

# the *Loon Flyer*



Published by the Squam Lakes Association Summer 2002

## PRESIDENT'S LETTER

Dear SLA Member,

Since 1994, the Squam Lakes Association (SLA) has been actively working with the Lakes Region Conservation Trust (LRCT) to conserve Red Hill. You may recall that in 1997 the SLA and LRCT jointly acquired the 212-acre Ford property, after preventing a poorly conceived development plan which would have subdivided the Southwest slope of Red Hill overlooking Squam Lake. During 2000, the LRCT with the assistance of SLA purchased 1,455 acres from the Dane family, a milestone event that ensured a majority of the Red Hill landscape within the Squam Lakes Watershed would be conserved in perpetuity. So far a total of 2,400 acres of conservation land on Red Hill has been protected.

I am pleased to announce that the LRCT recently signed an agreement to purchase 270-acres on Red Hill from the Wiggin family of Moultonborough for \$500,000. This property is adjacent to Eagle Cliff and includes the majority of the ridgeline on Red Hill, which is not in conservation. It is also one of the only two remaining unprotected mountain lots that are highly visible within the Squam Lakes Watershed. It is critical that this magnificent parcel of land remains protected from subdivision or development of any kind.

We are busy raising \$500,000 to finance the purchase of the Wiggin property, which is scheduled to close in September of 2002. Your association has played a key role in launching this capital drive with a \$50,000 donation from SLA's Conservation Fund. This decision was recently approved by our board directors. A handful of generous SLA members have provided leadership gifts representing more than one half of the purchase price. I am keenly aware of the precipitous decline in the stock market, and that we are currently experiencing the most severe bear market in three decades. Even so, we must



*The Wiggins parcel on Red Hill is shown in black, with Moon and Bowman Islands in the foreground. SLA and LRCT are working to conserve the beautiful Red Hill property.*

seize the opportunity to buy the Wiggin property now that it has become available following five years of negotiations

Red Hill is one of the most prominent parcels of land within the Lakes Region. The scenic, recreational and natural resource values combine to make it an extraordinary asset to Squam Lake. The natural beauty and tranquility we enjoy within the Squam Watershed is the result of years of care and foresight on the part of individual landowners who came before us, but shared our passion for Squam. I hope you will join us with a pledge, using the enclosed response materials, to secure this important parcel of land for future generations.

*Sincerely,*





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The Squam Lakes Association is dedicated to conserving for the public benefit the natural beauty, peaceful character and unique resource values of the lakes and surrounding area. In cooperation with local and state authorities and other conservation organizations, the Association promotes the protection, careful use and shared enjoyment of the lakes, mountains, forests, open spaces and wildlife of the Squam Lakes region.

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## INVASIVE MILFOIL UPDATE

Last September, the SLA Board of Directors voted to spend up to \$50,000 in the coming year to aggressively address the management of invasive milfoil in the watershed. Throughout the fall and winter, SLA staff and the Ecological Monitoring Committee have been involved in planning and education programs to prepare for the 2002 season. To date the SLA has purchased 35,000 square feet of benthic or bottom barrier material, retained a consultant, and purchased diving equipment.

The SLA retained the services of Lycott Environmental for the infestation at the Kimbell Marina area on Little Squam Lake. A permit to apply an herbicide to the area was obtained from the NH Department of Agriculture. On June 10, 2002, a total of 3 gallons of the herbicide Diquat was dispersed into the 1.5-acre area of Kimbell Marina. Diquat is a liquid herbicide that is effective upon contact with the plant mass. The area was posted to indicate any restrictions upon water use during the treatment period and area abutters were notified and cooperative. By June 24 almost all of the invasive milfoil had died off. This is not a permanent solution to the presence of milfoil in this area and likely the area may have to be treated in the next few years. The main objective of the treatment was to safely reduce the growth and prevent the spread of milfoil to other areas of the lakes via fragmentation. The area will continue to be monitored this growing season to evaluate future management alternatives.

Last season it is believed that the infestation at Kimbell's and the resultant fragmentation may have caused for two other areas to become impacted. Volunteer Weed Watchers surveyed the southeast section of Little Squam Lake last summer and NH Department of Environmental Services divers performed handpicking. On July 2 and 3,

SLA staff and volunteers Earle Jenkins, Jim Sanford and Dusty Sheldon installed 1,300 square feet of benthic barrier and handpicked several small growth areas. Additional surveying was performed and the area will continue to be monitored.

The channel connecting Little Squam and Squam Lake has invasive milfoil concentrated primarily in an area about 1/3 of the distance upstream from the bridge. Last October 2,000 square feet of benthic barrier were emplaced in the entrance to the long boathouse along the west bank and on July 9, 2002 an additional 500 square feet were covered. The area immediately adjacent to the Route 113 public launch also has isolated growth that has been handpicked on a regular basis. There is also one other areas in the channel approximately half way upstream along the south shore that was covered last fall and additional barrier was placed in early July.

Early 2002 season surveying has also found isolated and patchy growth near Riveredge Marina and those areas were handpicked or covered with bottom barrier in early July.

## BEV RIDGELY HONORED

On July 19, 2002, Dr. Beverly Ridgely of Center Sandwich received the prestigious Goodhue-Elkins Award from the Audubon Society of New Hampshire. The award was created to honor those, who in the spirit of Charles Goodhue and Kimball Elkins, have made an outstanding contribution to the study of New Hampshire's birds. Dr. Ridgely's passion for birds was recognized in 1977 with the publication of a book he authored entitled A Guide to the Birds of the Squam Lakes Region which had a second edition published in 1988. This book, produced in cooperation with the SLA, provided information on 250 species of living birds known to frequent the Squam Lakes Region.



## WEED WATCHER TRAINING

On June 7, 2002 a Weed Watcher training session was held at the SLA Resource Center. The SLA, Rockywold-Deephaven Camps (RDC) and the NH Department of Environmental Services (NHDES) hosted the training jointly with over 40 people attending. Weed Watcher is a volunteer program developed by the NHDES to educate the public on aquatic plants. Volunteers receive training and a handbook and then performing in lake surveys to familiarize themselves with aquatic plants. If suspicious plants are found, then a sample is collected and dropped off at the SLA for further identification. In the morning, Amy Smagula of NHDES gave a slide presentation on the state invasive aquatic plant program, followed by field trips to Kimbell Marina to view the infestation and the Route 113 public ramp to observe boat inspection procedures. In the afternoon an on water inspection session and lunch were provided at RDC. If you are interested in learning more about invasive aquatic plant or becoming a Weed Watcher, please contact Lisa Vickers at 603-968-7336 or by email at [lisavickers@squamlakes.org](mailto:lisavickers@squamlakes.org).

## FEDERAL GRANT FOR MILFOIL EDUCATION

The New Hampshire Lakes Association (NHLA) received a federal grant through the efforts of Senator Judd Gregg for \$260,000 from the National Oceanic and Atmospheric Administration to implement an invasive aquatic plant education and prevention program. The program involves staffing boat ramps with Lake Hosts, preparing educational videos and preparing invasive plant identification flash cards.

The SLA has been involved in the planning and implementation of the grant and most significantly in the



*Amy Smagula, NH Department of Environmental Services Exotic Species Coordinator describes variable milfoil to Rockywold-Deephaven staff. Photo by Eric Morse.*

“Lake Host” portion of the program. This season the Route 113 public launch and the SLA Resource Center public launch are staffed with Lake Hosts who educate boaters on invasive aquatic plants and teach them how to perform boat inspections. The SLA has received \$4,700 in grant funding to staff these ramps with personnel concentrating on weekends and holidays when boating activity is greatest.

The SLA and the Lake Sunapee Protective Association (LSPA) have been staffing launch ramps for several years to perform aquatic plant inspections of boats. Under the grant program, the SLA and LSPA have assisted in the development of a training program and serve as regional training facilities. Approximately 40 public launch sites in New Hampshire will be staffed with Lake Hosts this season. The SLA held training sessions on June 15 and 29 with over 40 people attending. Locally, Lake Hosts will be staffing Route 113, the SLA ramp, the Town of Sandwich ramp, and White Oak Pond.

## AMERICORPS MEMBER JOINS SLA

This May the SLA partnered with the Lake Winnepesaukee Association to host an Americorps Member under a program administered by the New Hampshire Association of Conservation Districts. Americorps Members are student volunteers who devote themselves to an organization or project. The Members receive a modest living stipend and an education award to help defray tuition costs.

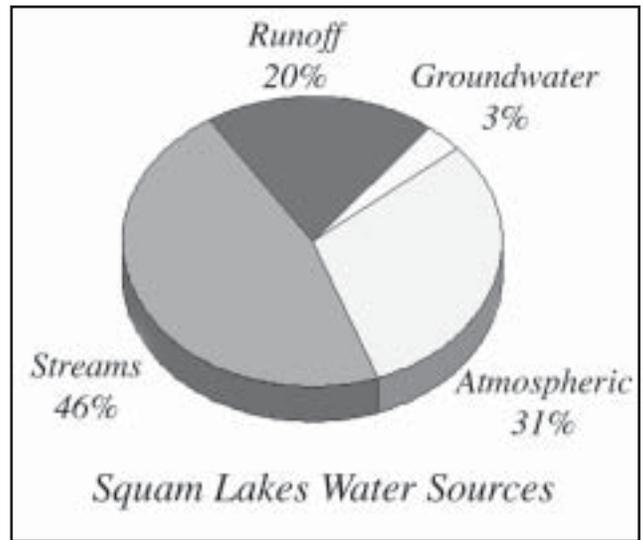
In May 2002, Lisa Vickers of Exton, Pennsylvania arrived at the SLA for the beginning of a 1-year term. Lisa is a recent graduate of Clemson University with a degree in environmental biology. Since arriving Lisa has received training from the Loon Preservation Committee, the University of New Hampshire, the NH Department of Environmental Services and from Ecosystems Management Consultants. Lisa is coordinating the Lay Lakes and Tributary Monitoring Programs, the Weed Watcher Program, assisting with loon protection, the bioinventory and milfoil management and education.

## THE SQUAM LAKES WATER AND NUTRIENT BUDGET STUDY

by Jeffrey Schloss, UNH Water Resources Specialist

As population expansion occurs in the Squam Lakes watershed and the resulting pressures from development and recreational use ensues, there is a growing concern over the degradation of lake water quality. Of primary concern are the impacts of cultural eutrophication; increased nutrient loading resulting in accelerated plant growth (submerged plants and algae blooms) within the lakes. Nutrients come from many sources and include surface runoff resulting from precipitation in the lake's drainage basin, commonly referred to as a watershed. Additional nutrients are transported into the lake through

stream inflow, groundwater, septic system effluent and even from dry fallout (dust particles). Of the two nutrients most important to the growth of aquatic plants, nitrogen and phosphorus, it is generally observed that phosphorus is more limiting to plant growth in lakes, and therefore more important to monitor and control. Phosphorus sources arise primarily through human related activity in a watershed. The best way to understand where the major sources of phosphorus are coming from is to conduct a watershed "nutrient budget" study.

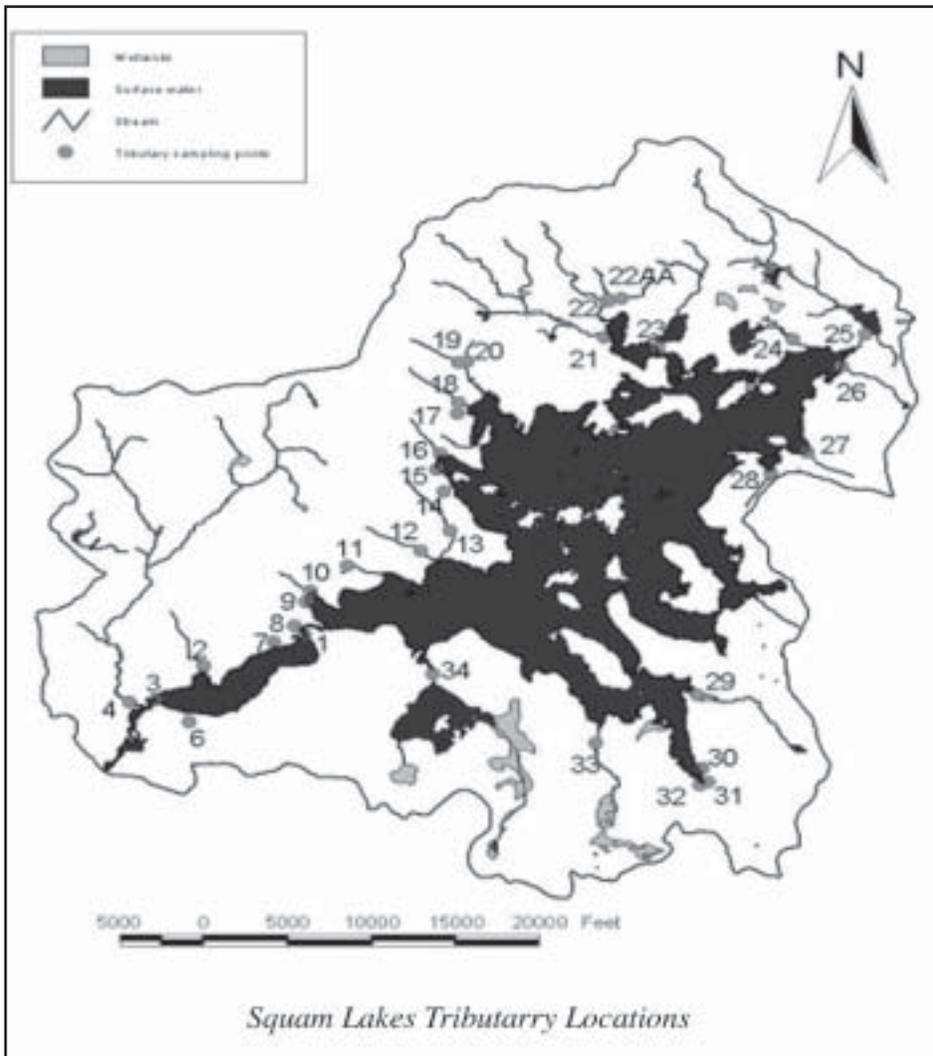


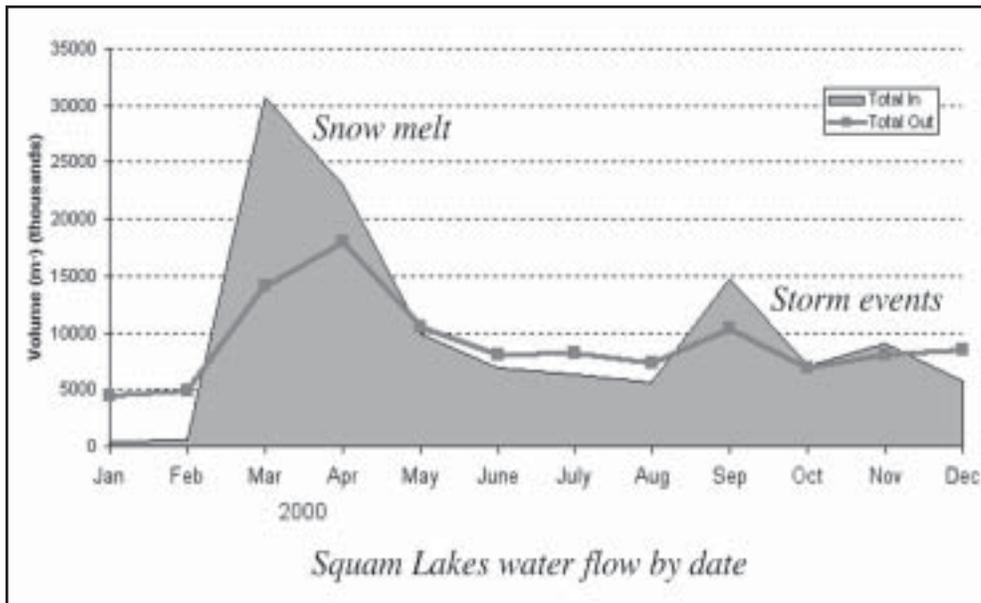
### HOW DID WE DO IT?

In the late fall of 1998 UNH researchers surveyed the Squam Lakes Watershed and installed staff gauges (large ceramic coated steel rulers that measure bank height of a stream) at the major tributaries. UNH Center for Freshwater Biology scientists and students, with the help of 18 resident volunteers and SLA staff, were able to collect over 775 total phosphorus (TP) samples and take over 1000 stream flow measurements at over 35 different sites between the spring of 1999 and July of 2000 (the figure below displays the sampling sites.) This allowed coverage of low, normal ("base") and storm event flow conditions of the contributing streams through almost two years. By multiplying the TP concentrations by the volume of water flowing into the lake we get a measure of the actual TP load impacting the lake.

### IT'S ALL A MATTER OF "BALANCE"!

Before you can get at the nutrient budget of a lake watershed you have to balance the water input and output. Besides stream flow and overland storm runoff, water enters a lake through direct precipitation upon the lake surface and through groundwater influx. Local weather station data allowed for precipitation accounting and analysis of flow from the major Squam tributaries

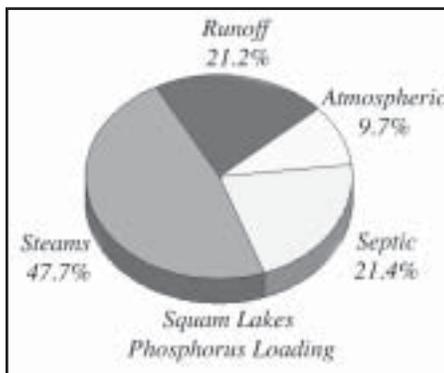




allowed us to estimate groundwater inflow. So how did we do? Luckily we had almost continuous coverage of lake outflow from an automated flow gauge at the Ashland dam and lake height from the RT. 3 bridge water level logger to figure out lake volume changes. We were able to balance the water inflow and outflow to within 2 percent! Kudos to SLA and the volunteers!

### SO, WHERE DOES THE WATER COME FROM?

The water/nutrient budget was calculated over a twelve month period from July 1999 – June 2000. The image on page 4 displays the water budget results. Surface water sources dominated as major streams contributed 46% and seasonal streams combined with surface runoff contributed an additional 20% of the water. Precipitation contributed 31 % which is typical of our large NH



watersheds. Groundwater inflow was about 3 percent. Like most New Hampshire lakes, the greatest volume of water entered the Squam Lakes during the period of spring melt in March, April and May.

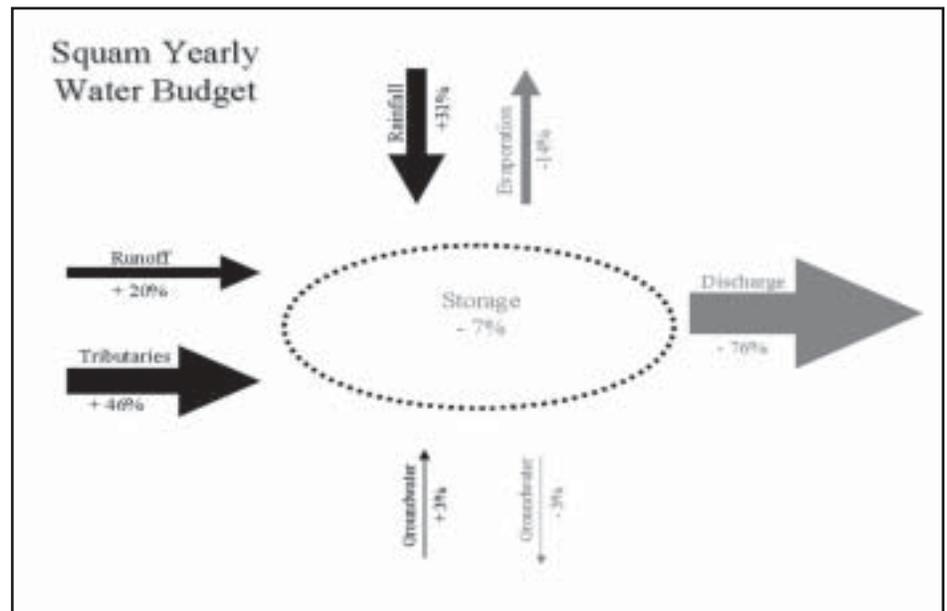
### WHERE DOES THE PHOSPHORUS COME FROM?

The dominant source of phosphorus entering the Squam Lakes is from streamflow (47.7%), diffuse runoff (21.2%) and septic systems (21.4%). Contributions from atmospheric sources, wetfall and dryfall, contributed

significantly less (9.7%) phosphorus (See Squam Lakes Phosphorus Loading). Phosphorus entering the Squam Lakes through streamflow closely mirrored the water inflow from the larger tributaries providing 60% of the load. The 26 smaller streams collectively contributed the remaining 40.0% phosphorus with no individual stream accounting for more than 3.8% of the loading.

### WHAT DID WE LEARN?

As the majority of the TP coming into the lakes results from water runoff throughout the watershed, thus, what we do on the watershed landscape is critical to the health of the lakes. Minimizing our impacts (see the SLA pamphlet 50 Ways to Save Squam) will insure the best water quality. Problems exist when we compare relative water inflow to relative TP contribution, and TP contribution per subwatershed area. We will be investigating those critical areas further. Septic system contributions were also found to be significant and this study most likely under-calculates their true impact. Septic systems contribute the greatest summer season loading compared to the other sources. This stresses the need to keep these systems maintained properly.



## YOUTH SCHOLARSHIPS



Ashland Elementary School: Casey Barney (JSLA), Bev LaFoley (JSLA Chair), Missy Green (CYSP).



Sandwich Elementary School: Bev LaFoley (JSLA Chair), Teresa Vierus (JSLA), Cody Whitcher (CYSP), John Hanson (Principal).



Holderness Central School: Chris Devine (SLA Executive Director), Bev LaFoley (JSLA Chair), Melissa Gallagher (CYSP), Ian Collagan (JSLA), Steve Fiore (JSLA), Alex Kelly (MJ).



Plymouth Elementary School: Chris Devine (SLA Executive Director), Sarah Murphy (JSLA), Zoe White (MJ), Bev LaFoley (JSLA Chair).



Bill and Susan Copeland's house burned down on May 16, 2002. Photo by Bill Copeland.

## HOUSE FIRE

Late in the evening on May 16, 2002, Bill and Susan Copeland's home on Bean Cove in Moultonborough burned to the ground. The Adirondack style home had been under construction for nine months, and was nearing completion when the tragedy struck. The Copeland's worked carefully with White House Construction to maintain the integrity of the site during construction, protecting the trees and transplanting fragile mosses and ground covers to an on-site nursery.

The fire damaged approximately 50 significant trees. Through their architect, Chris Williams, the Copeland's arranged for two site visits with the SLA, Alison Gorley of the NHDES Shoreline Protection Bureau, and arborist Phil French. They reviewed the damage to the trees and tried to determine what restoration could be performed. After all the investigations and inspections were done, the fire debris was removed from the site. The Copelands have decided to rebuild and will con-

tinue working with Mr. French and the NHDES to replant the site with a mixture of indigenous mature trees and saplings. The design of their home has been modified to include an extensive security system, a sprinkler system and a 20,000-gallon internal cistern providing water storage in the basement of their home.

The Copeland's would like to thank the Squam Lake community for providing encouragement and support.

## EQUIPMENT NEEDED

SLA needs a Windows based lap-top computer, preferably 1-2 years old. SLA recently received a digital projector as a gift and plans to use the equipment to display PowerPoint educational slide shows.

SLA needs a 14-16 foot motorboat and/ or a 25 h.p. four stroke motor for water quality and exotic plant management. A Boston Whaler type boat and Honda four stroke motor are preferable.





*The Student Conservation Association held their annual Work Skills training at Mead Conservation Center and constructed a bridge on the Morgan-Percival Connector Trail. Photo by Eric Morse.*

## SCA COMPLETES TRAIL MAINTENANCE PROJECTS

The Student Conservation Association (SCA) Conservation Crew held their Work Skills training at Mead Conservation Center (MCC) and performed over 600 hours of trail construction on the Mt. Percival and Morgan-Percival Connector Trails. The SCA Conservation Crews consist of 10 high school students and 2 crew leaders who perform 5 weeks of trail work at National Forests and National Parks all across the U.S. Thirty crew leaders attended the Works Skills training at Mead Conservation Center in late May. SCA's volunteer time on the Mt. Percival Trail Reconstruction Project is worth 20% or \$3,500 of a match on SLA's Recreational Trails Program grant of \$14,487. The new Morgan-Percival Connector Trail eliminates walking along Route-113 after hiking the Morgan-Percival Loop. The section of trail is 0.4 miles long and starts approximately 0.1 miles from each trailhead. The native timber bridge shown above was completed by the SLA Caretakers this spring, with help from Rebecca Pike of SCA. The SLA crew added a hand rail for safety

and set stepping stones on either side of the bridge.

## HIKE FOR THE TRAILS

Twenty-nine hikers participated in the 4th Annual Hike For The Trails on Saturday, July 28th, with 23 hikers completing the 8.5-mile Advanced Hike

from Mead Conservation Center to Mt. Morgan Trail and 6 young hikers completing the 5.5-mile Intermediate Hike on the Morgan-Percival Loop. The hikers raised \$9,034 from 102 sponsors, which will support SLA Trail Maintenance and the Mead Conservation Center. Peter Kampf won a free pair of Merrill hiking boots as the top fundraiser, with \$2,580 in sponsorships. Sarah Sherrill won a backpack from REI, and Sandy McGinnes won a \$25 gift certificate from the SLA store as the 2nd and 3rd place winners, respectively. Meredith Village Savings Bank and Golden Pond Country Store sponsored Hike For The Trails. Thanks to all the sponsors and hikers for making the event so successful!



## CAMPING NOTES

*Our night at Wister 4 was so sweet and peaceful. After swimming all afternoon at the beach, setting up our campsite and cooking over the open fire to the tune of the loon call, we slept fitfully. We did complain when it came time to leave and are already talking about when to come back. I support SLA in all your efforts to protect and maintain this heavenly place.*

*- Dana Buck, July 27, 2002*



*Lisa Vickers, Jason Williams and Sarah Sherrill rake a waterbar on the Old Bridle Path during National Trails Day. Photo by Eric Morse.*

SQUAM SUMMERFEST - SATURDAY, JULY 20, 2002



*Paddling Races*



*Jeff Schloss Water Quality Workshop*



*Scavenger Hunt & Volleyball*



*Tom Stewart Magic Show*

NON-PROFIT ORG.  
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