lot of Soil Conservation Mulch to help absorb the run-off and build the soil back up to protect the exposed roots of the large pine trees.
Materials:

- ¾” Stone
- Soil Conservation Mulch
- Native Maine plantings

PROJECT 2012:020—Daigle, 39 Treasure Island (Square Pond)
Existing issue: This relatively flat property had some run-off that was due to the roof-run and not having an existing area to help it absorb into the ground. Minor erosion was occurring due to this, eventually making its way into the lake.
BMPs implemented as solution: The house is shaped as an octagon, so we installed dripline trenches on five of the sides to help mitigate most of the run-off. Many yards or Soil Conservation Mulch was laid down around the shoreline to act as a buffer.
Materials:

- ¾" Stone
- Soil Conservation Mulch

PROJECT 2012:021—Gillette, 126 East Shore Drive (Loon Pond)
Existing issue: This camp had very minor amounts of run-off travelling down the yard without a good medium to get absorbed.
BMPs implemented as solution: We planted several native Maine bushes to help absorb the water and establish root systems.
Materials:

- Native Maine plantings

PROJECT 2012:022—Leland, 13 Crooks Neck (Mousam Lake)
Existing issue: This property sat at the end of a long dirt driveway that not only received a lot of run-off from the road above but also produced enormous amounts of run-off, and therefore erosion, as it travelled towards the camp. The run-off had no checks for about 100 yards. The erosion carved up his yard, brought in tons of sand into his basement, and ran down his path to his beach to only further erode. The owner described his beach as the Grand Canyon following a rain storm.
BMPs implemented as solution: The first step was to install two rubber razors along the driveway to divert the run-off into vegetated depressions. This took care of a lot of the problem. Next, we put in a large rain garden full of native Maine plantings to catch a lot of the remaining runoff from above and absorb it into the plants and ground. A vegetated buffer was put in along their rock wall that abutted the beach. We moved their entrance to the beach several yards over so they could access their beach in an area to which the water did not naturally gravitate. We also installed two dripline trenches to account for the roof run-off.
Materials:

- ¾" Stone
- Soil Conservation Mulch
- Native Maine plantings

PROJECT 2012:023—Poor, 36 Covewood Drive (Mousam Lake)
Existing issue: This property lays relatively flat but has a large roof and little vegetation so the water did not have many mediums to get absorbed into the ground.
BMPs implemented as solution: We spread about 16 yards of Soil Conservation Mulch around the property to help absorb the run-off. We installed dripline trenches where the gutters had failed, and put in plunge pools where the gutters still worked. A long vegetated buffer was put in along the side of the property where water collected and travelled onto their beach, carving gullies through it. Along the beach's border, we put in infiltration trenches to absorb the water before it could erode the beach.

Materials:

- ¾"Stone
- Soil Conservation Mulch
- Native Maine plantings

PROJECT 2012:024—Filliger, 49 14th Street (Mousam Lake)
Existing issue: This property had just recently been bought and needed a lot of work done on it. There was bare soil and it allowed the run-off to travel downhill eroding their property.
BMPs implemented as solution: We retrofitted their staircase by making them infiltration steps to encourage the run-off to percolate into the ground. Along their back patio, we leveled it out and top dressed it with Soil Conservation Mulch to help absorb the water.
Materials:

- ¾" Stone
- Soil Conservation Mulch

PROJECT 2012:025—Haake, 39 Avenue B (Mousam Lake)
Existing issue: This camp had some roof run-off that would travel down their hill and into the lake. The staircase which has been around for a few decades in on the verge of crumbling due to the erosion's destructive properties. Large amounts of sediment have been transported into the lake form the run-off.
BMPs implemented as solution: We began by putting in a plunge pool at the bottom of their gutter outspout. Their back patio had no way of slowing the water down so we put down a layer of Soil Conservation Mulch and improved their broken retaining wall by deconstructing it and planting a variety of native Maine plantings. Further down the hill we put in more mulch to help stabilize the soil.
Materials:

- ¾" Stone
- Soil Conservation Mulch
- Native Maine plantings

PROJECT 2012:026—McDonough, 61 Treasure Island (Square Pond)
Existing issue: This island camp had some erosion from the roof and yard run-off. There was little vegetation or plant matter to absorb the water or separate the large volumes.
BMPs implemented as solution: We put in a dripline trench to take care of a big portion of the run-off. Further down the property we spread a lot of Soil Conservation Mulch and planted several native Maine plantings to help stabilize the soil and absorb the run-off to prevent the sediment from eroding and entering the lake.
Materials:

- ¾" Stone
- Soil Conservation Mulch
- Native Maine planting

V. ASYCC Courtesy Boat Inspection Program

CBI Program Overview

The goal of the ASYCC Courtesy Boat Inspection Program (CBI) is to prevent the introduction of invasive aquatic plants from entering the local watershed. While obvious emphasis is on invasive aquatic plants, we also put our resources toward preventing all plants and marine animals from being introduced to the Mousam Lake watershed.

Invasive aquatic plants threaten the ecology of the freshwater lakes and rivers, the regional economy, and wildlife populations in the area. The ASYCC CBI program works with boat owners to inspect boats and trailers for transported plant fragments as well as providing boat owners with knowledge about invasive aquatic plants. Boat inspections and public education are the best ways to protect Mousam Lake, Square Pond, Loon Pond, and Goose Pond from the attack of invasive aquatic plants. Once an invasive aquatic plant enters a waterway it is very costly and often unsuccessfully treated or removed. The result of an invasive aquatic plant inhabiting a water body is several-fold: drastic decreases in nearby property values, degraded water quality, decrease in marine life biodiversity, and restricted recreational opportunities. Both ecologically and economically, it often leads to devastating destruction. 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 infesting the Mousam Lake watershed.

CBIs 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 state 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 2012, coverage on Square Pond reached an all time high. Coverage began at the boat ramp on May 27th. This was the start of our pre-season, running until June 15th. From there the regular season began which ran until Labor Day, September 3rd. Coverage on the boat ramp was Monday through Thursday for four hours each morning, and 12 hours per day Friday through Sunday. After Labor Day we began our Post-Season, with hours again decreasing to just one Friday afternoon shift and nine hours per day of coverage during the weekend. This ran until October 14th. A total of 564 boats were inspected at Square Pond during the 2012 CBI Season.

Similar to 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 2012, CBI coverage for the pre-season began earlier than ever, with bass tournaments in late April getting covered. Pre-season ran until June 15th where coverage was 12 hours per day Friday through Sunday. The regular season extended coverage to 14 hours per day every day for a total of 98 hours per week. During the post-season, September 4 through October 14, Mousam Lake CBI coverage reduced a Monday morning shift and to Friday through Sunday for 14 hours per day, 46 hours per week. A total 4,939 boats were inspected at Mousam during the 2012 CBI Season.

Below are tables representing the change in CBI coverage on both Mousam Lake and Square Pond since 2008. Included in this is the number of boats inspected, which also has an increasing trend.

Plant Fragments Collected

This year's CBIs collected an impressive 264 plant fragments off of boats entering and exiting the boat ramps of Mousam Lake and Square Pond. One of the samples was identified an invasive Water Chestnut. In 2011, there were 58 plant fragments collected. with two of them being invasive aquatic milfoil plant candidates. We were unable to be confirm these two fragments as invasive because the plants had dried out past a point of identification.

The drastic increase of plant fragments collected off the boats and trailers is suggested to be a result of two reasons. We believe the biggest reason is due to the early thaw that occurred in early Spring this year. It is believed to have taken place about one month earlier than usual leading to an earlier than normal jump in plant growth. With warmer than normal temperatures prevalent in April and May and a hot summer, the plants grew to unusual length and to unusual numbers. With more plant matter in the lakes all over New England, more of it was getting caught in the props of engines, in the nooks and crannies of trailers, and wherever plants get caught.

The second reason we believe led to such an increase in plant fragments collected is how we trained our CBIs. In past years, we were not as adamant about bagging every piece of plant a CBI could find, but rather just those that look like real plants. Many of the samples in 2012 were forms of pond weed or just blades of grass. We can assume that in past years these samples may have been discarded as not worth collecting and therefore the final number of plant fragments collected was low. This year, however, we were very insistent that all plant matter be collected with the reasoning that we want experts to be the ones to verify if it is invasive or not instead of CBIs who may only look at it for a quick minute because they are busy inspecting other boats. Also, we wanted detailed records of exactly what was both coming in and out of the lakes. If we intercepted a fragment going in then we know what other lakes or bodies of water may have. In the case of an invasive we can notify the host lake to help detect it as early as possible. If we intercept a fragment on the way out of our lake it tells us what is in our watershed.

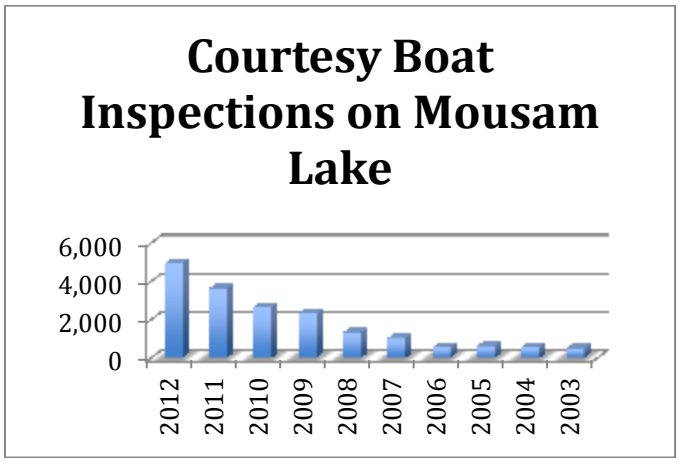
On July 14, 2012, one of our CBIs intercepted a Water Chestnut plant fragment at Mousam Lake's boat launch. It generated significant press from several surrounding newspapers, including a copy of the article from Fosters which is in the Appendix, lake association newsletters, and state organizations such as the Lakes Environmental Association. The CBI who found the seed pods of the Water Chestnut described the fragment to be underneath the boat near the bow where the boat sits on the trailer pads. The find was a tremendous accomplishment for not only the ASYCC, but a major success story for the towns of Acton and Shapleigh. If the plant were to have snuck into Mousam Lake it could have had devastating effects on the biology of the lake as well as the town's economy.

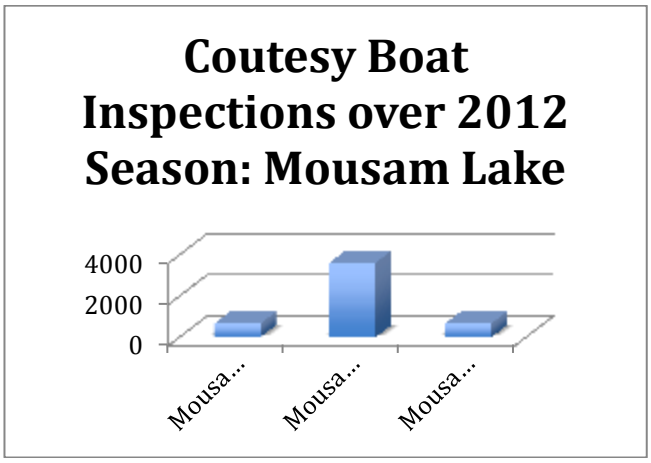
Mousam Lake CBI Data

Mousam Lake-Per day coverage over last five years

	2012	2011	2010	2009	2008
Pre-season	*Fri-Sun: 12	Fri-Sun: 12	Fri-Sun: 12	Mon-Thur: 12 Fri-Sun:14	NA
Reg. Season	Mon-Sun: 14	Mon-Sun: 14	Mon-Sun: 14	Mon-Thur: 12 Fri-Sun:14	-Mon-Thur: 8 -Fri-Sun: 12
Post-Season	Mon: 4 Fri-Sun: 12	Fri-Sun: 12	Fri-Sun: 12	Mon-Thur: 12 Fri-Sun:14	NA
Boats Inspected	4,939**	3,638	2,663	2,145	1,158
Plant Fragments Collected	234	34	0***	14	7

*In 2012, the pre-season began over a month earlier than in 2011 due to awareness over bass fishing tournaments, great weather on weekends, and a some extra money due to a successful golf tournament in 2011.
**Not accounted for is the amount of boats inspected after this report was submitted due to a late season Bass fishing tournament in which we had a CBI on duty to inspect all boats and trailers on entry and exit.
***Due to an error in record keeping.

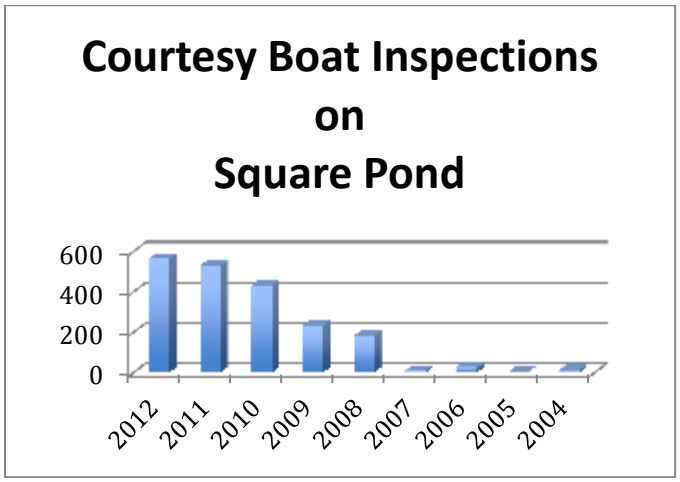


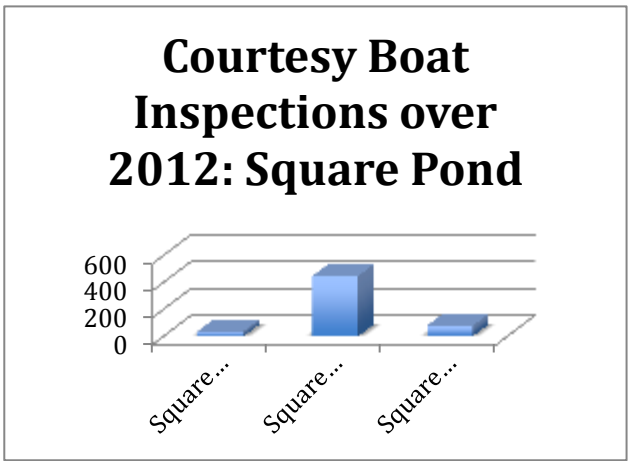


Square Pond CBI Data

Square Pond-Per day coverage over last five years

	2012	2011	2010	2009	2008
Pre-season	Sat-Sun: 10	Fri-Sun: 6	Fri-Sun: 4	Fri-Sun: 7	NA
Reg. Season	Mon-Thurs: 4 Fri-Sun: 12	Mon-Thurs: 5 Fri-Sun: 12	Mon-Thur: 6 Fri-Sun: 12	Fri-Sun: 7	Sat-Sun: 6
Post-Season	Fri: 4 Sat-Sun: 9	Fri-Sun: 6	Fri-Sun: 4	Fri-Sun: 7	NA
Boats Inspected	564	531	432	221	173
Plant Fragments Collected	30	24	3	3	1





VI. Appendix

ASYCC Yearly Statistics

		2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Erosion Control Demonstration Projects		26	27	24	16	20	18	26	18	17	17	15	20
By Town	Acton	14	11	7	2	6	8	16	11	9	4	7	10
	Shapleigh	12	16	17	14	14	10	10	7	8	13	8	10
By Lake	Mousam Lake	13	14	7	9	10	7	10	10	12	12	9	12
	Square Pond	8	11	15	6	6	7	3	1	2	2	1	3
	Goose Pond	1	0	0	1	1	2	2	4	1	0	1	1
	Loon Pond	4	2	2	0	3	2	11	4	1	1	3	2
	Other	0	0	0	0	0	0	0	2	1	0	1	1
Technical Visits		44	43	34	33	32	48	65	17	31	30	35	60
Courtesy Boat Inspections	Total	5,503	4169	3095	2549	1421	1051	580	617	585	506		
# of Inspections per Lake	Mousam Lake	4,939	3638	2663	2316	1329	1042	553	616	573	506		
	Square Pond	564	531	432	233	182	9	27	1	12			
Plant Fragments Collected	Mousam Lake	233	34	0	14	7	33	5	8	7	0		
	Square Pond	30	24	3	3	1	0	1	0	1			
	Loon Pond			1									

News Article from Fosters:

Invasive plant stopped feet from Mousam Lake

Thursday, July 19, 2012
SHAPLEIGH — Last Saturday, Gail Boisvert, a courtesy boat inspector at the boat launch on Mousam Lake, intercepted an invasive plant fragment known as water chestnut stuck between a boat and its trailer.

Photo from google images. Water chestnut, an invasive aquatic plant, was discovered on a boat trailer last Saturday by a courtesy boat inspector at Mousam Lake.

The invasive plant was nearly transported into the lake, just as many invasive plants have been introduced to hundreds of other lakes in New England.

Boisvert said the plant fragment was wedged under the carpeted area of the trailer that supports the boat sides. She said she saw a blob that looked like grease, but upon feeling it noticed it had hard spines. As she removed it, Boisvert said she discovered two more fragments.

Boisvert's find prevented an invasive plant from rapidly spreading, costing the lake its good health and recreational value, while potentially saving the town and state tens of thousands of dollars each year.

With thousands of visitors entering the lake every summer, it is essential to inspect boats and trailers to make sure invasive species are not entering the lake. Last year alone, there were 58 plant fragments taken off visitors' boats and trailers at Mousam, two of which were milfoil species. So far this year, 52 plant fragments have been intercepted by boat inspectors. The water chestnut is the only invasive plant discovered so far this season.

The boat inspection program is part of the Acton Shapleigh Youth Conservation Corps (ASYCC), a nonprofit organization based in Shapleigh and Acton. The goal of the program is to inspect every boat that enters and exits the Mousam Lake and Square Pond boat ramps to keep out invasive aquatic plant and animal species.

The ASYCC also manages a second program — the Erosion Control Crew (ECC), which completes nearly 30 projects a summer on residential lakefront properties to help prevent runoff and erosion pollution from entering the lakes.

The ASYCC was founded in 2001 in response to Mousam Lake's remediation efforts. In the early 1990s, the EPA put Mousam Lake on the 'Lake at risk' list. Since then, the region has put over $1 million into protecting the lake and as a result, Mousam Lake was removed from that list in 2007, the first lake to accomplish that feat in over 20 years.

The towns of Shapleigh and Acton together allocate $44,000 annually to fund Youth Conservation Corps programs, the majority of which is directed to courtesy boat inspections. As a result the Mousam Lake and Square Pond state boat ramps are monitored 14 hours a day from late June until Labor Day, and long-weekend coverage from early May through Columbus Day.

Invasive species are generally from regions far away and therefore have no natural predators to keep them in check when they are introduced to a new environment. With no natural predators they can rapidly reproduce and choke out the natural species of the waterbody. This causes the native plants, fish, and insects to die and has devastating effects on the waterbody's biology, as well as the region's economy.

When a lake goes belly up, property values drop and the local economy takes a major hit. The recreation of the lake diminishes to the point where swimming, boating and fishing may come to a halt. Remediation for the water chestnut can cost at least $30,000 to $50,000 a year — and there are no guarantees it will be eradicated.

Water chestnut is known as one of the worst invasive plants and is suspected to have come from the Charles River in Massachusetts where the boater went just two years ago. Maine has a watch list of 11 invasive plants that are believed to be major threats to the state's waterbodies.

Maine's Department of Environmental Protection has identified 23 water bodies in southern Maine that have invasive plants, while nearby New Hampshire has 78 infested water bodies. Within only 30 minutes of Mousam Lake, three lakes have been invaded by these plants: Lake Arrowhead in Waterboro has milfoil, Pickerel Pond in Limerick has hydrilla, and West Pond in Parsonsfield has curly leaf pond weed.

Plant fragments can be hiding in the tiniest and darkest of places so it is important to be very thorough when inspecting boats and trailers. Courtesy boat inspection programs are critical in preventing invasives from entering Maine lakes and ponds.

The ASYCC is committed to protecting the waterbodies 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. In addition to the funding provided by the two towns the organization also receives contributions from the state, the Mousam Lake and Square Pond lake associations and an annual golf tournament.

Organizations like the ASYCC help keep Maine's bodies of waters invasive free for the enjoyment of everyone.