Acton-Shapleigh Youth Conservation Corps

2013 Annual Program Report

Protecting the waters where we live, work, and play

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I. Letter from the ASYCC President

Acton-Shapleigh Youth Conservation Corps
PO Box 47, Springvale ME 04038
www.asycc.com

The ASYCC has just completed its 13th year as a community based non-profit organization created to protect our lakes and water quality in the Mousam Lake-Square Pond Watershed through the application of effective erosion control measures, technical assistance, public outreach, education, and courtesy boat inspections. The ASYCC works closely with town code enforcement officers, town officials, the York County Soil & Water District, local lake associations, and the Maine Department of Environmental Protection. We are proud to staff our program with youths and adults with direct ties to the towns we serve.

During 2013, the Erosion Control Crew (ECC) worked extremely hard to complete a record 30 erosion control projects. Since 2001, the Erosion Control Crew has completed 274 erosion control projects within the Mousam Lake-Square Pond Watershed. The demand for the Erosion Control Crew continues to remain constant; with fewer than 27 percent of the property owners within the watershed having used the services of the ECC, there is still more work to be done. Education continues to be a major focus of our program. During the 2013 season the ASYCC conducted 35 technical visits to property owners, a total of 507 since 2001 and the demand continues to rise.

The ASYCC expects that the demand for technical visits and erosion control projects will continue to increase in the coming years. We expect this to be driven in part by; the enthusiasm from the Square Pond Improvement and Treasure Island Land Owners Associations, the continued support from the Mousam Lake Regional Association and the renewed awareness by Loon Pond property owners. The labors of the ASYCC have brought positive results to landowner battles against erosion on lake front properties and, given the property turnover, development and natural erosion taking place, our partnership with the watershed will surely continue to be needed.

The second program under the AYSCC umbrella is the Courtesy Boat Inspection Program (CBI). The CBI program works to prevent the introduction of invasive aquatic plants from entering the Mousam Lake-Square Pond Watershed. During the 2013 CBI season, 5,336 boats were inspected, almost matching last year's record in spite of the wet spring. A total of 367 collection bags were tagged and submitted by our inspectors in 2013. This represented 1,260 different plant fragments in 2013. The state of Maine is still examining two fragments at this time, which they are currently calling suspect. This indicates a high probability that they are invasive milfoil.

As the number of boaters visiting the clean waters of the Mousam Lake-Square Pond Watershed continues to increase, so do the chances of an invasive plant or organism being entered into our important waters. With the constant and consistent presences of the CBIs on the Mousam Lake and Square Pond Boat Launches, the public continues to be favorable and better educated about the risks of these invasive and their potential hazards to our beautiful waterways. The ASYCC CBI program is an important line of defense for our lakes.

Beth Ann Brown
ASYCC President

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 Mousam Lake, Square Pond, Goose Pond, and Loon Pond collectively known as the Mousam Lake-Square Pond Watershed. 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.

The ASYCC is grateful to the Towns of Acton and Shapleigh, the Mousam Lake Region Association and the Square Pond Improvement Association for their ongoing financial support. In addition, funding is raised through the annual ASYCC Golf Tournament; grant opportunities through the State and private donations. Using this local support, the ASYCC is able to hire local residents who have a vested interest in protecting the local waterways. Between the Courtesy Boat Inspection (CBI) Program and Erosion Control Crew (ECC) Program, the ASYCC hires over 20 local employees.

The ASYCC provides two important resources to help protect the Mousam Lake – Square Pond Watershed. The ECC program provides education and protection of private and public lands from erosion, loss of shoreline, and invasive land plant remediation. Additionally, the ECC Technical Director and the ECC Leaders work closely with landowners providing education regarding maintenance of property after the ECC has completed the project on the property. The second ASYCC program is the CBI program that works to protect the Mousam Lake – Square Pond Watershed from invasive aquatic plants and organisms by inspecting boats going in to and coming out of our local waters. Invasive species threaten New England water bodies more and more every year; the CBI program was designed to prevent the transportation of any aquatic species.

The ASYCC emphasizes education outreach and community involvement as one of the most important purposes of the program, helping boaters and landowner understand how vital it is to protect the Mousam Lake – Square Pond Watershed.

Each year the ASYCC strives to improve the program by educating the community about the adverse affects occurring on the local waterbodies, increasing the number of boat inspections, and increasing the quality of erosion control projects. The ASYCC provides a lot of information through their programs and www.asycc.com.

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 for 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.

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.[1]

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

[1] 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.

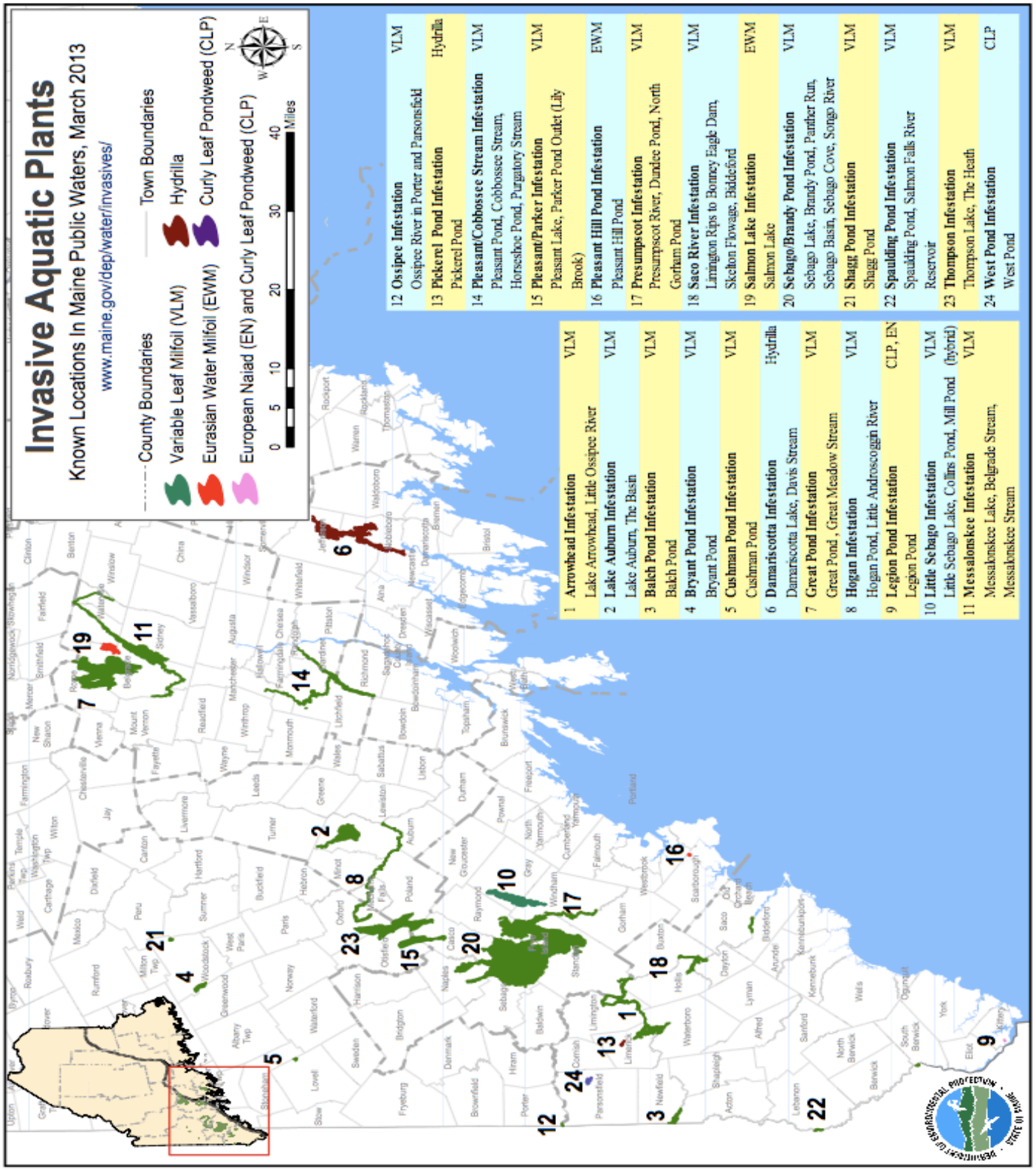
The results of erosion from waterfront properties such as those found in the watershed boundaries of the ASYCC can be on several levels. It affects the biology of lakes by introducing excessive nutrient loading which leads to algal blooms, lower dissolved oxygen leading to the loss of native marine life, 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 and remains consistent in 2013: 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 2013, there are 24 water systems in Maine that have one of these invasive plants. Nearby New Hampshire is up to 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.



Maine Department of Environmental Protection, Water. Viewed on November 2, 2013. http://www.maine.gov/dep/water/invasives/

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

- Norris Johnson (Shapleigh, Square Pond), Technical Director
- Zach Lemelin (Shapleigh, Square Pond), CBI Leader

Erosion Control Crew Leaders:

- Morgan Johnson (Shapleigh, Square Pond)
- Keegan Simons (Acton, Square Pond)

Erosion Control Crew:

- Ronnie Cartwright (Acton)
- Melissa Carmichael (Shapleigh)
- Samuel Beaudoin (Acton)
- Robert Cabana (Acton)
- Noah Miller (Acton)
- Jacob Lelievre (Acton)

Courtesy Boat Inspectors:

- Colin Boisvert (Acton)
- Natalie Dionne (Acton)
- Donald Lelievre (Acton)
- Gail Boisvert (Acton)
- Jacquelyn Archambault (Acton)
- Kady Lemelin (Shapleigh)
- Sarah Stanley (Springvale)
- Sue Mrazik (Acton)
- John Coleman (Acton)
- Zach Lemelin (Shapleigh)
- Melissa Carmichael (Shapleigh)
- Paige Tranchemontagne (Acton)
- Emily Archambault (Acton)

Acton-Shapleigh Youth Conservation Corps Board of Directors

- Beth Brown (Acton, Square Pond), President
- Norm Lambert, (Acton, Mousam Lake), Vice President
- Bill Sherman (Shapleigh, Mousam Lake), Treasurer
- Jane Thomas (Acton, Square Pond), Secretary
- Nancy Deans (Acton, Square Pond)
- Peter Beck (Acton, Mousam Lake)
- Bruce Lamb (Shapleigh, Mousam Lake)
- Plant and Aquatic Specialist Marsha Letourneau (Shapleigh, Square Pond)

Overview of ASYCC Hired Positions

Program Director: The Program Director oversees the entire ASYCC program. This position is charged with program implementation, promotions, and providing direction to the ECC Technical Director and the CBI Leader. The Program Director is a year round, part time position. During the course of the year the Program Director writes grant, creates newsletters and press releases, keeps the website current, hires staff for all ASYCC program, provides technical assistance, conducts training for the ECC and CBI programs, ensures that the final report is complete and provided to the supporting communities, works as a lesion between the ASYCC programs and the ASYCC Board of Directors, in addition to many other important operation functions of the program. This position is part time, with hours dependent on the workload and deadlines, paying $19.00 per hour.

Technical Director: The Technical Director is a full time, seasonal position responsible for running the Erosion Control Crew. 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. The Technical Director is the liaison between the ECC members/program and the Technical Director. 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 crewmember's abilities, and to have fun while doing it, all in that order. Safety is always job number one on an ASYCC job site. In 2013, the ECC program had two ECC Leaders to allow for increased project productivity. 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. During the 2013 the ECC program operated two crews that worked in concert to complete projects. This position is a 30 hour per week, Monday through Friday, position paying between $9.00-$10.00 an hour, depending upon how long the ECC member has been with the program.

Courtesy Boat Inspector Leader: Duties for the CBI program include scheduling and overseeing the program, tracking the number of inspected boats, and training. This position is a liaison between the CBI members/program and the Program Director. This position is 5 hours per week, paying $11.00 per hour.

Courtesy Boat Inspector Member: The CBI's 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 and 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. On average CBI members work between 15 to 20 hours each week during the regular season and 5-7 hours during the pre- and post-season. The CBI Seasons: Pre-season runs from May through June; Regular season runs from the last week in June through Labor Day; Post-season runs from Labor Day through Columbus Day Weekend. 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. The ECC was established in 2001 to implement erosion control projects on properties that had extensive erosion within the Mousam Lake-Square Pond Watershed. The ECC program is responsible for educating 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-Square Pond Watershed every summer.

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) is 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.

Since 2008 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.

New in 2013:

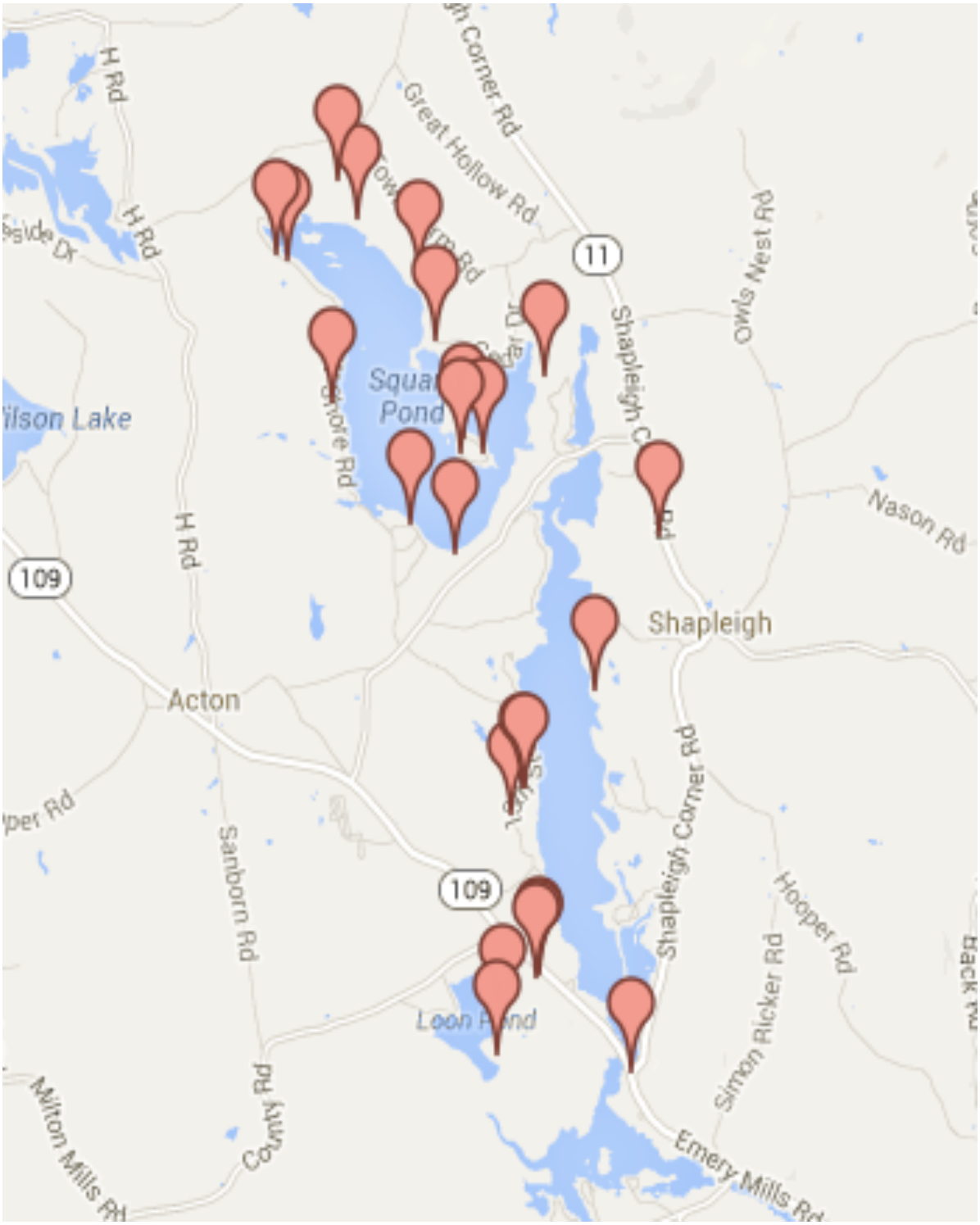
In 2013, the ASYCC hired two ECC Leaders, five ECC Members, and two ECC Member Alternates. Through the use of two crews the ECC was able to create a continuous flow of projects. The crew would start a project as a whole, as the project neared completion, one-crew leader would take half of the crew to a new project. Once the first project was complete that crew would meet up with the crew who started a new project. This worked extremely well during for this season. With only one returning ECC Member there was a lot to learn for all members of the ECC and ASYCC.

Through coordination of the Technical Director and two ECC Leaders the ECC had a record-breaking year, completing 30 projects. Each year the ECC has been able to increase the number of projects completed. Although the ECC has completed 274 since 2001, there is still a lot of work to be done.

Photo 2013: Erosion Control Crew

Map of 2013 Completed ECC Projects

Red pins indicate locations of all 2013 Erosion Control Crew Project.



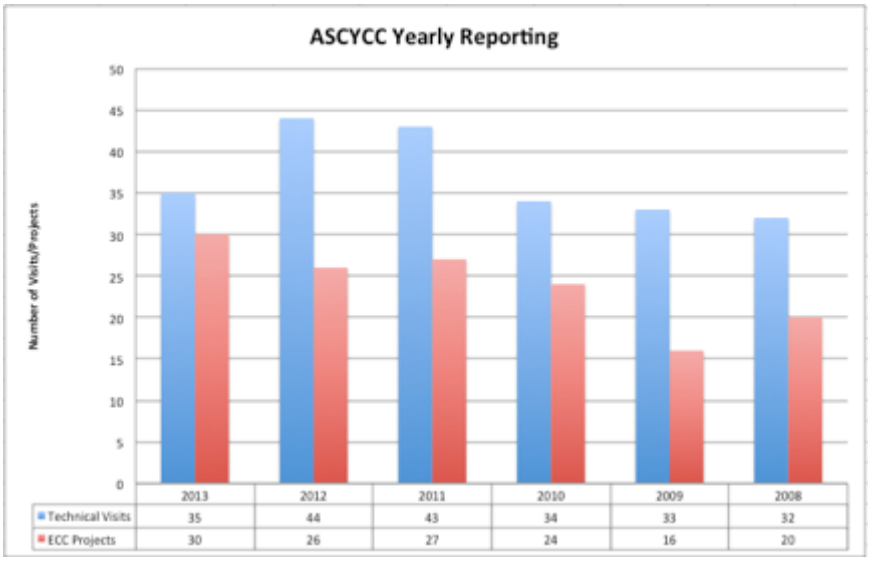
Erosion Control Crew Statistics

Total Number of Technical Visits
35: Technical Visits in 2013
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
28: Technical Reports created in 2013
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
30: Projects Completed in 2013
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, 2013
-Mousam Lake: 7
-Square Pond: 15
-Goose Pond: 0
-Loon Pond: 3
-Treasure Island: 5

Project Breakdown, 2012
-Mousam Lake: 13
-Square Pond: 8
-Goose Pond: 1
-Loon Pond: 4

Project Breakdown, 2011
-Mousam Lake, Shapleigh: 14
-Square Pond, Shapleigh: 11
-Goose Pond: 0
-Loon Pond: 2

Project Breakdown, 2010
-Mousam Lake: 7
-Square Pond: 15
-Goose Pond: 0
-Loon Pond: 2

Project Breakdown, 2009
-Mousam Lake: 9
-Square Pond: 6
-Goose Pond: 1
-Loon Pond: 0

Project Breakdown, 2008
-Mousam Lake: 10
-Square Pond: 6
-Goose Pond: 1
-Loon Pond: 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

Erosion Control Crew 2013 Projects

The following few pages provide a brief description of the ECC projects completed in 2013. A photo analysis for a majority of the ECC projects is located in the appendix of this document.

1. **Mousam Public Beach (Mousam, Acton)**
   Owner Last Name: Mousam Public Beach
   Property Address: The foot of Mousam
   Waterbody: Mousam
   Existing Issue: Yearly Maintenance needed
   BMPs: Retrofitting Stairs, Riprap, mulch, plantings, retrofitting water bars
   Materials used: Riprap, mulch, plantings, timbers

2. **Square Pond town Beach (Square, Shapleigh)**
   Owner Last Name: Square Pond town Beach
   Property Address: N/A
   Waterbody: Square
   Existing Issue: Yearly Maintenance and Upkeep
   BMPs: Retrofitting steps, planting, mulching, french drain, weeding
   Materials used: plantings, mulch

3. **13th Street Culverts (3) (Mousam, Acton)**
   Owner Last Name: 13th Street Culverts (3)
   Property Address: Throughout 13th Street
   Waterbody: Mousam
   Existing Issue: Yearly Maintenance and Upkeep
   BMPs: Taking out old rip rap, cleaning out culvert and replacing existing rocks
   Materials used: N/A

4. **David Freeman 135 Treasure Island (Square, Shapleigh)**
   Owner Last Name: Freeman
   Property Address: 135 Treasure Island
   Waterbody: Square
   Existing Issue: Roofline runoff and runoff from the center of the island was eroding his beach.
   BMPs: Mulching and dripline trench, Planting
   Materials used: Mulch and Crushed Stone

5. **Karen McPherson 165 Thrush Road (Square, Acton)**
   Owner Last Name: McPherson
   Property Address: 165 Thrush Road (Acton)
   Waterbody: Square
   Existing Issue: A hill behind the house is creating runoff throughout their steep property.
   BMPs: Infiltration Trenches, Mulching, Planting
   Materials used: Plants, Crushed Stone, Mulch

6. **Bob Smith 145 Treasure Island (Square, Shapleigh)**
   Owner Last Name: Smith
   Property Address: 145 Treasure Island
   Waterbody: Square
   Existing Issue: Roof runoff was eroding the beach
   BMPs: Retrofitting Steps, Mulching, Planting
   Materials used: Timbers, crushed stone, Nails, Rebar, Mulch

7. **Reeny Johnston 200 East Shore Drive (Loon, Acton)**
   Owner Last Name: Johnston
   Property Address: 200 East Shore Drive
   Waterbody: Loon Pond
   Existing Issue: Erosion of central large pine tree roots
   BMPs: Mulching, Waterbars, Infiltration Pathway
   Materials used: mulch, crushed stone, timbers

8. **Joan Pokrant 742 West Shore Drive (Square, Acton)**
   Owner Last Name: Joan Pokrant
   Property Address: 742 West Shore Drive
   Waterbody: Square
   Existing Issue: Steep Driveway encouraged runoff towards the lake.
   BMPs: Waterbars, Infiltration Step, Mulching, Plantings, French Drains
   Materials used: Timbers, Crushed Stone, Mulch, Plants, Filter Fabric

9. **Nancy Small 128 Apple Road (Square, Shapleigh)**
   Owner Last Name: Nancy Small
   Property Address: 128 Apple Road
   Waterbody: Square
   Existing Issue: Runoff from road and driveway towards lake washing away property.
   BMPs: Infiltration steps, Infiltration trenches, Waterbars, Mulching, Plantings
   Materials used: Timbers, Crushed Stone, Filter Fabric, Mulch, Plantings

10. **David Wells 16 Treasure Island (Square, Shapleigh)**
    Owner Last Name: David Wells
    Property Address: 16 Treasure Island
    Waterbody: Square
    Existing Issue: Metal roof over the house made the speed of the water begin to erode the property.
    BMPs: Infiltration Path, Mulching, Planting, and Dripline Trench
    Materials used: Crushed Stone, Mulch, Filter Fabric

11. **Virginia Avery 2 Richard Road (Loon, Acton)**
    Owner Last Name: Avery
    Property Address: 2 Richard Road
    Waterbody: Loon Pond
    Existing Issue: Runoff from roofline as well as the slope behind the house eroded property.
    BMPs: Infiltration Pathways, mulching, culvert, Plantings
    Materials used: Crushed Stone, Mulch, Plantings, Filter Fabric, and Timbers

12. **Jim McGuinness 31 Stern Way (Mousam, Shapleigh)**
    Owner Last Name: McGuinness
    Property Address: 31 Stern Way
    Waterbody: Mousam
    Existing Issue: Vertical dirt driveway washed away with ruts went right into the lake.
    BMPs: Infiltration trench, Pathway, mulching and plantings
    Materials used: Crushed Stone, Filter Fabric Plantings, Mulch

13. **Nathan Sevigny 66 Treasure Island (Square, Shapleigh)**
    Owner Last Name: Sivegny
    Property Address: 66 Treasure Island
    Waterbody: Square
    Existing Issue: Recent plumbing construction was left unattended and prone to runoff
    BMPs: Infiltration Pathway, Mulching
    Materials used: Crushed Stone, Filter Fabric, Erosion Control Mulch

14. **Michael Doyle 104 Dogwood Drive (Square, Shapleigh)**
    Owner Last Name: Doyle
    Property Address: 104 Dogwood Drive
    Waterbody: Square Pond
    Existing Issue: Dirt road washing away towards the lake.
    BMPs: Rubber Razors
    Materials used: Rubber razor wire, nails, timbers

15. **Barbara Tewksberry 136 Covewood Drive (Mousam, Acton)**
    Owner Last Name: Tewksberry
    Property Address: 136 Covewood Drive
    Waterbody: Mousam Lake
    Existing Issue: Recent drop back of house left soil open and prone to erosion into the lake.
    BMPs: Infiltration Pathways, mulching, Dripline Trench, Plantings
    Materials used: Crushed Stone, Mulch, Filter Fabric, and Plants

16. **Nancy Cahalane 771 13th Street (Mousam, Acton)**
    Owner Last Name: Cahalane
    Property Address: 771 13th Street
    Waterbody: Mousam
    Existing Issue: Runoff from roofline and Driveway eroding steps and walkway to the water
    BMPs: Infiltration Pathway, Retrofitting Steps
    Materials used: Crushed Stone, Filter Fabric

17. **Janice Roberge 306 Indian Village Road (Square, Shapleigh)**
    Owner Last Name: Roberge
    Property Address: 306 Indian Village Road
    Waterbody: Square
    Existing Issue: Runoff from dirt driveway dug huge ruts in driveway making its way to the lake.
    BMPs: Rubber Razor Wire
    Materials used: Rubber Razor, Timbers, Nails, Crushed Stone

18. **Bill Marshall 10 Wooded Way (Mousam, Shapleigh)**
    Owner Last Name: Marshall
    Property Address: 10 Wooded Way
    Waterbody: Mousam
    Existing Issue: Runoff from steep dirt driveway eroded property with nowhere to go but the lake.
    BMPs: Infiltration Pathway, Plantings, Mulch, Waterbars
    Materials used: Crushed Stone, Filter Fabric, Plants, Rebar, Nails, Timbers

19. **Patty Baxter 24 West View Drive (Mousam, Shapleigh)**
    Owner Last Name: Baxter
    Property Address: 24 West View Drive
    Waterbody: Mousam
    Existing Issue: Steep embankments were being eroded from weathering.
    BMPs: Riprap stabilization
    Materials used: Filter Fabric, Riprap

20. **Rebecca Rooney 566 East Shore Drive (Loon, Acton)**
    Owner Last Name: Rooney
    Property Address: 566 East Shore Drive
    Waterbody: Loon
    Existing Issue: Runoff from repaving of road eroded property with a large ditch.
    BMPs: Mulching, Planting, Dripline Trench
    Materials used: Mulch, Plants, Crushed Stone, Filter Fabric

21. Joel and Jan Tessier 1268 West Shore Drive (Square, Acton)
Owner Last Name: Tessier
Property Address: 1268 West Shore Drive
Waterbody: Shapleigh
Existing Issue: Vertical driveway allowed water at high speeds to erode property.
BMPs: Mulching, Planting, Dripline Trench
Materials used: Mulch, crushed stone, filter fabric, plants

22. Ray Chartrain 117 21st Street (Mousam, Shapleigh)
Owner Last Name: Chartrain
Property Address: 117 21st Street
Waterbody: Mousam
Existing Issue: Runoff from steep driveway eroded bare area.
BMPs: Mulching, planting, rubber razors, dripline trench
Materials used: Mulch, Plants, rubber razor, timbers, crushed stone, nails

23. John and Christine Beaudoin 47 Spruce Road (Square, Acton)
Owner Last Name: Beaudoin
Property Address: 47 Spruce Road
Waterbody: Square Pond
Existing Issue: Recently built house left lots of areas of erosion to attend.
BMPs: Mulching, planting, rubber razor
Materials used: Mulch, plants, rubber razor, nails, erosion control mulch

24. Sue Mrazik 1080 West Shore Drive (Square, Acton)
Owner Last Name: Mrazik
Property Address: 1080 West Shore Drive
Waterbody: Square
Existing Issue: Neighbors unkept property runoff ran into their property causing ruts.
BMPs: Waterbars
Materials used: Timbers, Rebar

25. Rebecca Rooney (566 East Shore Drive (Loon, Acton)
Owner Last Name: Rooney
Property Address: 566 East Shore Drive
Waterbody: Loon Pond
Existing Issue: Phase 2 of project
BMPs: Mulching, Planting, Infiltration Trenches, Water bars
Materials used: Crushed Stone, Timbers, Rebar, Plants

26. Lisa Digiorio 1 Hemlock Road (Square, Shapleigh)
Owner Last Name: Digiorio
Property Address: 1 Hemlock Road
Waterbody: Square
Existing Issue: Erosion from dirt driveway was eroding property
BMPs: Mulching, Water bars, planting
Materials used: Timbers, Rebar, Mulch, Plants

27. John and Christine Beaudoin 47 Spruce Road (Square, Acton)
Owner Last Name: Beaudoin
Property Address: 47 Spruce Road
Waterbody: Square Pond
Existing Issue: Phase 2 of Project
BMPs: Mulching, Rubber Razor, planting
Materials used: Plants, Rubber Razor, Mulch

28. Nancy Small 128 Apple Road (Square, Shapleigh)
Owner Last Name: Nancy Small
Property Address: 128 Apple Road
Waterbody: Square
Existing Issue: Phase 2 of Project
BMPs: Infiltration steps, Infiltration trenches, Waterbars, Mulching, Plantings
Materials used: Timbers, Crushed Stone, Filter Fabric, Mulch, Plantings

29. David Wells 16 Treasure Island (Square, Shapleigh)
Owner Last Name: David Wells
Property Address: 16 Treasure Island
Waterbody: Square
Existing Issue: Phase 2 of Project
BMPs: Infiltration Path, Mulching, Planting, Dripline Trench
Materials used: Crushed Stone, Mulch, Filter Fabric

30. Michael Bonneti 416 Cedar Drive (Square, Shapleigh)
Owner Last Name: Bonneti
Property Address: 416 Cedar Drive (Shapleigh)
Waterbody: Square
Existing Issue: Runoff from driveway eroding parking area and running towards lake.
BMPs: Infiltration trenches, mulch, rain garden
Materials used: Mulch, crushed stone and plantings

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. CBIs work to prevent all aquatic plants, both invasive and non-invasive, in addition to marine organisms such as water chestnuts and zebra muscles from being introduced to the Mousam Lake–Square Pond Watershed.

Invasive aquatic plants and organisms 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 and organisms. 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 and organisms. 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 or organism 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 and organisms entering their water body, which is why the ASYCC CBI program works very hard to prevent invasive aquatic plants and organisms from infesting the Mousam Lake-Square Pond 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

aquatic plants and organisms. If plants or organisms are found in or on the boat the CBI removes the plant or organism and sends it to the state lab for identification.

In 2013, the hours covered on the Square Pond Ramp remained consistent with the hours covered during 2012, however the season started earlier in 2013. Coverage began at the boat ramp on May 10th. This was the start of our pre-season, running until June 24th for 20 hours per week. From there the regular season began which ran until Labor Day, September 2rd. Coverage on the boat ramp was Monday through Thursday for four hours each morning, and 12 hours per day Friday through Sunday for a total of 52 hours per week. After Labor Day we began our Post-Season, with hours again decreasing to 20 hours per week, running until October 7th. A total of 718 boats were inspected at Square Pond during the 2013 CBI Season, which was a 21.44% increase from 2012.

On Mousam Lake, CBI coverage for the pre-season began earlier than ever, with bass tournaments in late April getting covered. Pre-season started May 10th and ran until June 24th for a total of 36 hours per week. The regular season ran from June 24th to September 2, 2013 for 98 hours per week. Mousam Lake post-season ran from September 3 through October 7, for 36 hours per week. A total 4,615 boats were inspected at Mousam during the 2013 CBI Season.

Plant Fragments Collected

The 2013 CBI season was another record-breaking year for aquatic plant recovery from boats entering and exiting Mousam Lake and Square Pond from the State Boat Ramps. An impressive 367 plant fragment bags were collected which contained a total of 1,260 plant fragments. In 2012, there were 266 plant fragment bags collected from the Mousam Lake and Square Pond Boat Ramps. The 2013 Season saw a 27.5 percent increase in plant fragment bag collection.

Report from Marsha Letourneau, Invasive Plant Specialist

Total number of specimen bags submitted: 367
From Mousam Lake: 291
From Square Pond: 75
From Loon Pond: 1

Total number of plant fragments: 1,260
From Mousam Lake: 1,008
From Square Pond: 252

The plant fragments counted were at least 1.5" in size or smaller if identifiable to genus and capable of generating a new plant. Fragments that obviously belong to the same plant were counted as one. The running total of all plant fragments, excluding minuscule pieces, was over 1,500.

The fragments represent 708 plants, all but two confirmed as non-invasive species. The other two were separate incidents of milfoil collected from boats entering Mousam Lake. Both were submitted for DNA analysis. The lab the State recognizes for this analysis is in MI and has been slow to report this season. The test report on the June submission was received Oct. 28 and

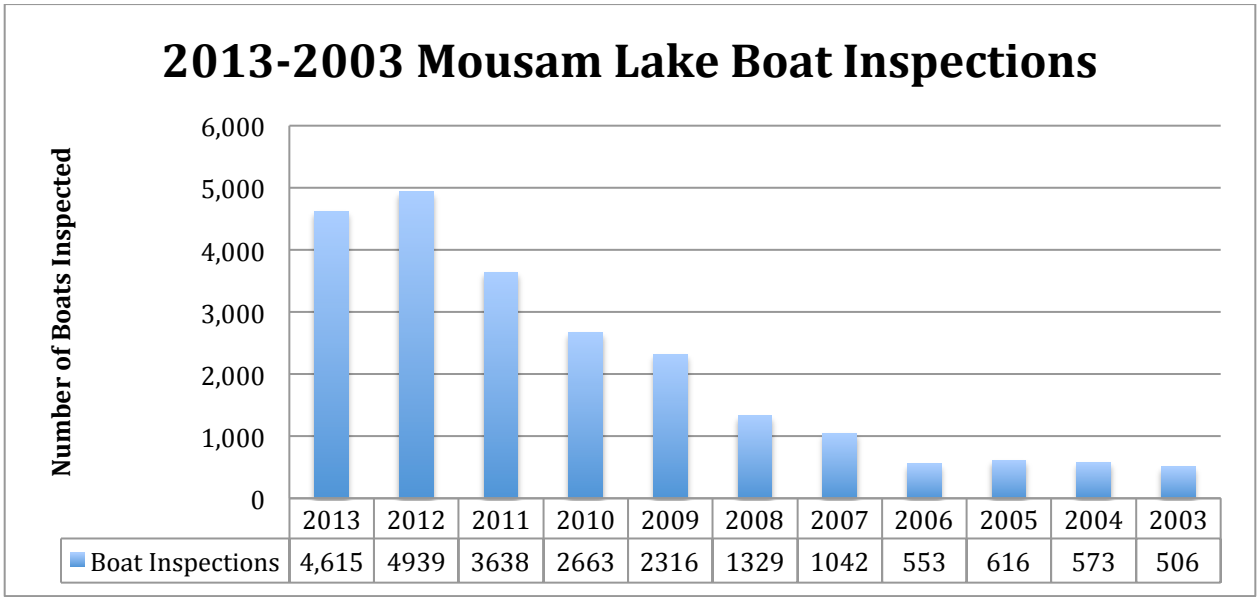
was inconclusive due to the condition of the milfoil specimens. Because the watercraft had last been in Lake Arrowhead, the VLMP has listed this incident's status as suspected as invasive.

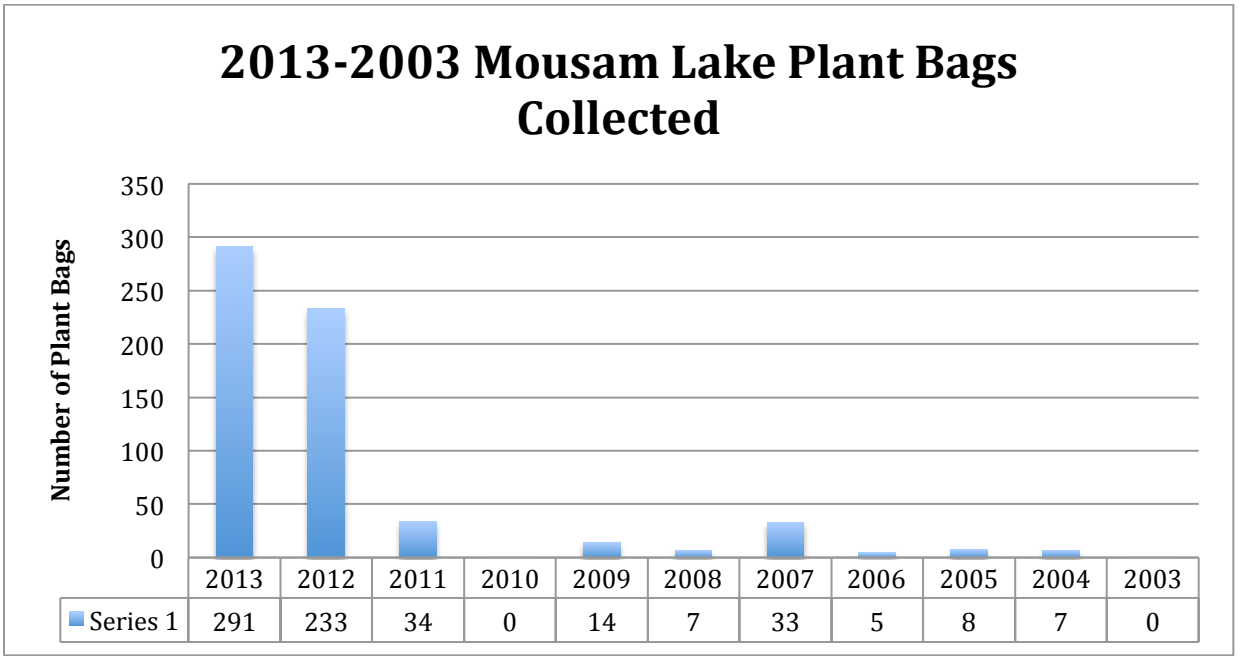
One of the boats carrying milfoil from Lake Arrowhead was from a community parks and rec department. As a result I have been contacting and am providing ME DEP and VLMP invasive species and watercraft inspection information to all local recreation departments and their town governments.

The specimen bags collected from Mousam Lake and Square Pond, including the one from Loon Pond, also contained 89 aquatic invertebrates that represented over a dozen species. One bag contained 900-1,000 newly-hatched mosquito larvae. All were native species except twelve invasive Chinese mystery snails. These were in bags of plant material collected from boats exiting Mousam Lake, which has a large infestation. Some of the other invertebrates were especially good to see as they are indicator species for better than average water quality.

Mousam Lake CBI Data

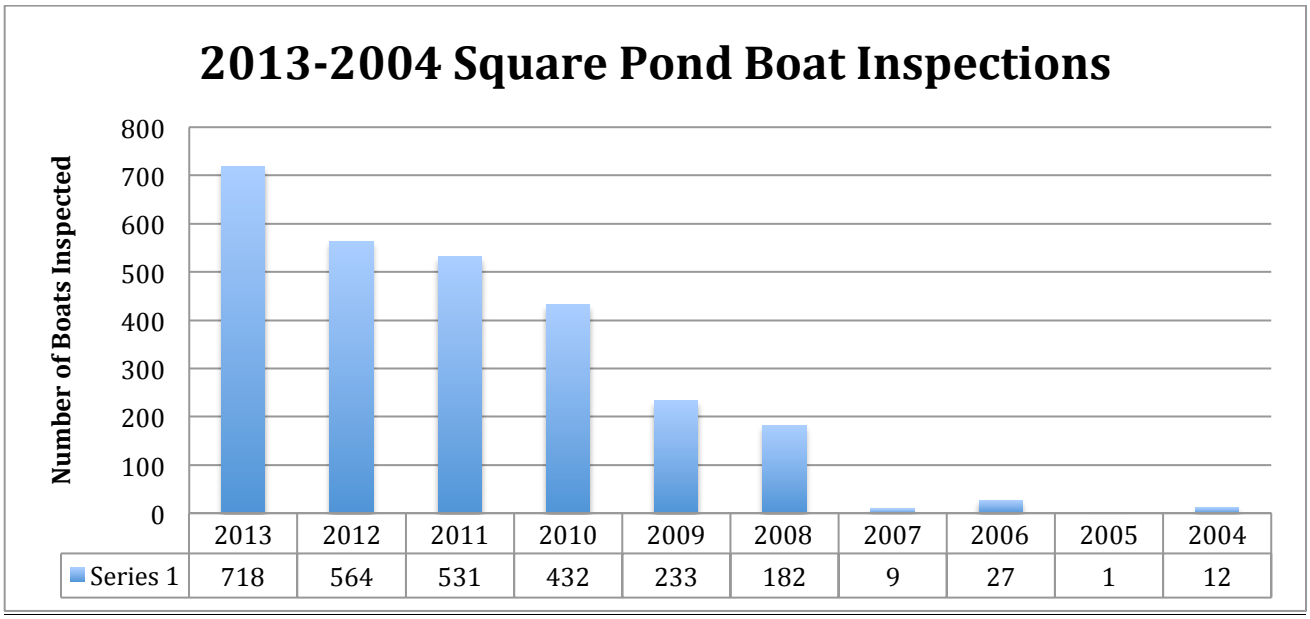
The two graphs below provide information collected from the CBI program on Mousam Lake. The first graph provides a break down of the number of boats inspected from 2003 to 2013 on Mousam Lake. The second graph for Mousam provides information from the 2013 CBI season, providing a detailed break down of the number of plant bags collected since 2003 to 2013.

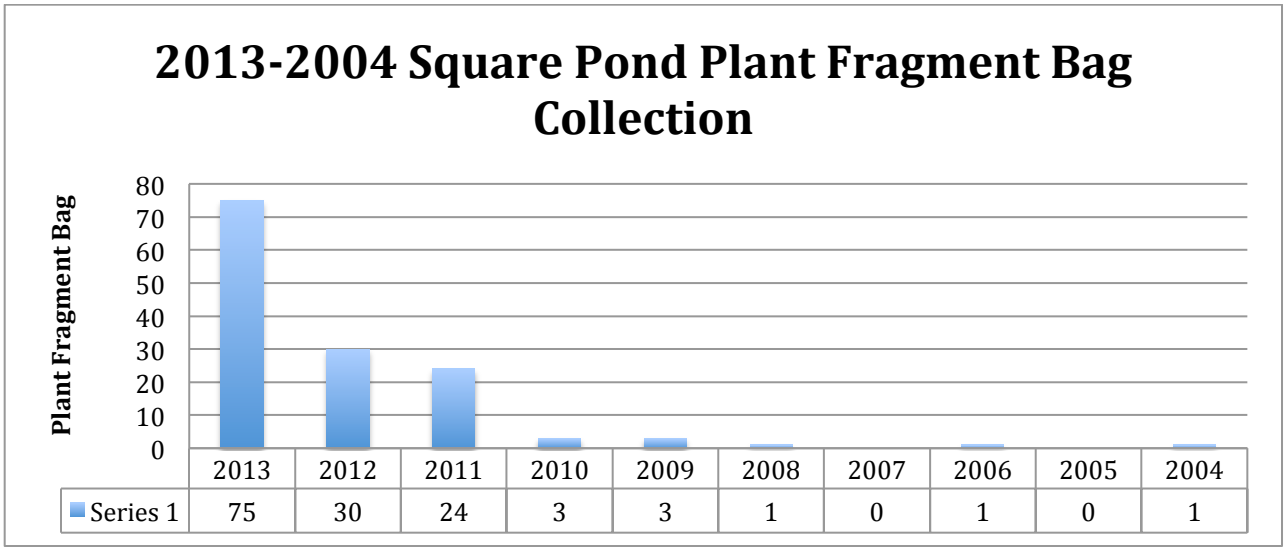




Square Pond CBI Data

The two graphs below provide information collected from the CBI program for Square Pond. The first graph provides a break down of the number of boats inspected from 2003 to 2013 on Square Pond. The second graph for Square provides information from the 2013 CBI season, providing a detailed break down of the number of plant bags collected since 2003 to 2013.




2013-2004 Square Pond Plant Fragment Bag Collection
Plant Fragment Bag
80
70
60
50
40
30
20
10
0
2013 2012 2011 2010 2009 2008 2007 2006 2005 2004
Series 1 75 30 24 3 3 1 0 1 0 1

VI. Appendix

ASYCC Yearly Statistics

ASYCC YEARLY STATISTICAL ANALYSIS (2001-2013)

		2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	To Date
ECC Demonstration Projects		30	26	27	24	16	20	18	26	18	17	17	15	20	274
By Town	Acton	14	14	11	7	2	6	8	16	11	9	4	7	10	119
	Shapleigh	16	12	16	17	14	14	10	10	7	8	13	8	10	155
By Lake	Mousam	7	13	14	7	9	10	7	10	10	12	12	9	12	132
	Square	15	8	11	15	6	6	7	3	1	2	2	1	3	80
	Goose	0	1	0	0	1	1	2	2	4	1	0	1	1	14
	Loon	3	4	2	2	0	3	2	11	4	1	1	3	2	38
	Other	5	0	0	0	0	0	0	0	2	1	0	1	1	10
Technical Visits		35	44	43	34	33	32	48	65	17	31	30	35	60	
Courtesy Boat Inspections	Total	5,336	5,303	4169	3095	2549	1421	1051	580	617	585	506			25,212
# of Inspections per Lake	Mousam	4,615	4,939	3638	2663	2316	1329	1042	553	616	573	506			22,790
	Square	718	564	531	432	233	182	9	27	1	12				2,709
Plant Samples Collected	Mousam	291	233	34	0	14	7	33	5	8	7	0			632
	Square	75	30	24	3	3	1	0	1	0	1				138
	Loon	1			1										2

Total Number of Fragments collected from the Plan Fragment Bags collected by Courtesy Boat Inspectors specified above

Total number of Fragments for 2013	1260
Mousam	1008
Square	252

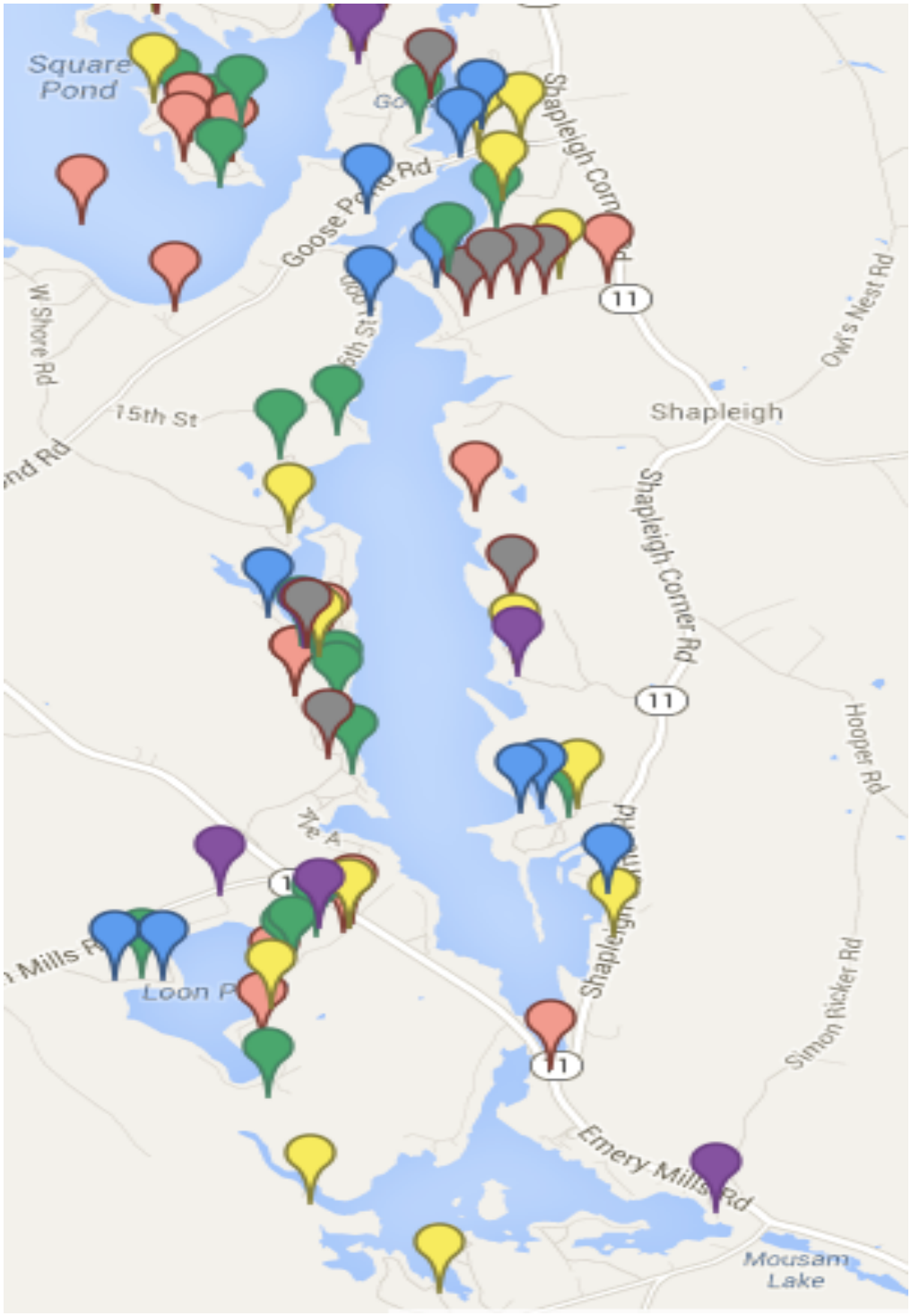
Erosion Control Crew Projects Completed 2013-2008

The following two maps show all projects completed by the ECC since 2008. The ASYCC works extremely hard to complete projects within the Mousam Lake – Square Pond Watershed.

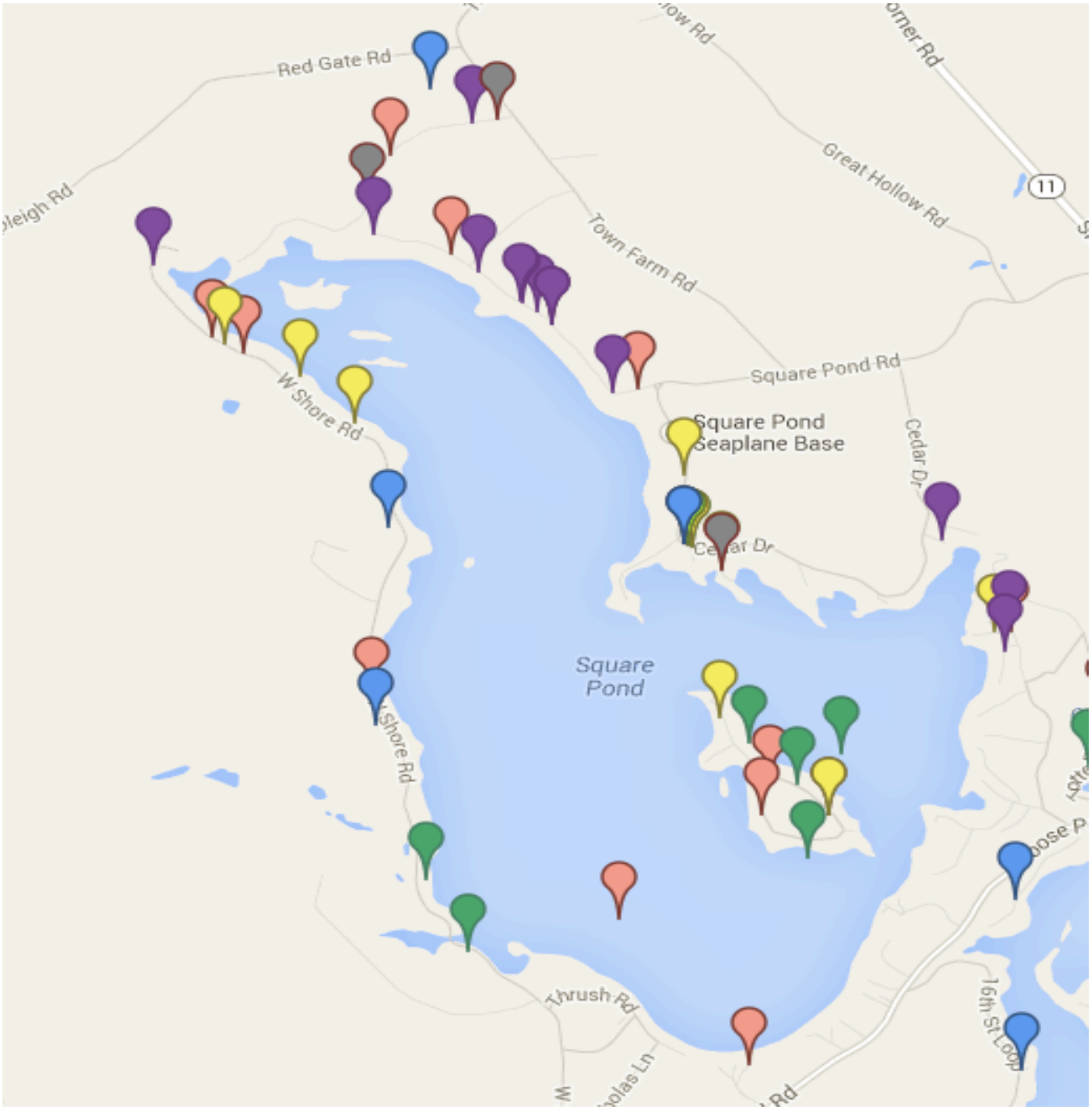
Legend
(Projects completed per year)

Red = 2013
Green = 2013
Yellow = 2011
Purple = 2010
Grey = 2009
Blue = 2008

Mousam Lake ECC Projects



Square Pond


Red Gate Rd
Great Hollow Rd
Town Farm Rd
Square Pond Rd
W Shore Rd
Square Pond
Seaplane Base
Cedar Dr
Square
Pond
Shore Rd
Thrush Rd
16th St Loop
11