



THINK MAPLE!

By Margaret Gillespie, Illustration by Cheryl Johnson

I grew up in Canada surrounded by sugar maples – even the Canadian flag features the maple leaf! At the Ward’s farm near our house in the Laurentian Mountains north of Montreal, maple sugaring was an annual late winter ritual – a celebration, gathering of friends, source of income, and incidentally, lots of hard work. At that time, sap dripped out of spigots in trees into pails and was collected by hand. The best part was emptying the buckets into a huge collecting container drawn by two black Percheron draft horses. I can still see in my mind’s eye the dark of the horses against the white snow, the gray trunks of maples in rocky terrain outlined against the clear blue Laurentian sky. Warming up later in the sugar house, we watched the sap foam as it boiled and we sipped hot sweet “maple tea” which is sap on its way to becoming syrup.

For those who like mystery, there is still some intrigue involved in understanding exactly how and why maple sap flows. During the spring and summer, maple leaves

are actively involved in photosynthesis – the process whereby leaves absorb sunlight, take in carbon dioxide from the air, and use water to make their own food (a sugar called glucose). In fall this glucose is stored as starch in the wood of the maple. As the weather warms in late winter, the starch changes to sugar and moves into the xylem or transporting vessels in the sapwood or outer area of tree trunk. Sap flows in the xylem in direct relationship to pressure within the tree. Pressure during the daytime comes from carbon dioxide in tree cells and in sap as this gas moves into the spaces between tree cells. Additional pressure results from osmosis where the high concentration of sugar in the sap draws water into



the roots. When the tree is tapped, this pressurized sap drips out. Freezing temperatures at night are essential because pressure in the tree becomes less than the air surrounding the tree. As a result of the decrease in pressure, sap stops running and water moves into the tree from the roots, recharging the tree. Ideal conditions for

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FORGING TRAILS

NORTH COUNTRY MEMORIES: A TRIP TO PITTSBURG REKINDLES FOND MEMORIES

I recently took a couple days vacation and we did a family trip to Pittsburg, NH. The main impetus for the trip was to celebrate our son’s 21st birthday. I can’t believe it’s 21 years since I held that “bag of sugar” against my shoulder in the Simpson maternity ward in Edinburgh. Donald is our only child (if we don’t count the two hairy, four-pawed, wet-nosed boys who share our home) and he grew up running wild on a farm in Deering. We have plenty of those wonderfully embarrassing photos to show new girlfriends of him running naked through the organic vegetable garden or playing in the mud.

In his pre-teen years, Donald and I would do “guy weekends” and camp near and explore Lake Umbagog together. Donald was always patient when we would bushwhack into some Osprey nest in the middle of nowhere. He saw more Ospreys in his young life than most see in a lifetime . . . and Moose, and Beaver, and Loons, and Bald Eagles. These are special father son memories I cherish.

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FORGING TRAILS *continued from page 1*

Then the teen years hit and our “guy weekends” were a thing of the past. Donald was busy with school and sports, then along came driving and working on trucks. He had his own life and it certainly didn’t revolve around me. I feared he spent too much time glued to a computer and texting his friends on his phone. I hoped he would not forget his connections to the woods and wild places that make New Hampshire so special.



Susan MacLeod and the three boys

It was great to see his genuine appreciation of the beauty of the landscape – the mirror-like surface of Back Lake in Pittsburg, the frosted summit of Magalloway Mountain, the rushing waters at Garfield Falls, and the azure sky reflected in the surface of Cherry Pond near Whitefield. He was at ease in the woods. He hadn’t forgotten those special wild places we had shared.

The trip reminded me of how important it is find those times to make memories with family – not just at this holiday season – but all the time. It also reinforced the importance of encouraging children to make connections to the natural world at a young age. Those connections form ethics and values that last a lifetime.

*Forging Trails is written by Executive Director Iain MacLeod.
You may contact Iain at 603-968-7194 x 23 or iain.macleod@nhnature.org.*

NEWSBRIEFS

- ◆ After eight years on staff, Jim Eckert resigned as Facilities Director in September. He now works for Building Energy Technologies, a Concord company that provides energy efficiency services. Jim will be missed, especially for his ready smile and great sense of humor along with a willingness to tackle any job. Among his many accomplishments, Jim supervised installation of three new exhibits in the Mead Discovery Place - one on Blanding’s turtles, another on Hubbard Brook Experimental Forest’s research, and the current exhibit on Eastern Coyotes. Other projects Jim oversaw are a “bat condo,” a recycling shed at the picnic area, reconstruction of the marsh boardwalk, an animal quarantine facility, and completion of new Life Underground, Mountain Lion, Bobcat, and Ecotone Mammal Exhibits.
- ◆ In October we welcomed Tim Curry as new Facilities Director. Tim previously worked as Housing Production Manager for CATCH Neighborhood Housing where he supervised all contractors and work performed on all CATCH projects (new construction, rehab projects, and landscaping). Tim has also been a self employed contractor since 1995 specializing in green homes and post and beam construction. Tim is a licensed Home Inspector (including LEED certified) and a career level fire fighter and EMT and owns a 20-acre registered tree farm. Tim has a Bachelor of Arts in History from the University of Maine, Orono, and is a 2007 graduate of the Leadership Concord program. He lives in New Hampton.



*Facilities Director
Tim Curry*

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SQUAM LAKES NATURAL SCIENCE CENTER

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The Squam Lakes Natural Science Center is a non-profit educational institution incorporated in 1966 as a charitable organization under statutes of the State of New Hampshire with its principal place of business in Holderness. Our mission is to advance understanding of ecology by exploring New Hampshire’s natural world. Tracks & Trails is a regular publication of the Squam Lakes Natural Science Center sent to all members. Comments about the newsletter are welcomed by newsletter editor Janet Robertson at 603-968-7194 x 12 or janet.robertson@nhnature.org.

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STAFF PROFILE

KRISTEN PICKEL

By Laura Dentel

LD: You volunteered at the Science Center as a teenager. Tell us about that experience.

KP: Well, my first day behind the little admissions counter in the Webster Building lobby was slightly awkward. I had an allergic reaction to some medication and my face was blown up like a balloon. I was so embarrassed to begin with, and then Dave Erler said to me, "Do you belong here?" Twenty years later I guess the answer is yes!



LD: Why do you think it's important for teens to volunteer?

KP: I think volunteering does so much for young people; it gives them a different perspective, opens up career possibilities, and provides them with a sense of accomplishment.

LD: What is your favorite Science Center animal/exhibit?

KP: The saw-whet owl has to be my favorite because he looks so sweet and innocent, but he's really ferocious!

LD: What is the best thing about working Admissions?

KP: That's a toss-up between meeting people from all over the world and being surrounded by the most wonderful team of co-workers I could ever imagine.

LD: What is the worst thing about working Admissions?

KP: Well, I'd have to say that the worst thing is that I've spent all the

money I've earned this past summer in the Howling Coyote Gift Shop, thanks to all of the great t-shirts and jewelry that Mary Ellen always finds!

LD: Tell us about your job at Moultonborough Academy.

KP: I'm an assistant in the Media Center. I feel so incredibly lucky because every day I'm surrounded by the most amazing teachers and kids, and I get to help out with all of their projects. I love doing research. I never know what we'll be working on any given day, and I love that variety.

LD: What do you find most rewarding about working in the library?

KP: I think the best feeling is being able to choose the perfect book for someone. I love it when someone returns a book and says, "That was great!"

LD: I know it's hard to choose, but what are your three favorite books and why?

KP: My favorites are always changing, so I'll tell you my three favorites right now. I loved *A Great & Terrible Beauty* by Libba Bray and its sequels, which is a young adult series that mixes Gothic mystery, romance, and fantasy. It has a very relatable main character and kept me on the edge of my seat. I just finished *Girls Like Us* by Sheila Weller, a biography of Carole King, Joni Mitchell, and Carly Simon, who are three of my heroines. I loved hearing the stories behind their songs and learning how they paved the way for a generation of female musicians. My third favorite is a series, the Stephanie Plum books by Janet Evanovich. They're full of laugh-out-loud humor and zany characters and I can't get enough of them!

LD: What do you like to do in your spare time?

KP: Well, obviously I adore reading. I also love taking pictures (of people, not scenery), hanging out with my family and friends, going shopping, and watching reality TV, especially *The Amazing Race*.

NEWSBRIEFS *Continued from page 2*

- ◆ In October, the New Hampshire Association of Volunteer Administrators presented former Volunteer Coordinator Elaine Melquist with the Judith Lonergan Award for outstanding professionalism in the field of volunteer administration. Former Executive Director Will Abbott spoke in recognition of Elaine's accomplishments and leadership, including the creation of the volunteer docent program here.
- ◆ In August, Education Program Director Amy Yeakel and Executive Director Iain MacLeod attended the annual Association of Nature Center Administrators Summit (ANCA - www.natctr.org) at the Teton Science Schools in Jackson Hole, Wyoming. The four-day conference provided outstanding opportunities for learning, sharing, and fellowship for 170+ senior staff from nature centers across the country. Iain made a presentation at the Summit to highlight the selection of the Science Center as host of the 15th annual Summit in 2009. ANCA members are excited about coming to New

Hampshire next August to experience the Granite State firsthand.

- ◆ Naturalist Dave Erler traveled to the Milwaukee County Zoo in September to attend the Association of Zoos and Aquariums (AZA) annual conference, where he learned about current issues in conservation and best practices.
- ◆ Naturalists Eric D'Aleo and Margaret Gillespie and Education Program Director Amy Yeakel attended the 42nd New England Environmental Education Alliance (NEEEA) conference from October 3-5 at Sargent Center in Hancock. *A Journey Home: Fostering Ecologically Centered Communities* was this year's theme featuring a keynote address by Gibran Rivera of the Interaction Institute for Social Change. A highlight of the conference was a community art project completed by conferees where natural materials were used to make a beautiful Earth blanket for erosion reduction caused by mountain top mining. This blanket will be sent to a West Virginia school adjacent to an active mining operation.

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HELP SUPPORT THE SCIENCE CENTER BY USING GOODSEARCH.COM

What if you could help Squam Lakes Natural Science Center raise money each time you searched the internet?

GoodSearch.com is a new Yahoo-powered search engine that donates half its advertising revenue, about a penny per search, to the charities its users designate. Use it just as you would any search engine, get quality search results from Yahoo, and watch the donations add up!

Just go to www.goodsearch.com and enter Squam Lakes Natural Science Center as the charity you want to support. And, be sure to spread the word!

NEWSBRIEFS *Continued from page 3*

◆ A new volunteer program will be launched in June 2009 called First Guides. First Guides is specifically for teens from ages 14 to 17. Formal classroom training in July will be followed by a hands-on training and mentoring between adult volunteer docents and First Guides. If you know a teen who would like to be part of this volunteer program, please contact Volunteer Coordinator Carol Raymond. The application deadline is March 31, 2009, and a maximum of 10 teens may enroll this first year. Funding for this project was provided by the Bea and Woolsey Conover Fund of the Lakes Region/ New Hampshire Charitable Foundation.

◆ Beginning in mid-October we started work rebuilding the west wing of the Red Barn, located behind the Holderness Inn. Some of you may have noticed that the wing was completely crushed by snow load last winter. After much discussion and input from the Board's Building and Grounds Committee, we settled on a plan that will eventually include new restroom facilities (a convenient half way stop for trail goers as well as garden and Kirkwood Café visitors). The work is being done by Bishop and Davis Builders of Holderness.



◆ This year's Autumn Festival on September 27 was generously sponsored by Community Guaranty Saving Bank. The event featured author Warner Shedd and wildlife artist Rosemary Conroy.

◆ On October 1, we received a six month old male bobcat from a wildlife rehabilitation center in Tennessee. The young bobcat had been orphaned and kept as a pet until it was confiscated by authorities. He spent one month in quarantine and then was introduced to our 14-year-old female bobcat. If you missed our 'New Animal Day' on November 22, you will still have a chance to see the new bobcat by joining us for one of our Opening the Gates to Winter programs (see page 6).

◆ Over 200 hardy people enjoyed the annual Halloween Hoot N Howl on October 25. Four live skits, including "Gravedigger at the Extinct Species Cemetery," charmed the costumed guests. Special thanks to the Girls Scout/Brownie troop from Moultonboro and Sandwich for carving the jack-o-lantern pumpkins that decorated the trail. We also thank you our wonderful volunteers and these contributors of food and supplies: Dunkin Donuts, Plymouth; Golden Pond Country Store, Holderness; Hannaford Supermarket, Plymouth; Holderness General Store, Holderness; Moulton Farm, Meredith; Shaw's, Gilford; 'Tootsie Roll Industries; Surowiec Farm, Sanbornton, Longview Farms, Plymouth.

◆ The Gephart Exhibit Trail closed November 1 and will reopen May 1. But offices remain open and programs are offered year round. Visit the online Howling Coyote Gift Shop for holiday gifts, at www.nhnature.org. Full-color images and detailed descriptions, plus the convenience and security of PayPal make shopping easy. Don't forget to take advantage of your 10% member discount with online purchases and consider purchasing a gift membership for that perfect holiday gift!

◆ This fall, we have constructed a brand new, state-of-the-art animal holding facility behind the Webster Building. This new building – which has been discussed for years – has been designed with four separate holding areas that can be adapted for small- to medium-sized mammals and some birds. One of the areas will be the permanent home for our Coyote. The other three areas will be available for occasions when we need to take an animal off exhibit, or a new animal arrives and (after quarantine) cannot go on exhibit. The facility was designed by Dave Erler, Dennis Capodestria, and Clare Eckert. The aluminum cage and wall system is from a company called Corners Limited.



BUSINESSES INVEST IN EDUCATION

In addition to Annual Fund gifts, every year numerous businesses provide support in the form of memberships, sponsorships, and in-kind contributions of goods and services, which help to sustain the education programs and services we provide for the community. We are grateful for this strong community backing, which is vital to our work.

We thank these businesses that provided support in 2008 through memberships: Belknap Landscape Company, Cullen Concrete Form Company, Grappone Automotive, Law Companies Community Service Program, Morrell Corporation, Pike Industries, Pinetree Power Tamworth, Rockywold-Deephaven Camps, Stonyfield Farm, and Woodlands Credit Union.

We are grateful to these businesses that provided support in 2008 through sponsorships: Belknap Landscape Company, Community Guaranty Savings Bank, Cross Insurance Agency, Bill Driscoll Associates, Hypertherm, Meredith Village Savings Bank, New Hampshire Electric Co-op Foundation, Old Print Barn, Public Service of New Hampshire, Rockywold-Deephaven Camps, Squam Boat Livery, Stonyfield Farm, and Tanger Outlet Centers.

We receive an average of \$50,000 of in-kind contributions of goods and services annually, many from businesses. We are grateful for each and every contribution; all 2008 in-kind donors will be listed in the 2008 Annual Report. Major in-kind gifts were received in 2008 from: Balsams Grand Resort Hotel, Belknap Landscape Company, Bound Tree Medical Company, Cabot Cheese Cooperative, Canoe Restaurant, Charles River Laboratories, Common Man Restaurant, Longhaul Farm at Squam Lake, MegaPrint, Plymouth Animal Hospital, Park Plaza Hotel, Peak Organic Brewing Company, Precision Lumber, Peter Smith Associates, Squam Boat Livery, Squam Lake Inn, Stonyfield Farm, Tootsie Roll, True Colors Print & Design, Van Berkum Nursery, Venture Print, Walter's Basin, White Mountain Country Club, Winnepesaukee Forge, and Woodstock Inn and Brewery.

VOLUNTEER UPDATE

VOLUNTEER RECOGNITION DINNER

PARSONS AWARD

Trustees and staff hosted the annual Volunteer Recognition Dinner at the Common Man Inn Restaurant in Plymouth on August 26 to honor and thank all volunteers. Bob McCarthy of Laconia provided musical entertainment. Thank you to our generous business sponsors: Bill Driscoll Associates, Cross Insurance Agency, and Tanger Outlet Centers. The Common Man generously donated a portion of the dinner also. Numerous local restaurants gave door prizes: Anderson's Bakery, Ashland House of Pizza, Coe House Restaurant, Coyote Grill, Fratello's Ristorante Italiano, Hart's Turkey Farm Restaurant, The Inn on Newfound Lake, Lemongrass Restaurant, The Manor on Golden Pond, Naswa Resort, Patrick's Pub & Eatery, T-Bones & Cactus Jack's, UNO Chicago Grill, and The Woodshed.

Carol Thompson was presented with the Presidential Volunteer Call to Service Award. This award is for anyone who has volunteered 4,000 or more hours in total. Carol has contributed over 4,400 hours here since 1994 in many ways, including as a trustee and a Kirkwood Gardens volunteer.



*2008 Parsons Award recipient
volunteer Doris Phippen*

Congratulations also to Doris Phippen, the 2008 Parsons Award recipient. Doris has been an active volunteer since 1998. She completed docent training in 2000. She has been dedicated to keeping the Welcome Center gardens beautiful. Doris also cheerfully helps out as a bus greeter, with mailings, as a Trailhead Greeter, with the Howling Coyote Gift Shop, and at special events. Doris' name was chosen from these eligible volunteers: Jim Barry, Christine Bird, Richard Borton, Janice Byrne, Nina Chambers, Dorothy Chekas, Jessica Chisholm, Nancy Dailey, Nancy-Jane Duncan, Bea Edgar, Janice Elgin, Fran Fernandes, Karen Firmin, Allan Gavan, Eileen Gosselin, Patricia Heinz, Mari Hoell, Patricia James, Eva Karcher, Dan Kemp, Esther Marshall, Peggy Martin, Joan Mayerson, Connie Morrison, Lauren Moulis, Jamie Osborn, Winnie Oustucky, Diane Potter, Clare Read, Judy Ryerson, Jean Shlager, Julian Shlager, Judy Sniffen, Frank Stevens, Sydney Stewart, Carol Stewart, Shirley Stockwell, Fred Weisz, Jan Welch, Marcus White, Betsy Whitmore, Azanna Wishart, and Beverly Wood. The Parsons Award honors long-time volunteers Natalie and Don Parsons; each year a new recipient represents the spirit of volunteerism.

The volunteer appreciation display in the Trailhead Gallery, "Volunteers Complete the Picture," acknowledges cumulative volunteer hours and is updated annually to reflect year end totals. For 2007, these volunteers were honored for 200+ hours donated: Eric Ellingson, Allan Gavan, Mari Hoell, Patricia James, Cynthia Lathrop, John Lauzon, Helen Mathieson, Gary Robertson, Bruce Whitmore, and Barbara Widmer. Moving to 500+ hours were: Janice Byrne, Janet Cocchiaro, Karen Firmin, Patricia Heinz, Barbara Hendrick, Karin Karagozian, Doris Phippen, Diane Potter, Judy Sniffen, Lea Stewart, and Jan Welch. Joan Mayerson moved to the 2,000+ hour level. Congratulations and thank you all for your dedication!

These volunteers received the Presidential Volunteer Bronze Service Award for contributing between 100 and 249 hours in 2007: Jim Barry, Dot Chekas, Patti Heinz, Eva Karcher, Joan Mayerson, John McRae, Natalie Parsons, Diane Potter, Judy Sniffen, Carol Stewart, Lea Stewart, Sydney Stewart, Carol Thompson, Bruce Whitmore, and Beverly Wood.



Carol Thompson and Peter Wood

Would you like to join us as a volunteer?

Squam Lakes Natural Science Center offers opportunities to
explore 🌿 share 🌿 create 🌿 learn 🌿 grow

www.nhnature.org

NATURAL ADVENTURES

WINTER BIRD BANDING OPEN HOUSE

Saturday, January 3
9:00 a.m. - 12:00 p.m.

All ages

How much does a chickadee weigh, how long do they live, and how do we know? Find out by dropping by our annual Bird Banding Open House anytime between 9:00 a.m. and 12:00 noon to learn about bird banding – and help us in the process! Senior Naturalist Dave Erler has been banding and monitoring birds here for over 25 years to teach about the importance of banding and to give visitors the rare opportunity to touch and appreciate wild birds. Around the world, approximately 1.2 million birds are banded and about 85,000 are recovered each year! No reservations required.

Cost: No charge/member; \$5/non-member

OPENING THE GATES TO WINTER

Sunday, January 11 ■ 1:00 p.m. - 3:00 p.m.
Sunday, February 8 ■ 1:00 p.m. - 3:00 p.m.
Sunday, February 22 ■ 1:00 p.m. - 3:00 p.m.
Saturday, March 14 ■ 9:30 a.m. - 11:30 a.m.

All ages

Do you ever wonder what happens at the Science Center during the long, cold winter months? Come find out and see the exhibit animals in all their winter glory. A staff naturalist will guide your walk on the Gephart Exhibit Trail and discuss the many ways the animals are well adapted for life here in New Hampshire. Be ready to snowshoe and observe just how beautiful a wild animal's winter coat can be! Snowshoes are available for no extra fee.

Cost: \$8/member; \$10/non-member

BIRD IDENTIFICATION SERIES: WINTERING RAPTORS

Thursday, January 15 ■ 7:00 p.m. - 9:00 p.m. AND
Saturday, January 17 ■ 8:00 a.m. - 4:00 p.m.

Ages 14 to Adult

Join Executive Director Iain MacLeod for a two-part, in-depth workshop on the identification and ecology of New England wintering raptors. The program will include an indoor evening session at the Science Center on Thursday, and then a field trip on Saturday to the New Hampshire coast and the Parker River National Wildlife Refuge on Plum Island, Massachusetts to look for snowy owls, rough-legged hawks, bald eagles, northern harriers, and more.

Cost: \$45/member; \$55/non-member



WINTER TRACKS AND TREES

Saturday, January 24
10:00 a.m. - 12:00 p.m.

Ages 12 to Adult

Join Senior Naturalist Dave Erler for this two-hour trek around the Science Center grounds. We will look down and around for animal tracks and signs and up higher for clues the trees give us to help identify them in winter.

Cost: \$8/member; \$10/non-member

Reservations and advance payment required unless otherwise stated. Programs are subject to cancellation if minimum enrollment is not met.

THE FACT AND FOLKLORE

Saturday, January 31 ■ 10:00 a.m. - 11:30 a.m.
Ages 10 to Adult

What type of weather can we expect tomorrow, next week, or for the remainder of the winter? Historically, people looked to the natural world for clues, but today's meteorologists no longer rely on woollybears, woodchucks, and other folklore. With access to satellite images, computer models, and other technology, our ability to forecast the weather has vastly improved. Join us for a morning of discovery at Plymouth State University's state-of-the-art meteorology department as we compare technological forecasting with the most famous forecasters in nature.

Cost: \$7/member; \$9/non-member

BIRD IDENTIFICATION SERIES: WINTER COASTAL BIRDS

Thursday, February 12 ■ 7:00 p.m. - 9:00 p.m. AND
Saturday, February 14 ■ 8:00 a.m. - 4:00 p.m.

Ages 14 to Adult

Join Executive Director Iain MacLeod for a two-part, in-depth workshop on the identification and ecology of the variety of loons, grebes, ducks, gulls, and other seabirds that inhabit the New Hampshire coast during the winter months. The program will include an indoor evening session at the Science Center on Thursday and a field trip to the coast on Saturday. You will learn how to differentiate the three species of scoters from eiders and mergansers, get tips on identifying the half dozen or so gull species, and where to look for black guillemots, long-tailed ducks, and gannets offshore.

Cost: \$45/member; \$55/non-member



Red-tailed Hawk by David McNicholas

WHERE DID THEY GO?

Saturday, March 7 ■ 1:00 p.m. - 2:30 p.m.

Ages 6+

Have you ever wondered why you don't see snakes, turtles, woodchucks, or many insects out and about during the winter months? Come and learn why some animals are rarely (or never) seen when it's cold outside. We'll begin with a nature walk outdoors to search for signs of winter life, and then return inside to meet some of those illusive creatures up close!

Cost: \$7/member; \$9/non-member

NATURAL ADVENTURES

SCHOOL VACATION FUN FOR ALL AGES



WINTER BIRD BANDING

Wednesday, February 18 and 25 ■ 10:00 a.m. - 12:00 p.m.

All ages

How much does a chickadee weigh, how long do they live, and how do we know? Come find out during school vacation week – and help us in the process of bird banding! Senior Naturalist Dave Erler has been banding and monitoring for over 25 years to teach about the importance of banding and to give visitors the rare opportunity to touch and appreciate wild birds. Around the world, approximately 1.2 million birds are banded and about 85,000 are recovered each year!

Cost: \$7/member; \$9/non-member

WISE ABOUT WINTER

Friday, February 20 and 27 ■ 10:00 a.m. - 11:30 a.m.

Ages 6+

Do you find winter challenging? Wild animals have fascinating ways of adapting to winter, even some secrets that might make winter more fun for humans! Join us to become wise about winter through fun activities (inside and out), crafts, story-telling, and visits with live animals.

Cost: \$7/member; \$9/non-member

FIRST GUIDES YOUTH VOLUNTEER PROGRAM FOR TEENS 14 - 17

Training starts July 2009

Sign up by contacting Volunteer Coordinator Carol Raymond at 603-968-7194 x 22 or carol.raymond@nhnature.org

NEW!
Celebrate Night
Saturday, March 21
6:00 p.m. - 9:00 p.m.
All ages

Join us for a night of wonderful family fun to shake off the winter blues and welcome the spring season. There will be several activities to choose from including a campfire with storytelling, night sky watch (weather permitting), night hikes, and a "Creatures of the Night" live animal program. Forget about March cabin fever and come join the fun!

Cost: \$8/member; \$11/non-member

SAVE THE DATE!
CLEAN UP DAY
SAT., APRIL 25

FOR HOMESCHOOL STUDENTS

EARTH CYCLES

Second Thursday of the month, November through April

November 13, December 11, January 8,

February 12, March 12, and April 9

10:00 a.m. – 11:30 a.m.

Three age groups: 2-4, 4-6, and 7-10

This year the focus is on "Earth Cycles" and topics include rocks, weather, seasons, and water. Program offerings are aligned with the New Hampshire Science Framework.

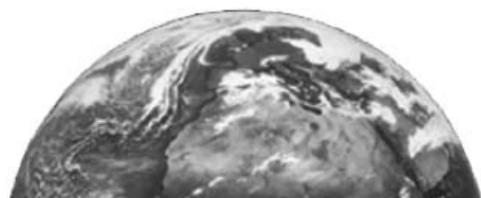
Cost \$9/member child; \$11/non-member child.

One adult must attend with children for free.

Each additional adult pays child fee.

Reserve all six programs for a discounted rate:

\$8/member child; \$10/non-member child per program.



GARDENER'S NOTEBOOK

GROWING IN A WINTER WONDERLAND

By Eric D'Aleo



With winter here and the plants “tucked” into their beds, with visions of warmer days dancing in their heads, there’s not much gardening to do, right? Well, actually, I’ll still be gardening. That’s right, I’ll be growing plants, but not at the rate that I was this summer. How will I accomplish this you might ask?

Well, it started last fall when my wife and I got our crop of fall spinach and lettuce into the ground a little late. This meant that by the time the cold and snow set in, the plants were still quite small and had stopped growing, but weren’t ready for harvesting. That’s when I decided to experiment and determine if I could get them to survive through the long, cold, dark winter. With any luck, the spinach and lettuce would stay alive and then revive as the days of sunlight lengthened. Then by early spring I’d have homegrown leafy greens at a time of year when you really crave something fresh.

I sowed the seeds in the soil inside my unheated green house, which is covered with a thin sheet of plastic and has wooden walls at its ends; but before you think that you need a greenhouse to accomplish this, unheated or otherwise, think again. According to the book by Elliot Coleman, *Four Season Harvest*, you don’t need a green house; all that’s required is a cold frame, ingenuity and a bit of trial and error. I built my cold frames earlier in the fall out of scrap lumber, using a wooden door frame with thin plastic windows as a cover. I set the cold frame over the small plants in the green house and that’s it, nothing else. Like many New Hampshire residents most of my time last winter was spent shoveling snow, over 120 inches. Each time after I cleared the snow off the greenhouse and shoveled it away from the doors I would sneak inside and peek under the cold frame to see how the little leafy greens were doing. Although a few didn’t look so good, most of them seemed fine. Between Thanksgiving and Valentine’s Day the plants didn’t grow at all but by St. Patrick’s Day the spinach had grown enough so we could add some fresh leaves to our salad. By the time spring arrived we had lettuce and spinach from our garden making up most of our salads.

There are various ways a cold frame can be used; standing on or partially set into the ground, it can be set into a manure pile that is decomposing, with a layer of soil on top, so that the decomposing manure will release heat and nutrients into the soil within the cold frame. Leaves, straw and hay can be used to insulate the cold frame also and with a southern exposure cold hardy plants can survive and even grow at this time of year.

So, I don’t know what gardening you’ll be doing this winter, but I’ll be strapping on my snowshoes to check on a few more “experiments” that I want to try.

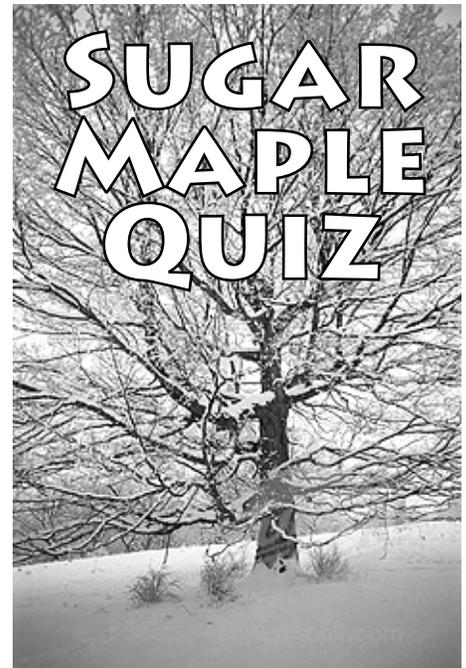
See the following sources for more about cold frames and “4 season gardening.”

Four Season Harvest by Elliot Coleman, Chelsea Green, 1992, second edition 1999

<http://extension.missouri.edu/xplor/agguides/hort/g06965.htm>

<http://www.organicgardening.com/feature/0,7518,s1-5-19-106,00.html>

<http://www.motherearthnews.com/Organic-Gardening/2007-12-01/Garden-with-Cold-Frames.aspx>



- Who were the first people to make maple syrup?
 - Pioneers
 - Native Americans
 - Europeans
- _____ is the name of the process where plants use energy from the sun to make sugars.
- True or False?** In late winter, sap in sugar maples stops flowing when air temperatures are no longer freezing at night and thawing by day.
- During winter, the sugars in sugar maple trees are stored in the
 - roots
 - sap
 - wood
- Approximately how many gallons of sap does it take to make one gallon of syrup?
 - 20
 - 40
 - 60

Answers: 1. B 2. Photosynthesis 3. True 4. C 5. B

*Gardener's Notebook and Kirkwood Gardens
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NATURALIST'S CORNER

SIGNS OF THE TIMES

By Beth Moore

We have all heard the phrase “climate change” before. We hear about it when we turn on our televisions and when we see politicians debating over who has the better plan. It rears its head in documentaries shown on public stations. People talk about it over dinners, in meetings, and at work, and on the streets. It is a major issue for our current time, but to what extent? Many times when I read an article about climate change, it addresses melting Arctic glaciers and rising sea levels. I have read about the devastating fate of the polar bears and musk ox of the Arctic tundra. I have read that it may result in the bleaching (and thus demise) of coral reefs and that over time, rising temperatures may adversely affect the migrations of birds and whales. But I live in central New Hampshire. There are no polar bears or glaciers in my backyard and if the sea level rises, I am a good distance away. So does this mean that I am safe from the effects of climate change? The answer is No. Climate change is a global concern.

Climate experts predict dramatic changes to the character of New Hampshire's forests. Warmer temperatures may eradicate some tree species, such as beech, maples, and hemlocks, and pests and pathogens (such as the pathogen that took the elm trees) may become more prevalent. Other northern hardwoods, along with the beautiful fall colors they produce, may migrate northward 100 – 300 miles, while southern species such as oaks and hickory may move in. Potential summer droughts may cause some trees to drop their leaves prematurely, resulting in a less impressive fall display. Also threatened are two high elevation communities. The first is the northern spruce/fir forests, home to the Bicknell's thrush and snowshoe hare. The second is the treeless alpine tundra of the White Mountains, home to the alpine garden.

Climate models predict warmer summers for New Hampshire. We currently average ten days per summer above 90 degrees. If climate change continues at its current rate, there might be 70 such days per summer by the end of the century. Higher temperatures, along with increased “greenhouse gas” emissions may result in increased pollen production and a corresponding increase in seasonal related allergies. These occurrences represent just a small portion of the changes we might face.

So if you love New Hampshire for what it is, a beautifully diverse ecological rarity, then I encourage you to listen to what the Earth is telling us. To slow climate change, something needs to change. There are small things that we can do in our everyday lives to be part of the solution and protect what we have grown to love. Whether you choose to drive a little less, re-use bags, turn off the lights, choose energy efficient appliances, or simply spread the word, you can help keep New Hampshire the way we love it.

GREEN FACT

Here is one small thing that will make a big difference!

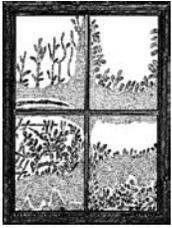
Here are some tips for green housecleaning:

- Make your own cleaners. Household items like baking soda, lemon juice, vinegar, and club soda can be used to clean everything from carpets to toilet bowls.
- Use old clothing and sheets for dusting and cleaning rags instead of paper towels.
- Avoid cleaners with phosphates. Phosphates are in many cleaners, such as dishwashing liquids, but their use promotes rapid algae growth, which pollutes the water supply.
- Replace mothballs with a more natural alternative. Try cheesecloth-wrapped cinnamon sticks, bay leaves, or whole cloves.
- Eliminate chemical fabric softeners by adding ¼ cup of vinegar to your washing machine's rinse cycle.
- Let your houseplants do the cleaning! Some houseplants – such as Boston ferns, English ivy, rubber plants, and peace lilies – can help clean the air indoors by absorbing toxic chemicals.

WISH LIST

- 2-quart plastic pots for garden plants
- “Garden treasures” such as lawn and garden tools, ornaments, and accessories
- Canister vacuum with attachments
- Kitchen and Bath Hand Towels
- Large coolers
- Frequent flyer miles
- Baby strollers
- Wheelchair

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OPENING A WINDOW TO THE NATURAL WORLD

Earlier this fall we sent you a request for a gift to the 2008 Annual Fund, an important component of our yearly operating budget. This year's goal is \$260,000. The wonderful support we receive every year at this time from individuals, foundations, and businesses is critical to our capacity to carry out our mission *to advance understanding of ecology by exploring New Hampshire's natural world*. Please respond as generously as you can again this year.

One way to increase your Annual Fund contribution is to participate in a matching gift program through your employer. As a 501(c)(3) nonprofit, Squam Lakes Natural Science Center qualifies for many matching gift programs. For example, if you make a \$100 gift, your company may double your gift! Check with your employer to see if they have a matching gift program, complete the forms, and send the form here with your donation.

For those of you age 70 ½ or older, the reinstated federal Pension Protection Act provides an extraordinary giving opportunity. Any individual can give up to \$100,000 in 2008 and an additional \$100,000 in 2009 from his/her traditional or Roth IRA. A spouse can give an equal amount. The provision applies to gifts made from January 1, 2008 through December 31, 2009. Certain conditions apply; we recommend you consult your tax professional or financial planner to determine what is best for you. The Squam Lakes Natural Science Center is a 501(c)(3) non-profit organization and our tax id number is 02-0271824.

If you have not already sent your gift, please consider doing so now – or donate online at www.nhnature.org. Thank you for your support!

Opening a Window to the Natural World is written by Development and Communications Director Janet Robertson. For more information, contact Janet at 603-968-7194 x 12 or janet.robertson@nhnature.org.

NATURALIST'S LEGACY SOCIETY

If you have already named the Squam Lakes Natural Science Center through your will or other estate plans, please let us know. As a member of the Naturalist's Legacy Society, you will be invited to donor recognition events and recognized in the Annual Report, unless you prefer to remain anonymous. Recognizing planned giving donors allows us to express our appreciation and may also inspire others to give support through their own estate plans.

We are grateful for these memorial and honorary gifts received from July 1 through September 30, 2008:

In memory of James Alvord
Patricia Lukenbill

In memory of Jerome J. D'Arcy
Sally and Paul Kiely
Anne and Alan Posnack
Jeanne and Philip Sullivan

In honor of Arabella Dane
Sally Crow
Martha Daniels
Alice B. Duff
Camilla Lee

In memory of Mary Smith Denison
Mr. and Mrs. William F. Dewey, Jr.

In honor of Marv Diamond
Linda and Bill Lee

In honor of Lydia Eaton's birthday
Martha Deering and John Brock

In honor of the marriage of Niki and Bond Fletcher
Lorna and Stephen Gasperoni
Susanne and Tony Salvo

In honor of Wade Fowler's birthday
George Carr

In honor of Gary Gagne's birthday
Rebecca and Joseph French

In honor of Anne and George Levin
Carol and Robert Mayer

In memory of Sarah Stevens MacMillan
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Mr. and Mrs. Dennis Rood
Mr. and Mrs. Jack Manning

In memory of William Schultz
Lorraine and Robert Kingsbury

In memory of Greg Smith
Barbara and Ronald Geigle

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TRAIL'S END

In early October we held the regular quarterly meeting of the “Troika,” the Executive Directors and Chairs of the Boards of Trustees of, respectively, the Squam Lakes Association (SLA), the Squam Lakes Conservation Society (SLSC), and the Squam Lakes Natural Science Center. Parenthetically, I suppose we call it the “Troika” rather than the “Triumvirate” because none of us knows the Russian for “four” so we are limited to the three entities that are at the heart of the Squam Lakes! Besides, three groups is a manageable number.

Anyway, these Troika meetings are immensely useful in making sure that we do not trip over one another in our endeavors to make Squam an even more wonderful place. The issues discussed range from the simple (such as Iain bringing to the attention of the SLA and SLCS the recent BBC video “Summer on Golden Pond” that was airing at the Howling Coyote Gift Shop during October) to the more complex (such as coordinating efforts to promote this winter’s animal tracking classes, a repeat of last year’s exciting activities – aided by all the snow! – led by Susan Morse, and the SLA and SLNSC working together to reestablish the Moon Island nature trail). Perhaps the most sterling audience, to date, of our joint efforts, was the all day seminar conducted on September 5, 2008, at Plymouth State University, by Chuck Loring, “Building a Dynamic Board.” We all came away from that workshop immensely invigorated and with a long list of steps to improve our Board Governance – watch this space.

Among the issues to be discussed at our next meeting, in January 2009, will be whether to capitalize on this June’s successful Squam BioBlitz (another triumphant product of the Troika’s coordination efforts) by making it an annual event, holding a second BioBlitz in 2009, or making it bi-annual, waiting until 2010. It’s certainly a lot of work for all SLNSC staff involved, especially Iain, not to mention the scientists; but, as those of you who participated can vouch, it’s great fun. Any thoughts, anyone?

Finally, a common concern of all three Troika organizations was how the current economy will affect annual giving. As you know, the Science Center is dependent on the Annual Fund and other fundraising for a major portion of its budget – about one quarter in 2008. Other organizations around the lake are likewise dependent on your generosity. The Troika is immensely cognizant of the fact that we are all “fishing in the same waters” so we struggle hard to coordinate our requests. Nonetheless, our need, and dependence, is great – so, please be generous and thank you.

*Trail's End is written by Peter M. Wood, Chairman of the SLNSC Board of Trustees.
You may contact Peter at 603-968-7194 x 27 or peter.wood@nhnature.org.*

THINK MAPLE *continued from page 1*

sap flow are day temperatures around 40 degrees Fahrenheit with night temperatures dropping to the low 20’s Fahrenheit. In good circumstances, the maple season can last for six weeks. During this amazing process, maple buds get the sugar they need to grow into leaves and people share in the bounty!

Sugar maples (*Acer saccharum*) have a life beyond syrup even though the species name “saccharum” means sugar. “Acer” refers to trees having winged fruit and as children, I am sure many of us have made descending helicopters of the double winged maple seeds or samara. Then up come the myriad of tiny maples reaching for a place in the sun. Over the summer, mature maples shade our lawns and houses and make nesting spots for birds like orioles and robins. In autumn comes the season of splendor as maples turn our hillsides into rolling waves of yellow, orange, and red. These sugar maples are a specialized feature of the eastern Canada and United States region, a gem found only in this part of the world, with just the right climatic conditions. As maples age, woodpeckers drum territorial rhythms on dead branches and owls nest in holes along the trunk. Inside our own homes, the dense hard wood of maples has been transformed into sturdy furniture and flooring or provides gentle warmth from our wood stoves. It is truly a tree for all seasons!

Sugar maples can also play the role of the canary in the coal mine, telling us about safe environmental conditions. These magnificent trees have been showing signs of stress for a number of reasons and now may be the time to listen to the trees. One

major change affecting trees in general is global warming but sugar maples are specifically tied to the alternating freezing night temperatures with day temperatures in the vicinity of 40 degrees Fahrenheit for the movement of sugary sap in their systems. Researchers at the University of Vermont’s Proctor Maple Research Center studied the effects of global warming on the timing of sap production in the northeast and found that “the sugaring season is starting significantly earlier than 40 years ago and the duration has decreased by an average of 10%.” A warming climate could make New Hampshire less hospitable to sugar maples and change the face of the forest with more oaks, hickory, and southern pines dominating the forest landscape. Air pollution, particularly chemicals from burning coal for energy and pollutants from cars, produces acid rain, having an impact on sugar maples in insidious ways. Acid rain can change soil chemistry, affecting the intake of nutrients and water by trees. In addition, organisms like mycorrhiza (fungus) and other microscopic decomposers can die affecting absorption and recycling of nutrients. Weakened sugar maples become more susceptible to additional stresses like insect infestations, soil compaction, and road salt.

Chief Seattle said in 1855, “All things are connected like the blood that unites us. We did not weave the web of life. We are merely a strand in it. Whatever we do to the web we do to ourselves.” As we look up into the spreading branches of a huge maple tree, being linked to our environment is both a challenge and a privilege. Our blood circulates; its sap flows. Finding our own roots and connection to a sugar maple could be a very healthy pursuit.

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