



LIFE ON THE TOP

By Margaret Gillespie, Illustration by Cheryl Johnson



How brave would you be? Last January, my dog Andy and I were exploring a shrubby area near a wetland by walking along snowmobile trails – a great way to stay on top of the snow for both of us. We noticed the well worn travel paths of snowshoe hares and the occasional bounding tracks of fisher alongside. Nearby, fresh snow had weighted down the lower branches of small hemlocks, forming hiding places beneath. We passed one such hemlock right next to the trail and around the next corner arrived at a cabin at the trail's end. Back we came, Andy leading as usual. When I reached the young hemlock again, out popped a snowshoe hare, calculated leaps carrying it easily away from us. That snowshoe hare had stayed frozen in place twice, just inches away from two potential predators! These hares of the northern woods are not brave, but rather amazingly adapted to survive the seasons and the efforts of nature's hunters.

Snowshoe hares, *Lepus americanus*, along with rabbits, are from the order Lagomorpha, Greek for “hare-shaped.” While similar, there are distinct differences between hares and rabbits and a major contrast is seen in their young. Newborn hares, called leverets, are born fully furred, with eyes open, and ready for action whereas rabbits are born with minimal fur, eyes closed, and in need of immediate warmth and care. Hares are not in the same order as rodents (*Rodentia*), although superficially they may appear closely related. Both hares and rodents are herbivores and have large ever-growing incisors. For those interested in skull identification, hares also possess two small peg-teeth behind their upper incisors, vestigial teeth, without a real function. Rodents, like squirrels and beavers are gnawers, using their teeth to open an acorn or take down trees. In contrast, hares nip off twigs at a 45 degree angle and in winter also eat buds, tree seedlings, and tender bark.

Which came first – the snowshoe or the snowshoe hare? Since lagomorphs have been in North America for millions of years, the answer is clear. However, there is much to learn from nature and perhaps Native Americans observed activities of hares on the snow's surface when they developed their own snowshoes. In the case of snowshoe hares, life on the top is thanks to exceptionally large hind feet, which in winter grow an inch of fur on the bottom, further enhancing their size and insulation value. On soft snow, hares can spread their four long toes to increase surface area. They can even put all their weight on their hind feet while they stand up to nibble high twigs. By maintaining trails to and from feeding and resting areas over their three to 25 acre home range, snowshoe hares can be prepared for a quick escape.

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FORGING TRAILS

This past summer I had the pleasure of leading a weekend-long trip to New Hampshire's North Woods. Part of the trip included a pontoon boat tour of Lake Umbagog – a gem of a lake that straddles the Maine state line near Errol and is now almost entirely protected by National Wildlife Refuge status.

At the confluence of the Magalloway River (which flows into the lake) and the Androscoggin River (which flows out) is an area known as Leonard Marsh. One of the landmarks of this beautiful spot is a huge dead white pine – a century-old gray giant whose upper branches reach seventy feet above the shallow waters. This is a tree that I know well. Back in 1988, the year I arrived in New Hampshire, I visited Umbagog and canoed up the Androscoggin with biologists from New Hampshire Audubon to view a very special sight – a pair of Bald Eagles. This was the first

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FORGING TRAILS *continued from page 1*

pair of eagles to nest in New Hampshire in more than forty years and they had chosen this spectacular setting, and this impressive tree as their home. This was a pioneering pair – the first post-DDT-era nesting attempt in the state. What made their choice to use this tree really interesting is that the last pair of Bald Eagles to nest in New Hampshire in 1945 used the very same tree!

This summer the tree was nest-less; the pair had moved across the lake – and across the border – and was raising three eaglets in an eyrie in a live pine tree on Pine Point in Maine, but the male eagle was perched in the old nest tree scanning the entire lake and the Rangeley Mountains beyond. This tree is obviously a magnet for Bald Eagles; a landmark that generations of eagles have used.

Being faithful to a particular nesting site (known as site fidelity) is not unique to Bald Eagles. I know of Osprey nests in Scotland in the same tree for more than 50 years – used every year by successive pairs – truly an ancestral pile!

Of course trees have a limited lifespan, and a single tree can only stand for so long before it rots and tumbles. Eyries on cliff ledges date back even longer. In my youth I visited Golden Eagle eyries in the Outer Hebrides of Scotland that generations of shepherds had known. Perhaps eagles had nested there when Norse settlers had moored their longboats in the sea lochs below these crags. Perhaps they date back to just after the great ice shields receded and revealed the fresh granite carvings on the landscape. I recently read about a Golden Eagle nest in Montana that stands more than twenty one feet tall. Carbon-dating of sticks at the base of this enormous structure came from a tree that grew nearly 600 years ago.

Researchers recently found a still-used Gyrfalcon nest in Greenland that is 2,500 years old, making it the oldest raptor nest yet found. Nearby were three other nests, each over 1,000 years old. Kurt Burnham of the Edward Grey Institute of Field Ornithology at the University of Oxford reported on his findings to the BBC in early June. Burnham and his colleagues carbon-dated guano and other debris from thirteen nests in central-west Greenland. The date range of one nest at 2,360-2,740 years old surprised even the researchers. The oldest feather came from a Gyrfalcon that lived 670 years ago. The full study, co-authored by Kurt Burnham, William Burnham, and Ian Newton, was published online in advance of the print edition of *Ibis*. You can view the paper at http://www.zoo.ox.ac.uk/egi/PDFs/Burnham%20et%20al_2009.pdf.

It is amazing to think that Gyrfalcons were nesting on those same cliffs at least as far back as the time of the Roman Empire 500 BC. Now that's a long-term lease!

Forging Trails is written by Executive Director Iain MacLeod.

You may contact Iain at 603-968-7194 x 23 or iain.macleod@nhnature.org.

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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 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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BRIAN EATON FINANCE DIRECTOR



Tell us about your background.

I grew up in Central Vermont and graduated from the University of Vermont in 1989 with a Bachelors degree in Professional Accounting. After college I worked in Public Accounting for two years, and then I was a Financial Analyst and Accounting Supervisor for a large book and journal manufacturer in Ann Arbor,

Michigan for six years. After that I was the Controller for Castle Springs and Castle-in-the-Clouds in Moultonborough for seven years.

When was your first visit to the Science Center? What about it inspired you to become more involved?

I first visited the Science Center in 1994, scouting locations for a wedding reception. My wife and I were married on Chocorua Island in July 1995 and held our reception under a big tent on the lawn that the Life Underground Exhibit now occupies. Having had a soft spot for the Science Center since then, I jumped at the opportunity to work here when the position of Financial Coordinator opened up in 2004. My common interests about the outdoors and wildlife made the job a perfect fit.

Tell us about your hobbies and interests.

As most of my co-workers know, I am a die-hard Red Sox and Celtics fan (really they are just a hobby – not an obsession!) I also enjoy coaching youth sports and feel fortunate to have the support and flexibility that working at the Science Center allows. I really enjoy being with my family

and spending time on and around Squam Lake. Fishing (ice fishing and open water), snow sports of all kinds, and travel are also some of my favorite things to do.

In your opinion, what are some changes the Science Center needs to make in order to be successful in the future?

We don't necessarily need to make changes, but the continued success of the Science Center is based upon the same principles that have made it successful so far: Attracting and retaining high quality staff and volunteers, evolving all aspects of the business to meet the desires of our public audience, and nurturing the support of our generous supporters and members.

Do you have a favorite animal or exhibit at the Science Center?

The Mountain Lions have such confident and powerful demeanors, it is impossible not to admire them. Plus, I'm a University of Vermont Catamount alumnus, so it's – Go Cats Go!

Do you have a favorite childhood memory that involves nature?

I used to really enjoy making puddles into giant ponds in my backyard as a kid. Give me a shovel and some rubber boots and I was happy. Maybe it was because my Dad owned an excavating business, but it was really cool, diverting streams and springs into small lakes. This is probably why I also admire beavers and the work they do!

What is the best thing about your job?

My job is especially rewarding because of the people that I get to interact with everyday such as co-workers, trustees, volunteers, and the public. The Science Center attracts such a great mix of thoughtful, educated, and diverse personalities so there is never a dull moment! I also really love hearing the kids pull up by the busload outside my office window. You can tell by the deafening roar how excited they are to be here.

How would your friends describe you? How would you describe yourself?

I would hope that people think of me as friendly, dedicated, and loyal. I like to be positive and upbeat because it seems like life is more fun that way!

NEWSBRIEFS

- ◆ This year's Autumn Festival was well-attended on September 27 and generously sponsored by Community Guaranty Saving Bank. The event featured Lesley Smith's Theater of Life Puppets starring Sammy Snail.
- ◆ Halloween Hoot N Howl was enjoyed by over 200 resilient people on a rainy Saturday night October 24. Four live skits, including "Nanny Nature" and "Vote for Dragonfly for Animal of the Year" enchanted the costumed guests. Special thanks to Girls Scout Troops 10896, 12269, 10093, and 10062 from Moultonborough 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: Eric D'Aleo, Dunkin Donuts, Plymouth; Golden Pond Country Store, Holderness; Hannaford Supermarket, Plymouth; Holderness General Store, Holderness; Moulton Farm, Meredith; Shaw's, Gilford; Tootsie Roll Industries; Longview Farms, Plymouth.

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Moultonborough Girl Scout troops with the pumpkins they carved for Halloween Hoot N Howl



NATURAL ADVENTURES



COYOTE CAPERS

Saturday, December 12
10:00 - 11:30 a.m. • Ages 6+



Photo by Rosemary Conroy

Are “wily coyotes” really that clever? Why do they howl and where do they live? The eastern coyote is a relative newcomer to New Hampshire and so we will delve into some of the mysteries about them. Join us to learn about coyotes with plenty of information, story-telling, and a visit with our new one-year old coyote.

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

WINTER BIRD BANDING OPEN HOUSE

Saturday, January 2
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 even lend a hand in the process! Senior Naturalist Dave Erler has been banding and monitoring birds here for over 25 years in order to teach about the importance of banding and give visitors the rare opportunity to touch and more fully appreciate wild birds. Adult must accompany children. No reservations required.

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

WINTER WAYS

Wednesday, January 20
1:00 - 2:30 p.m. • Ages 6+

Winter can be a challenging time for wild animals. Between staying warm, finding food, and traveling through snow, animals have unique ways to survive New Hampshire’s coldest months. Join Naturalist Beth Moore to learn some of their tricks, through hands-on activities and a visit with live animals.

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

OPENING THE GATES TO WINTER

Sunday, January 17
1:00 - 3:00 p.m.

Sunday, February 7
1:00 - 3:00 p.m.

Saturday, February 20
10:00 a.m. - 12:00 p.m.

Saturday, February 27
1:00 - 3:00 p.m.

Saturday, March 13
10:00 a.m. - 12 p.m.

All ages

Do you ever wonder what happens to the animals at the Science Center during the long, cold winter months? Come see the exhibit animals in all their winter glory. A staff naturalist will guide a 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 (conditions permitting) and see how beautiful a wild animal’s winter coat can be! Snowshoes are available at no extra fee.

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

CREATURES OF SNOW

Saturday, January 23
9:30 - 11:30 a.m. • Ages 6+



It’s cold and the ground is covered with a thick blanket of white snow! What a great time to get out there and play! Remember your childhood building a snow fort or the obligatory snowman, but what about a snake, a porcupine, or other creatures made of snow? Come for the morning with your children, grandchildren, or as a “grown up” kid and dig, burrow, crawl, and climb over piles of snow to create several creatures using hand tools, buckets, natural materials, and your own creativity. Who knows what cool animals will emerge? We will warm up inside with hot chocolate and marshmallow snowmen afterward. Adult must accompany children.

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

WISE ABOUT GROUNDHOGS

Saturday, January 30
10:00 - 11:30 a.m. • Ages 6+



Get ready to celebrate Groundhog’s Day on February 2 by learning the explanations to many groundhog puzzles! How are groundhogs and woodchucks related? What do groundhogs really do on Groundhog’s Day? Where do they go and why do they disappear in winter? Learn the answers to these questions and more through games, crafts, story-telling, an excursion into the great outdoors, and a visit with a live groundhog.

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

WINTER BIRD BANDING

Tuesday, February 23 • 9:30 - 11:30 a.m.
Thursday, February 25 • 9:30 - 11:30 a.m.

Ages 6+

Around the world, approximately 1.2 million birds are banded and about 85,000 are recovered each year! Senior Naturalist Dave Erler has been banding and monitoring birds at the Science Center’s winter feeders for more than 25 years. Learn why bird banding is an important tool for scientists and enjoy a rare chance to touch and appreciate wild birds up close as you see how birds are banded and help in the process! Adult must accompany children.

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

WILD WINTER

Friday, February 26
10:00 - 11:30 a.m. • Ages 7+

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

Reservations and advance payment required unless otherwise stated.



SPECIAL EVENTS



PROGRAMS FOR HOME SCHOOL STUDENTS

BE A SCIENTIST!

Ages 7-10

November 12: Biology

December 10: Dendrology

January 14: Ecology

February 11: Ornithology

March 11: Mammalogy

April 8: Entomology

10:00 – 11:30 a.m.

There are many different types of scientists – from Dendrologists to Ornithologists and don't forget Entomologists too! In this six-session series students will develop and test predictions and participate in and conduct experiments. Students will also learn how to use keys and books to identify the many living and non-living ecosystem components that make New Hampshire so unique. Each month the students will investigate a different scientific field of study and then become the scientists themselves. Program offerings are aligned with the New Hampshire Science Framework. One adult must attend with children for free. Each additional adult pays child fee.

*Cost \$9/member child; \$11/non-member child
Reserve all six programs for a discounted rate: \$8/
member child; \$10/non-member child per program.*

USING OUR FIVE SENSES

Ages 4-6

November 12: Touch

December 10: Smell

January 14: Sound

February 11: Sight

March 11: Taste

April 8: Celebrate All Five Senses!

10:00 – 11:30 a.m.

How do we understand and interpret the world? With our senses of course! Students will learn all about their five senses and then put them to work in this six-session series. Students will explore what types of information we get from each of our five senses and how important each sense is. We'll also review how animals put their five senses to use. Each month we will focus on a different sense and on the last day we will celebrate all of them! Program offerings are aligned with the New Hampshire Science Framework. One adult must attend with children for free. Each additional adult pays child fee.

*Cost \$9/member child; \$11/non-member child
Reserve all six programs for a discounted rate: \$8/
member child; \$10/non-member child per program.*

Science Center Nature Tour

Scotland's Northern Isles: Orkney and Shetland

June 2 – 11, 2010

Join Iain MacLeod for a spectacular trip to Scotland's most northern lands – the remote islands of Orkney and Shetland. This 11-day trip explores the wildlife and history of these beautiful islands. Highlights will include spectacular seabird colonies – including more Puffins that you can shake a stick at, Otters, Grey Seals, a night-time excursion to the island of Mousa to watch Storm Petrels in the Iron Age broch, and a visit to Skara Brae, Europe's most complete Neolithic village. View an illustrated itinerary at http://www.nhnature.org/pdf/orkney_shetland_2010.pdf

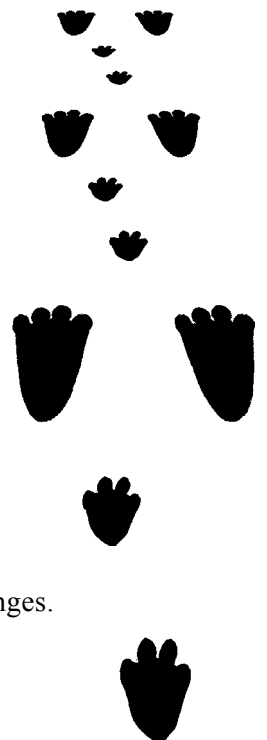
Cost: \$4,500 (double room occupancy) \$300 additional supplement for single room (includes roundtrip airfare from Boston to Aberdeen, all accommodations, meals, ferry and van transportation).



SNOWSHOE HARE QUIZ

- Which of these animals is NOT closely related to the snowshoe hare?
 - Eastern cottontail rabbit
 - Groundhog
 - Pika
- Male and female snowshoe hares are called _____.
 - rams and ewes
 - bucks and does
 - boars and sows
- Why do snowshoe hares NOT turn white in South Carolina?
- What other New Hampshire mammal turns white in winter?
- True or False? Snowshoe hares change color in response to seasonal temperature changes.

*Answers: 1. B 2. B
3. Trick question! They do not live that far south.
4. Weasels 5. F. It's day length.*



NATURALIST'S CORNER

GOLDENROD BALL GALLS

by Dave Erler

Have you ever noticed round ball-like growths on dried brown plant stems sticking through the snow pack in fields and meadows? What you were seeing was more than likely goldenrod ball galls. Goldenrod ball galls are a fascinating example of a plant and insect adaptation. The whole process begins in early spring as goldenrod plants begin a new year of growth. A small male fly (5mm) called a goldenrod gall fly (*Eurosa solidaginis*) walks up and down the goldenrod stem until he chooses a bud. There, he patiently waits until a female approaches. On the approach of the female he does a little dance, the couple mate, and the female walks away to find a spot to lay eggs. The eggs are actually injected into the goldenrod plant stem via the female's ovipositor. Since adult gall flies are unable to eat, they perish within a few days of accomplishing their reproductive mission.

The eggs hatch in about 10 days and the fly larvae immediately begin to eat from within the rapidly growing goldenrod stem. As they eat, a chemical in their saliva causes the plant to grow abnormally, resulting in the ball-shaped gall. The larvae get everything they need: food, water, and shelter; thanks to the growing goldenrod plant and the gall continues to grow larger, sometimes reaching the size of a golf ball. Late in the season, the larvae eat a tunnel that will serve as an escape hatch when it comes time to leave the gall. With winter approaching, the larvae retreat to the center of the gall and produce a chemical that keeps them from freezing and drying in the cold. In spring, the larvae pupate prior to metamorphosing into adults. The adults escape the gall by breaking through the thin layer of plant cells covering the exit tunnel previously created by the larvae. Adult goldenrod gall flies are weak fliers so they generally do not wander far to a new goldenrod plant to begin the cycle again.

Gall formation does not normally affect the overall health of the goldenrod plant. The goldenrod gall fly, however, depends entirely on just a couple of species of goldenrod. Although the goldenrod gall fly larvae are protected by the gall from most potential predators, they are still vulnerable. At least one species of beetle and two species of wasps seek out goldenrod galls and in turn eat or parasitize the fly larvae. Downy Woodpeckers and Black-capped Chickadees sometimes open wintering goldenrod ball galls to extract the larvae. Even humans get into the act. My own introduction to goldenrod ball galls came as a seven- or eight-year-old when I learned that the larvae could be used to catch other food. Growing up in Minnesota, where digging worms in the winter was downright impossible, I was shown that the larvae could be put on a small hook and used as bait for ice fishing. Even an unopened ball gall could be rigged as an impromptu fishing bobber. To this day, whenever I see a goldenrod ball gall, it brings back memories of frigid mornings looking for round brown balls sticking up through the snow.



Gardener's Notebook and Kirkwood Gardens are sponsored by the Belknap Landscape Company, Inc.

www.belknaplandscape.com



GARDENER'S NOTEBOOK

YOU'RE DOING WHAT?

By *Eric D'Aleo*

It's winter in New Hampshire and often that means snow ... snow ... and more snow. If it's not snowing, the cold chill of the air and the wintery wind keeps us indoors and away from the garden. Well ... not necessarily. Even though the vibrant colors of cardinal flowers in bloom or the bed of coneflowers that attracted a myriad of butterflies may have disappeared, your garden is still an area worth exploring



Eric D'Aleo

in winter. A number of gardeners are also avid photographers delighting in recording images of blooms and wildlife attracted to their gardens during the summer. But even in the depths of winter there are many visual feasts for the gardener as well as the photographer. When the weather gets cold and the snow begins to fly, I continue to visit my gardens and often find what nature has been hiding under the mantle of foliage all summer long. Bird nests that were invisible can now be seen and with a crown of newly fallen snow look quite beautiful. The bright red berries of winterberry holly are a reminder that not all the color has left my garden and they look striking against the snow. In the morning sun, the seed heads of many grasses covered with snow or hoar frost reveal a delicate and fleeting beauty that passes quickly. Even the hard, granite edge of a rock in a stone wall can contrast sharply with the light, powdery snow bank that hugs its dark foundation. Ice can form around the stems of cattails and reeds in my pond, creating interesting patterns to discover before snow covers its surface. These along with the changing face of the snow itself can provide interesting patterns on its surface, from leaves and branches etching its face to shrubs, rocks, and garden ornaments pushing up from below. All this can make a winter garden a quiet place of subtle beauty. Who knows ... while you're out enjoying a quiet, warm winter afternoon in your garden you may find a surprise – a hardy green perennial waiting to break the shell of its snowy prison to rise toward the warm sun.

Save The Dates!

CLEAN UP DAY

SATURDAY, APRIL 24

SQUAM BIOBLITZ

SATURDAY, MAY 22

GREEN FACT

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

The holiday season is upon us – a time to celebrate with family and friends, give thanks, and look forward to a new year. Here are a few tips to simplify the holidays and go green.

- Make your own decorations with natural items using evergreens for garlands and wreaths, accent with nuts, twigs, berries, and dried flowers.
- Save your decorations and reuse next year. Or buy decorations from resale shops like Goodwill, at garage sales or antique shops or local craft fairs.
- Use LED lights, which use 80 percent less energy and last 20 years.
- Shop locally and support your local economy, which also cuts down on waste from packaging and shipping products. Remember to use reusable bags instead of plastic – keep them in your car.
- Visit www.catalogchoice.org to reduce unwanted catalog mailings and request electronic catalogs.
- Use recyclable materials for shipping – recycle cardboard boxes and use newspaper or shredded paper for packing supplies.
- Be creative with gift wrap – children can decorate paper bags and turn last year's holiday cards into gift tags.
- Donate unwanted items or food to local food banks or homeless shelters.

HAPPY HOLIDAYS!

BUSINESS INVEST IN EDUCATION

In addition to Annual Fund gifts, many 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. We are grateful for this vital community support.

We thank these businesses, which purchased memberships in 2009: Belknap Landscape Company, Grappone Automotive Group, Law Warehouses, Pike Industries, and Rockywold-Deephaven Camps.

We are grateful to these businesses, which provided support in 2009 through sponsorships or for the summer gala: Belknap Landscape Company, Common Man Restaurant, Community Guaranty Savings Bank, Conover Art, Cormack Construction, Cross Insurance Agency, Bill Driscoll Associates, MegaPrint, New Hampshire Colonials Realty, New Hampshire Electric Co-op Foundation, Public Service of New Hampshire, Rockywold-Deephaven Camps, 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.

In-kind gifts were received from these businesses in 2009: Belknap Landscape Company, Bishop & Davis Builders, Bob's Shurfine Market, Bound Tree Medical Company, Charles River Laboratories, Coca Cola Bottling Company of New England, Common Man Restaurant, The Country Landing, Dockside Florist, Donovan Tree Experts, Plymouth Dunkin Donuts, Forever Green, Golden Pond Country Store, Hannaford Supermarket, Hart's Turkey Farm Restaurant, Hitching Post Primitives, Holderness General Store, Home Comfort, Home Depot, Lakes Region Tent & Event, Longhaul Farm at Squam Lake, Lowe's, Moulton Farm, Nature's Way Studio, Oglethorpes, Ox-K Farm, Plymouth Animal Hospital, Park Plaza Hotel, Precision Lumber, Shaw's Supermarket, Silver Run Bath Company, Spider Web Gardens, Squam Boat Livery, Squam Lake Inn, Stonyfield Farm, Tanger Outlet Centers, Tootsie Roll Industries, True Colors Print & Design, Van Berkum Nursery, Venture Print, Wal-Mart, Walter's Basin, White Mountain Country Club, Yeaton Agway Services, and Your Neighborhood Florist.

For more information about ways you can support Squam Lakes Natural Science Center, please visit our website at

www.nhnature.org

WISH LIST

New (energy star) refrigerator

Infant and Child PFD's

Video Camera

York rake and winch for tractor

Motorized "Rascal" Wheelchair in good condition (four wheels)

Food processor for animal care

Little Tyke or Playskool plastic toys for animal care

Answering machine for staff residence

NEWSBRIEFS *continued from page 3*

◆ The Gephart Exhibit Trail closed November 1 and will reopen May 1, which will also be New Hampshire Day. During the winter, offices remain open on weekdays and programs for the public and schools are offered year round. See the website, www.nhnature.org for a calendar of events. The Howling Coyote Gift Shop will have NINE special Holiday shopping days in December. Please join us on Thursday, Friday, and Saturday, December 3, 4, 5, 10, 11, 12, 17, 18, and 19 from 10 a.m. to 3 p.m. each day. We have spectacular gift ideas for all ages. Go to our website to download a special 10% discount coupon, good through December 31, 2009 (members receive an additional 10% discount). If you can't join us on those days, please call ahead and on most days (not weekends) we can open the gift shop for you. And there will be a special, free live animal presentation at 12:00 p.m. on

each of these days as well. Or, consider purchasing a gift membership, giving an honorary gift, or a Sponsor A Species donation for the perfect holiday gift!

- ◆ We are taking the leap to upgrade our bandwidth from cable to a dedicated T1 line. This will allow us to get the OtterCam (and future webcams) up and running, dip our toes into distance learning, and transfer all phones to the T1. Thanks to G4 Communications for their assistance.
- ◆ The Board of Trustees' Development Committee has created a new subcommittee led by Volunteer Carolyn Tolles to review our membership program in order to see how we can best recruit new members and retain current members. This will lead to a major revision of the current structure of membership benefits and fees, which will be offered in the New Year.

VOLUNTEER UPDATE

VOLUNTEER RECOGNITION DINNER • PARSONS AWARD

On September 13, trustees and staff honored volunteers at the fourteenth annual Volunteer Recognition Dinner, held aboard the M/S Mount Washington. We gratefully recognize three businesses sponsors: Bill Driscoll Associates, Cross Insurance Agency, and Tanger Outlet Centers. During the cruise on Lake Winnepesaukee, volunteers enjoyed a buffet dinner followed by dancing to music by Mike Livingston. The event was held in the Flagship Ballroom and volunteers enjoyed the views as they explored the decks after dinner. Thank you also to the Winnepesaukee Flagship Corporation and their hospitable crew for a splendid event.

Board Chairman Peter Wood presented the Parson's Award to volunteer Winnie Oustecky. Winnie has been a volunteer since 1994 and completed her training as a docent in 2000. Winnie enjoys representing the Science Center at off-site "Discovery Tables," volunteering for special events, preparing mailings, and much more. Always ready to lend a hand, the staff often hears "What would you like me to do now?" after Winnie finishes a project. The Science Center is fortunate indeed to have Winnie Oustecky as part of the volunteer team. Winnie's name was chosen from these other eligible volunteers: Jim Barry, Dorothy Chekas, Jessica Chisolm, Celia Connolly, Lisa Davis, George DeWolf, Bea Edgar, Fran Fernandes, Karen Firmin, Allan Gavan, Eileen Gosselin, Joyce Hackett, Patricia Heinz, Mari Hoell, Patricia James, Eva Karcher, Dan Kemp, Susan Kemp, Gloria Lindia, Esther Marshall, Peggy Martin, Connie Morrison, Jamie Osborn, Diane Potter, Judy Ryerson, Marnie Schulz, Paul Shenk, Jean Shlager, Julian Shlager, Judy Sniffen, Carol Stewart, Sydney Stewart, Shirley Stockwell, Seth Stutman, Jan Welch, Marc White, Betsy Whitmore, and Beverly Wood. The Parsons Award honors long-time volunteers Natalie and Don Parsons; each year a new recipient represents the spirit of volunteerism.



**Winnie Oustecky is presented the Parson's Award
by Board Chairman Peter Wood**

photo by Ian Raymond

Several volunteers were presented with President's Volunteer Service Awards. Receiving the Bronze Service Award for contributing between 100 and 249 hours in 2008 were: Lisa Davis, George DeWolf, Nancy Jane Duncan, Patti Heinz, Eva Karcher, John McRae, Natalie Parsons, Diane Potter, Judy Sniffen, Sydney Stewart, Carol Thompson, Bruce Whitmore, and Beverly Wood. Jim Barry received the Silver Service Award for contributing between 250 and 499 hours in 2008. This national program was created to thank and honor Americans who inspire others to engage in volunteering through their commitment and example.

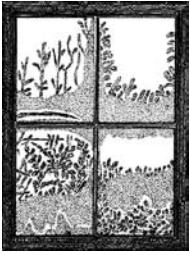
The Trailhead Gallery houses the Volunteer Appreciation Display created in 2004 titled "Volunteers Complete the Picture." Each year, pieces are moved and new pieces are added as the total number of hours volunteer give accumulate. Seven volunteers progressed to the 200 hour category for their volunteer work through 2008: Ramona Goutiere, Mia Jacobson, Dan Kemp, Gloria Lindia, Esther Marshall, Judy Ryerson, and Kathy Wallace. Those moving to the 500 category were: Jim Barry, Nancy Dailey, Jean Shlager, Shirley Stockwell, Eileen Torrey, and Betsy Whitmore. Those moving to the 1,000 hour category were: Patty Blackwood, Nancy Jane Duncan, Eva Karcher, and Sydney Stewart.

In 2008, a total of 7,348 hours was given by 183 Science Center volunteers and an additional 184 people also volunteered for special events. Using the standard set by a nonprofit coalition of organizations, the value of a volunteer "hour" is \$20.25, which equates to a donation of \$148,797. We thank all our volunteers for their outstanding contributions and accomplishments!



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OPENING A WINDOW TO THE NATURAL WORLD

Even as we give thanks at this time of year for the wonderful support we receive annually from individuals, foundations, and businesses, we again ask you to give a generous gift to the 2009 Annual Fund. This year's Annual Fund goal is \$260,000 or about 20 percent of our annual operating budget. Please respond as generously as you can and help us carry out our mission to advance understanding of ecology by exploring New Hampshire's natural world.

One way to increase your Annual Fund contribution is through your employer's matching gift program. As a 501(c) (3) nonprofit, Squam Lakes Natural Science Center qualifies for many matching gift programs. 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 federal Pension Protection Act provides an extraordinary giving opportunity and expires December 31, 2009. Any individual can give up to \$100,000 in 2009 from his/her traditional or Roth IRA. A spouse can give an equal amount. Certain conditions apply; we recommend you consult your tax professional or financial planner to determine what is best for you. Squam Lakes Natural Science Center is a 501(c) (3) nonprofit 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. You may 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, 2009

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

In memory of Patricia Foss
Martha Beers
Nurses Night Out Group

In honor of Winnie and Joe Ousteky's 50th wedding anniversary
Mr. and Mrs. Francis C. Rehor

In memory of Don Parsons
Donna, Nancy, Susan and Natalie Parsons

In memory of Vera E. Raggets
Regina Kelly and the 'walking group'

In honor of Jean and Murray Swindell
Joan Davidson, Mary Dreyer, Marion Ruth, Jane McNeil, Jane Meek, Ginny Preston and Jane Redner

In honor Judy and Larry Webster
Bonnie M. Hunt

In honor of Betsy Whitmore's birthday
Daniel M. Rugg, III
Meredith and Peter Rugg
Walker Family – Frazier, Kevin, Ellis and Campbell



renew your membership online at
www.nhnature.org

TRAIL'S END

GAZING INTO THE FUTURE

If you were a fly on the wall at one of our trustee meetings (formal Board and Committee meetings or ad hoc interactions among trustees – it doesn't matter), or at weekly staff meeting and “retreats,” or during gatherings of our docents and volunteers, or, indeed, interactions among all these groups, and others, you'd be amazed at how much time is spent on “what can the Science Center do better?” None of us who care passionately about the Science Center – and that's all of us! – is ever content with the status quo. We have grown and improved because we build on what we have – sometimes by taking major leaps, such as the Horizon Project, or sometimes by “tweaking” (one of Iain MacLeod's favorite words!), as for example, dedicating certain of the lake boat tours to loon sightings or eagle viewings or holding weekly evening tours in the early summer for moose viewings. Sometimes, indeed, it's somewhere in between, as in adding our highly successful mountain lion exhibit to the trail. We never stand still. We continue to grow.

The trick is always in balancing risk and reward. We have a well-defined mission – to advance understanding of ecology by exploring New Hampshire's natural world – and have chosen, thus far, to lean toward “address[ing] the unique interests and education needs of children.” Our strategic plan, *Forging New Trails*, mentions three illustrative examples, a nature pre-school, a “walk through time,” and an underwater Squam exhibit (see page five of *Forging New Trails*). Each of these requires investment, has different risk profiles, may have differing rewards, and could tilt the balance of our mission more toward childhood education (“no child left inside”) or more toward us “grown-ups.” To these three illustrative examples we have recently added a fourth, what to do to make better use of the Inn, that we own, is a historic landmark in Holderness, was the original base for the Science Center, yet, because it is unheated, currently can only be used in the non-winter months. Making use of this asset would call for substantial investment and could perturb the character of the Science Center – but it is exciting. One possibility that the Inn task force, under the able leadership of Peggy Conner, has surfaced is to use the Inn as a base for residential courses, ranging from a couple of days to a week or more, focusing on aspects of New Hampshire wildlife and making the Science Center a destination for visitors to enjoy what New Hampshire has to offer.

Over the course of the winter months, staff and trustees will be wrestling with these types of options to help determine “what can the Science Center do better?” But, meantime, you can weigh in – what would you like the Science Center to become? How can we move to the next level? What should that look like? Feel free to contact me, Iain, or any of the trustees and staff whom you know if you have strongly held views on what the Science Center should look like in 2015, 2020, or beyond. It is your Science Center.

*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.*

HARES *from page 1*

Caught sleeping? Snowshoe hares literally doze on their feet. With their large hind feet under them, these three to four pound mammals are poised to leap away, covering 12 feet in a single bound and accelerating to over 25 miles per hour!

Another name for the snowshoe hare is the varying hare, indicating that their fur changes color seasonally. Over a period of 10 weeks in the fall and spring, snowshoe hares make the color transition, as only the guard hairs and just their tips change into the new color – white in winter and reddish brown in summer. The winter coat also adds an additional 25 percent insulation. What is the key to this color shift? It's photoperiod, specifically shortening days in fall and lengthening in spring. Another color “trick” is the black-tipped ears on this white creature – the black color draws

attention, allowing the body to be less apparent against the white snow. Of course, camouflage works best in combination with the hare's freezing behavior.

How did the hare I found with Andy know we were coming? I'm sure it was easy with the hare's large ears and good sense of smell. Eyesight may have played a lesser role. Adapted for low light levels of dawn, dusk, and night when hares are active, their eyes do not detect color and are located to the side of their heads where they when can spot predators, even behind them.

Speaking of predators, those interested in hares include foxes, coyotes, fishers, bobcats, lynxes, and large owls. To minimize exposure to danger, hares literally “grab a bite” and return to the safety of their shelters. There they engage in a process called refection to assist with the digestion of this quickly eaten high cellulose meal.

By ingesting the first soft green pellets they excrete, hares absorb extra nutrients and vitamins on a second digestive trip. This final digestion and excretion results in the solid brown pellets we see along their pathways – truly recycled material!

Are you thinking of dusting off your own snowshoes and taking a look for their name sake? It is much more fun if you take along someone young or young at heart. Even more captivating is to have a mystery to solve. Which way did the hare go? It seems obvious, but most things in nature have an intriguing twist. As the snowshoe hare runs, it first places its tiny forepaws in the snow and then brings its larger hind feet around the front legs and plants them in front. So, the “snowshoe” hind feet are really the leaders. Pick a clear, crisp day for your adventure and enjoy your time living on the top!

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