New Hampshire Lakes Association
Lake Conservation Corps Program:

“Helping to Keep Drinking Water Clean”

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2012 Water & Watershed Conference
NH LAKES: Background & Mission

- Established in 1992

- Statewide, 501c(3) non-profit, member-supported organization representing approx:
  - 1,400 individuals and families
  - 150 lake associations and businesses

- Mission: To protect NH’s lakes and their watersheds.

- How many lakes and ponds are in NH?

- What is a watershed?
NH’s lakes and ponds are important!

- Ecological values
- Aesthetic values
- Recreational values
- Economic values

Lakes and ponds contribute to the quality of life AND to New Hampshire’s economy.
What does NH LAKES do?

- Educates and advocates for greater understanding, appreciation, and stewardship of lake resources and their watersheds.

- Supports and promotes policies and programs based on sound science.

- Collaborates with:
  - legislators
  - state agencies
  - municipalities
  - Lake/watershed associations, conservation groups
  - universities, schools, students
  - businesses and foundations
NH LAKES advocates for:

- Appropriate public access
- Balanced use
- Safety
- Improved water quality
- Prevention of exotic aquatic species
- Shoreland and watershed protection
- Wildlife and habitat protection
- Collaboration between groups, agencies, stakeholders
NH LAKES educates and informs:

- Quarterly newsletter, Lakeside
- Monthly e-news, Shorelines
- Periodic NH LAKES Advocacy Alert!
- Lakes Congress educational/networking meeting (June 22!)
- Website (www.nhlakes.org)
- Facebook page (NH LAKES)
- Twitter feed (@NH_LAKES)
- Speakers Bureau
- Newspaper articles and other publications
- Lake Host™ Program
- Lake Conservation CorpsSM Program
- Summer Youth Employment Program for Lake Protection
- Lake Winnipesaukee Milfoil Joint Board Exotic Weed Harvesting Program
- Special projects (rain barrel art program Spring – Summer 2012)
What is NH LAKES doing about one of the biggest threats to NH’s lakes?

**Stormwater runoff**: water from rain/snow melt that does not sink into the ground and instead runs across the landscape picking up pollutants before flowing into a waterbody.
Stormwater Runoff: The Problem

- 83% of the surface water quality impairments in New Hampshire are due to stormwater runoff. (NH Department of Environmental Service study)

- A one-meter decrease in water clarity can lead to decreases in property values from 0.8 to 6%. (UNH, U. Maine Study)

- NH LAKES has found that most property owners are not aware that:
  - their property generates stormwater runoff.
  - how easily and inexpensive it can be to reduce their contribution to the problem.
NH LAKES Lake Conservation Corps℠ Program

Education and water quality restoration program.

Goal: Actively involve teenagers in watershed restoration projects to:
- Improve surface water quality (reduce nutrient & sediment loading)
- Showcase lake- and river-friendly landscaping projects to the community to encourage stewardship
- Foster a lifelong interest in watershed stewardship

How it works:
- Partnerships (schools, associations, municipalities, professionals, businesses, funders)
- NH LAKES provides as-needed technical, administrative, and educational instruction, assistance with securing funding and materials.
- If students/teacher are hired for summer work, NH LAKES is official employer and provides necessary insurances and payroll services.
- Has been implemented in 10 communities and program structure has been different in each case.
- Program Motto: “Vegetate and infiltrate to protect your lake!”
Lake Waukewan, Meredith, NH

Watershed:
- 7,751 acres

Lake:
- 921 acres
- 70 feet maximum depth
- oligotrophic lake (low nutrients, ‘young’)
- Drinking water supply source for approx. 45% Meredith residents
  - 288,000 gallons per day average
Lake Waukewan, Meredith, NH

- *Management Plan for the Waukewan Watershed* noted the following water quality problems in the lake (Waukewan Watershed Advisory Committee, 2005):
  - confirmed toxic algae blooms (‘cyanobacteria’)
  - decreasing dissolved oxygen concentrations
  - increasing phosphorous concentrations

- DES designated watershed a zone of Surface Water Impairments with a 1-Mile Buffer for Development Projects.
Lake Conservation Corps Program at Lake Waukewan:

- **Step 1:**
  - NH LAKES applied for and received a New Hampshire Department of Environmental Services Local Source Water Protection grant (with support of Town and Waukewan Watershed Advisory Committee) (Fall 2010 – Winter 2011)

- **Step 2:**
  - Worked with Lake Waukewan Watershed Advisory Committee, Town, associations, and property owners to identify sites and develop runoff reduction plans (Spring 2011)
Lake Conservation Corps Program at Lake Waukewan:

– Step 3:
  • Worked with Town and local businesses to secure donated or reduced cost for materials (Spring – Summer 2011)

– Step 4:
  • Recruited, hired, and trained 6 students and 1 biology teacher from Inter-Lakes High School in Meredith (Spring - Summer 2011)
Lake Conservation Corps Program at Lake Waukewan:

- Step 5:
  - 6 stormwater runoff best management practice installations within 250 foot Shoreland Zone and 1 mile from water intake.
  - Installed during 5 week period (July – August 2011), 20 hour work weeks
  - All hand tools & no disturbance within bank or wetland resources (no Shoreland or Wetland Permits necessary)

The project tour…
Site 1: Waukewan Park, Waukewan Street

- Site Description:
  - Shoreline along Lake Waukewan at Town Park
  - Bank erosion occurring from runoff water and wave action

- Summer 2009:
  - NH LAKES LCC program installed vegetated buffer and rain garden (worked with town on wetlands permit)

- During Summer 2011, the LCC crew:
  - Expanded/enhanced the vegetated buffer
  - Created a 3-foot wide infiltration area (crushed stone)
Site 2: #40 Water Street

- Site Description:
  - Residential property
  - Grass area leading down to lake
  - Surface runoff from road, driveway, and lawn flowed over bank and into lake during rain storms and snow melt

- During Summer 2011:
  - LCC crew planted a vegetated buffer along shoreline using native plantings.
  - The plantings absorb runoff, and, when grown in, should deter geese from property.

Before The plan After (will grow in)
Site 3: #66 Water Street

- Site Description:
  - Privately owned right-of-way (ROW) that others use to access the lake.
  - Located downgradient of roadway, sloped driveway, and house.
  - Runoff water from roadway, driveway, boat parking area, and nearby roof flowed down the slope and into the lake.

• During Summer 2011, the LCC Crew installed:
  – Rubber razors to divert runoff water from ROW.
  – Stone infiltration areas along ROW to absorb diverted runoff.
Site 3: #66 Water Street (after)

Rubber razor and infiltration area installation.
Site 4: Hidden Cove (Water Street)

- Site Description:
  - Association owned property (multiple users) with paths and a beach.
  - This wooded area sits below the road.
  - Receives runoff from roadway drainage culverts and from road surface.

- During Summer 2011, the LCC Crew:
  - installed infiltration steps and trenches
  - stabilized pathways
  - installed a rubber razor to divert runoff into the new infiltration trenches, added plantings to absorb water.
Site 4: Hidden Cove (after)

Infiltration steps to absorb runoff.

Rubber Razor to divert runoff.

Stabilized pathways and culvert outlets.
Site 5: Winona Forest Association (off Winona Shore Rd.)

- Site Description:
  - Association owned site (multiple users)
  - Steep site with sand (tiered with multiple levels)
  - Down gradient of railroad tracks
  - Serves multiple users
    - Beach, swimming, canoe access (summer)
    - Snowmobile access to lake (winter)
  - Soil and beach sand erosion into lake

Soil and sand runoff from steep site.
Site 5: Winona Forest Association

- Summer 2011, the LCC crew:
  - installed massive infiltration area downgradient of the railroad.
  - connected infiltration area to infiltration trench that leads to a rain garden.
  - Along the northern edge of the property, the crew installed earthen waterbars to divert water off of the pathway and into the woods.
Site 6: Vittner Beach (Chapman Street)

- Site Description:
  - Association boat launch area.
  - Runoff from road and parking area flowing into lake
Site 6: Vittner Beach (Chapman Street)

- Summer 2011, the LCC crew:
  - installed rubber razors to divert runoff water from the street and parking area into existing depressed areas on the property.
  - added stone and plants to enhance the infiltration and absorption capacity of the depressed areas.
Lake Conservation Corps Program at Lake Waukewan:

- Project Installations

  • Resulted in loading reductions to Lake Waukewan (calculated by field measurements and EPA Region 5 Pollutant Load Reduction Estimation spreadsheet modeling):

    - Sediment reduction = 96.4 pounds/year
    - Phosphorus reduction = 97.1 pounds/year
Lake Conservation Corps Program at Lake Waukewan:

- Step 6:
  - Showcased projects to local community through a variety of outreach tactics:
    - Signage at site
    - Community “Open House” event
    - Articles in newspapers & NH LAKES publications
    - NH LAKES website, Facebook, YouTube videos
    - NH LAKES publications
    - Presentations at conferences
The crew hosts a community open house.

You are invited...

Join us for an open house to learn about projects to prevent erosion and pollution of lakes and streams.

You are invited to the Lake Waukewan LCC Community Open House!
Friday, August 19, 2011: 10:00am - 2:00pm (guided tours at 10am & 1:00pm)
Meet at Waukewan Park on Waukewan Street in Meredith.

Please join local students and the New Hampshire Lakes Association to see how the Lake Conservation Corps (LCC) has helped protect Lake Waukewan from pollution!

- 10am & 1:00pm: Guided tours of six projects installed around the lake (We’ll caravan from the park.)
- 10am - 2pm: Pick up a route map and conduct a tour on your own of the project sites.

Drinks, snacks, and lake-friendly landscaping guides will be provided.

For more information:
Contact Robie Parsons, NH LAKES Programs Coordinator, at 226-0299 or rparsons@nhlakes.org

To find Lake Waukewan Park: From Route 3 in downtown Meredith, follow Main Street south to Lake Waukewan St. Take slight right onto Lake Waukewan St. The park will be on the right, just past Avery St.

Learn how easy and inexpensive it can be to fix runoff water problems on your own property!
Open house visitors
Project videos posted on YouTube.

Search for Lake Waukewan at www.youtube.com:

http://www.youtube.com/watch?v=2MlrgtBC6XA

http://www.youtube.com/watch?v=AZI-XRKr7Xg
Lake Conservation Corps Program at Lake Waukewan:

- Step 7:
  - Participant (student & property owners) evaluations
  - Final report to DES
  - Final thanks to program sponsors and partners
  - Property owners monitor sites, provide routine maintenance, discuss problems and solutions with NH LAKES staff.

- Lake Waukewan Watershed Advisory Committee
- Lake Waukewan Shore Owners Association
- Hidden Cove Association
- Winona Forest Association
- The Atkinson Family
- The Whiting Family
- Belknap Landscape Company, Inc.
- Real Breen Lawn Care
- Van Berkham Nursery
- Inter-Lakes High School
- Town of Meredith
- NH Dept. of Environmental Services
What people are saying about the NH LAKES Lake Conservation Corps Program in Meredith…

“I had no idea coming into this job what phosphorus was. I am now leaving this job with a plethora of information on how to keep phosphorus out and how to solve runoff problems.”
- Johnny, LCC Crew Member, Meredith

“The crew deserves a huge applause from our Association. We couldn't be happier with the results and how it looks.”
- Robert, Lake Waukewan Shoreline Property Owner
Is there a stormwater runoff problem in your watershed?

Contact NH LAKES for help!

(603) 226-0299

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