



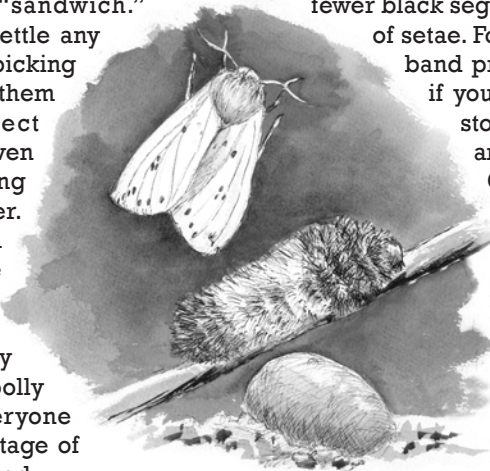
LIFE AS A FAMOUS CATERPILLAR

By Margaret Gillespie, Illustration by Cheryl Johnson

For fun, randomly ask someone you know to describe a woolly bear caterpillar. They will probably tell you about the fuzzy black and brown banded caterpillars that seem to be traveling on a mission every fall. They may wonder about which colored band is in the center of the “sandwich.”

Finding a live caterpillar will settle any confusion. Children delight in picking up woolly bears and watching them curl into furry balls to protect themselves. These caterpillars even have a reputation for predicting the severity of the coming winter. Woolly bear caterpillars seem like “child prodigies” of the insect world. Similar to some famous youngsters, they excel at an early age but their notoriety fades with time. In the case of woolly bear caterpillars, virtually everyone knows the larva or caterpillar stage of their lives. As adults they are called Isabella tiger moths (*Pyrrharctia isabella*) and are seldom seen.

Even though woolly bear caterpillars are familiar fare, let’s take a closer look as they undulate along. Black bands at the head and rear cap a central rusty brown center. These bands are made up of segments that look like rows; woolly bears have a total of 13 segments. Each segment has setae that look and feel like bristly fur. These one-and-a-half inch caterpillars



The three stages of the woolly bear caterpillar

may be fully grown in fall after a series of six molts. Their growth rate depends upon summer moisture and the quality of the grasses, weeds, and leaves they consume. Fortunately they are not agricultural pests. With each molt, the caterpillar has proportionately

fewer black segments and more brown segments of setae. Folklore tells us that a wide brown band predicts a mild winter. Watch out

if you see a narrow brown band — a stormy cold winter is ahead! As an

amusing test of this folklore, Dr. C. H.

Curran of the American Museum of

Natural History in New York City

conducted a one-day caterpillar

survey north of the city each

fall for nine years, starting in

1948. By calculating the average

number of brown rows in all

the caterpillars collected, he

predicted the weather for the

coming winter. Curran’s forecast

was highlighted each year in

The New York Herald Tribune and

surprisingly proved correct. The

woolly bear’s fame grew. Do you

see any problem with this folklore? The width of

the colored bands is really telling us about growing

conditions in the past spring and summer, not the

future winter weather. Careful — we don’t want to

spoil the entertainment!

These famous caterpillars are classic signs of fall

Continued on page 10

FORGING TRAILS

A NIGHT ON THE LAKE

On a recent August evening I pulled into the parking lot at the Squam Lakes Association (SLA) building as the sounds of night began to take over dusk. A bat flitted overhead snapping up the many mosquitos that added their hum to the chorus. Down to the dock I went, where other figures milled around in the twilight. We were there for a nighttime adventure on the lake; invited by our good friends at the Loon Preservation Committee (LPC) to witness an attempt to catch and band loons. Two boats made up the fleet — the SLA barge was the mother ship while a smaller whaler owned by LPC was the more nimble “catch boat.” LPC Squam Lake Biologist Tiffany Grade led the team along with “Big” Mike (never did catch his last name) who is the Loon catcher extraordinaire — a “bander-for-hire” who worked for LPC years ago but now is employed by the Maine-based Biodiversity Research Institute. LPC Director Harry Vogel joined us on the barge to interpret the goings on.

The technique is simple — on paper. Find Loons, approach them in boat, shine bright light in their eyes, and then scoop them up with a net. How hard can it be? As a veteran Osprey-bander/tagger, I know all too well that theory and reality are often very far apart. This sort of research takes finesse, skill, and luck.

Our first target was a pair of Loons with a chick in Sturtevant Bay. This was the only pair on all of Squam

Continued on page 2

FORGING TRAILS continued from page 1

Lake that had managed to raise a chick this year, and this poor breeding success is the prime reason why catching these Loons is critical. LPC was not just banding the Loons but was also taking biological samples to try and unravel the mystery of why the Loon population on Squam has declined so drastically. One particular feather from each wing is clipped and allows extraction of chemical data related to the period when the feather was grown (during the fall and winter). Blood samples, taken from a vein in the leg, allow more current analysis indicating disease or pathogens (picked up on Squam).

The team successfully caught the Sturtevant male and his three-week-old chick. The male was of course not happy to be handled and the person holding him had her work cut out restraining him. The chick on the other hand fell asleep in someone's lap, oblivious to the trauma and clearly enjoying the warmth and gentle stroking. Measurements were taken of the adult, he received a metal leg band and three vinyl color-coded bands, and samples were taken. The chick was too young to band, but was weighed before they were both released back to the cove. Attempts to catch the adult female and another pair in Moultonborough Bay were not successful and we called it a night at about 1:00 a.m.

The work that LPC does on behalf of the Loons on Squam is so important. Teasing out the reasons for the decline in Squam's Loons and their poor breeding success is critical. To read more about LPC's Squam Lake Loon Initiative, visit www.loon.org/squam-lake-study.php.

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

- ◆ The Science Center hosted Dreamnight in June for children who are chronically ill or disabled and their families. More than 200 institutions in 35 countries participate in Dreamnight. Families across New Hampshire were invited to the free event that included face painting, live animal presentations, snacks, crafts, music, and puppets. Dreamnight was sponsored by Lincoln Financial Group and the Bank of New Hampshire.
- ◆ WMUR-TV's *New Hampshire Chronicle* visited in June to film and showed a feature about the Science Center on June 18. If you missed it, you can see it at this link: www.wmur.com/new-hampshire-chronicle/Tuesday-June-18th-Squam-Lakes-Natural-Science-Center/-/13383450/20633712/-/d4gwa5/-/index.html?absolute=true
- ◆ Travel website TripAdvisor awarded a 2013 "Certificate of Excellence" to the Science Center. "...the award celebrates hospitality excellence and is given only to establishments that consistently achieve outstanding traveler reviews on TripAdvisor.... with only the top ten percent receiving
- the prestigious award." See the full press release here: www.tripadvisor.com/PressCenter-i6015-c1-Press_Releases.html
- ◆ This fall Up Close to Animals will be every Saturday and Sunday from September 1 through October 13, with presentations at 12:00 and 2:00 p.m. River Otter Feeding presentations will continue every Monday, Wednesday, and Friday at 11:30 a.m. through November 1.
- ◆ Blue Heron School has a new option for families to enroll children ages 3 to 6 for a full day (8:30 a.m. to 3:30 p.m.). Others may opt for a partial day session (8:30 a.m. to 1:00 p.m.). There are still openings for the 2013-14 school year; the first day of class is September 9. If you are interested in making a donation to the Blue Heron School Scholarship Fund, please contact Janet Robertson at 603-968-7194 x 12.
- ◆ Members and visitors may show a trail admission or cruise receipt and receive a 10% discount on lunch or dinner at Walter's Basin Restaurant in Holderness every Tuesday through October 29, 2013.

SQUAM LAKES NATURAL SCIENCE CENTER

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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 distributed to all members. Comments are welcomed by newsletter editor Janet Robertson at 603-968-7194 x 12 or janet.robertson@nhnature.org.

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VOLUNTEER PROFILE

BEVERLY 'BEBE' WOOD



Nature played a big role in my upbringing. I learned to love the wonderful New England seasons growing up in the small town of Marblehead, Massachusetts. My parents loved the outdoors and exposed my sister, twin brother, and me to bicycling, swimming in the ocean, learning to ski at the golf course, and figure skating.

We moved several times during my husband Walt's service as a Marine and continued education at Dartmouth,

University of Maine, and Columbia University. I graduated from Colby Junior College in New London. We came to live in New Hampshire in 1963 when Walt was hired by Freudenberg. I've now been in Bristol for 50 years, one of very few places with both mountains and lakes. We loved returning to New Hampshire.

I loved being a member of P.S.I.A. (Professional Ski Instructors of America) for many years. Starting a free junior ski program in the sixties for local small towns such as Andover, New Hampton, and Bristol, so kids could get physical education once a week was very rewarding. We taught parents to be instructors and provided skis and clothing. Today there are over 125 students from Andover and other towns in the program.

I love the New Hampshire lakes. Look at all the things you can do: windsurfing, sailing, swimming, fishing, waterskiing, kayaking, and loon watching.

As a child in Girl Scouts I gained a respect for the outdoors. I got to the highest rank and went to Girl Scout Camp for a week each summer. It was a big part of my life.

When I first started coming to the Science Center, it was small. Will Abbott [former Executive Director] asked if I would be interested in volunteering. I was just enthralled and loved everything about it: the animals, the people, and especially the environment and programs. It's so hands-on, it's fabulous. The more I got involved, the more I enjoyed it. Volunteer Coordinator Elaine Malquist encouraged me to become a docent. To be able to volunteer is wonderful, there is nothing more rewarding.

It's hard to say what I like best. I especially love the otters and their antics. Seeing the mountain lions grow up has been interesting. The opportunity to learn about the lake through the boat tours is a wonderful and educational experience. And, look how fantastic Kirkwood Gardens are! You learn so much. It's a happy place, and it's getting more and more interesting.

I joined the volunteer team in 1997. My response to the question, "Why would you like to be a volunteer?" was, "It's important to learn about our environment! I care about the outdoors and want to share that knowledge." I have volunteered as a docent, School Group Greeter, Trailhead Greeter, Office Assistant, for special events, and much more. Annually, I host a potluck lunch for fellow volunteers.

Recently, I was featured on WMUR TV in my role as a "ski bum" and volunteer at Ragged Mountain. My skills as a skier were recognized starting with the time I was photographed for *Life* magazine in 1950.

I have four children, 10 grandchildren, and 2 great granddaughters. So far, life has been good! Enjoy!

NEWSBRIEFS *continued from page 2*

- ◆ Many new volunteers joined the team this year. We welcomed 11 new docents, including three transitioning from the First Guides teen program. There are ten new First Guides in training. Several volunteers helped by greeting trail guests, others are assisting Facilities staff and in the office and Kirkwood Gardens.
- ◆ Festival of Flight is on Saturday, September 14. With a focus on the wonders of flight and migration, the day includes a hawk watch, crafts for children, live animal presentations, and a tethered balloon ride donated by Re/Max Bayside of Meredith. Brett Ferry of New Hampshire Fish & Game will make a presentation about the Karner Blue Butterfly restoration project. Longhaul Farm will provide food for sale. Community Guaranty Savings Bank is generously sponsoring the event.
- ◆ Halloween Hoot N Howl returns this year on October 19. Sign up by calling

603-968-7194 and receive a \$1 discount per person if you reserve your spaces before October 11.

- ◆ Please consider contributing to the 2013 Annual Fund, which supports general operations. Your Annual Fund donation helps to care for and feed our live animals, maintain our buildings, trails, and exhibits, and to offer a wide variety of quality natural science programs for all ages and audiences. Your support is vital! You can make a gift online, sign up to make a recurring gift that provides year round support, or send a donation in response to the request we will mail this fall. Please consider making a new gift or increasing your donation by December 31 this year.

NOTE: There was an error in the summer *Tracks & Trails*. Honorary Trustee Barbara Ridgely's name was spelled incorrectly.

WISH LIST

Flat screen computer monitors

iPads or similar tablet computers

Umbrellas for admissions

Clean pine needles for animal enclosures

Laminating machine

Cloth napkins for Blue Heron School

Dehumidifiers

GARDENER'S CORNER



ENHANCE YOUR GARDEN WITH NATIVE SHRUBS FOR WILDLIFE

By *Volunteer Karlene Schwartz*

What is a NATIVE Plant?

Shrubs, wildflowers, and trees in the Squam Lakes area have been impacted by natural forces since the most recent glaciers moved north 10,000 years ago. Plants that survived natural selection are our present day native plants. Native shrubs, along with native animals, trees, wildflowers, fungi, and other organisms, make up our current ecosystem.

Why landscape with NATIVE Shrubs?

Butterflies, birds, mammals, and other animals depend on shrubs for nest sites, shelter, and food. Advantages of native plants compared to introduced plants include superior pest resistance, low maintenance (less fertilizer, mulch, and water), and winter hardiness. Native shrubs pose no threat to native plant communities, whereas some introduced species lack benefits for wildlife and may displace native plants.

Each of us displaces native wildlife and the plants on which they depend when we construct our driveways and homes, which comprise our "footprint on the land." We can reduce our footprint by minimizing lawns and hard surfaces such as pavement and roof areas. Maximizing native plants helps to soak up snow melt and rain and feed wildlife.

Where Can I See NATIVE Shrubs?

Kirkwood Gardens displays many native shrubs. A notebook on the porch overlooking Kirkwood Gardens lists soil and light/shade requirements and shows how native plants appear in the garden.

How Do I Begin?

Discover which native shrubs already grow in your garden. You may find wild witch hazel, willow, mountain laurel, blueberry, winterberry, and Viburnum. Create a simple plant map. Make room for native shrubs by eliminating invasive plants.

Retain all the forest layers — native trees, shrubs, and ground cover — because wildlife cannot simply move elsewhere if they are dependent upon a certain layer for mating, feeding, and raising young. Many birds and butterflies have specific habitat and food needs. For example, spicebush swallowtail butterfly larvae feed on spicebush, a flowering shrub. Many native shrubs — buttonbush, elderberry, dogwoods, Labrador tea, meadowsweet, Northern bayberry, sweet pepperbush, sweet gale, sheep laurel, and rhododendrons — provide food for wildlife.

For natural areas to retain species diversity and scenic beauty, we sometimes lend nature a hand. Your library and the Science Center's Howling Coyote bookstore can supply bird gardening books, butterfly gardening books, wildlife gardening books, and guides to native plants. Try consulting the following resources:

RESOURCES

Landscaping for birds

Cornell Laboratory for Ornithology
www.birds.cornell.edu/programs/AllAboutBirds/AttractingBirds/Landscaping

Basics of butterfly gardening

North American Butterfly Association
www.nababutterfly.com

Shrubs that provide food for wildlife

Belknap County Conservation District
www.belknapccd.org

Audubon Society of New Hampshire

www.nhaudubon.org

NH-grown native shrub seedlings

New Hampshire Division of Forests and Lands
www.nhnursery.com

Wildlife habitats

New Hampshire Fish and Game
www.wildlife.state.nh.us/Wildlife/create_wildlife_habitat.htm

Native plant source

New England Wild Flower Society
www.newfs.org

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

WOOLLY BEAR QUIZ



- 1. True or False?** The comparative width of the woolly bear's black and brown bands predicts the severity of the coming winter.
- Woolly bear caterpillars overwinter as
A. caterpillars **B.** pupae **C.** moths
- What do woolly bear caterpillars and Isabella tiger moths have in common?
- The setae of the woolly bear caterpillar are its
A. legs **B.** mouth parts **C.** brown and black bristles
- Woolly bear caterpillars are on the move in the fall searching for a place to _____.

Woolly Bear Quiz Answers:
1. False. The bands reflect the caterpillar's growth. 2. A
3. They are the same creature in different life stages. 4. C
5. Hibernation

NATURALIST'S CORNER

WHAT IS MOST ENDANGERED?

By Amy Yeakel

During one of my recent talks for Science Center visitors a little girl raised her hand and asked “What is most endangered?” I determined she wanted to know which New Hampshire animal was most critically endangered. What a good question! And my next thought was, “I am not sure I know.” A number of responses dashed through my mind: I am aware of the status of the Timber Rattlesnake. They are on the state endangered species list. I know many efforts have been made to save the Karner Blue Butterfly, which is on the state endangered species list. Piping plovers, of course, have many habitat threats and they too are on the state endangered species list. But what was the answer to her thoughtful question?

An endangered species is defined by New Hampshire Fish and Game on its website as a “native species whose prospects for survival in New Hampshire are in danger because of loss or change in habitat, over-exploitation, predation, competition, disease, disturbance, or contamination. Assistance is needed to ensure continued existence as a viable component of the state’s wildlife community.” Remember that there is a federal endangered status as well. In addition to the state endangered status there is a state threatened status, which is defined as “those species which may become endangered if conditions surrounding them begin, or continue, to decline.”

The New Hampshire Fish and Game Department is the branch of the state government responsible for oversight of wildlife and associated issues. So I called there to find the answers to address the child’s question. I contacted the staff at the Nongame and Endangered Wildlife Program. I was told that I had thought of one of the most critical but not the other. The two most critically endangered animal species in New Hampshire are the Timber Rattlesnake (mentioned above) and the New England Cottontail Rabbit (the animal I hadn’t thought of). These two animals both face extinction in New Hampshire but for different reasons. Timber Rattlesnake numbers are critically low due to the direct killing of the snakes by humans. Although Rattlesnakes are venomous, the role they play in rodent control and the balance of natural communities is exceedingly valuable. In the case of the New England Cottontail Rabbit (not to be confused with the abundant Eastern Cottontail), habitat fragmentation and disturbance are their greatest issues. Rabbits are preyed upon by many animals such as foxes, coyotes, and hawks. Predator and prey species are both important to how natural systems work. Thus, the depletion of predator and prey species, such as Timber Rattlesnake and the New England Cottontail, can have far reaching effects on a natural system. Who knew the visitor’s thoughtful question would lead to more research?

Renew your membership online at
www.nhnature.org

FROM THE HERON'S NEST

POMP AND CIRCUMSTANCE

By Laura Mammarelli



Blue Heron School reached a milestone last spring with the celebration of their first kindergarten graduation. Parents and grandparents attended a special ceremony in the classroom. Three graduates took turns holding a globe as they walked around a circle of classmates and family — symbolizing the sun — to mark their years at school. Each child read a book he or she had written and illustrated about his or her experiences at school. These children will be missed. This fall several new students will be welcomed as school starts again on September 9.

Blue Heron School, a nature-based Montessori school for children ages three to six, operates Monday through Friday, 8:30 a.m. to 1:00 p.m. or 8:30 a.m. to 3:30 p.m., September through June. For information, please contact Laura Mammarelli at 603-968-7194 x 40 or blueheron@nhnature.org.



SQUAM LAKES
NATURAL SCIENCE CENTER

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NATURAL ADVENTURES

FOREST FAIRIES

Sunday • September 8 • 2:30 to 4:00 p.m.
Children ages 3 to 8

As you walk along a mossy path it is fun to imagine the gnomes, fairies, and nymphs that might inhabit that seemingly magical place. Have fun getting close to these special places by creating your own fairy house. Discover real life forest “gnomes” – red efts, red backed salamanders, toads, insects, spiders, and more!

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

A WIND HUNT

Wednesday • October 2 • 10:00 to 11:30 a.m.
Adults and children ages 3 to 5

Wind is a part of every season; from the blustery gusts of winter to the gentle breezes of summer. Naturalist Eric D’Aleo will lead you on an excursion with your child as we search for the wind – chasing leaves and seeds floating through the air, playing with wind flags, and making pinwheels as we pursue the wind. Adult must accompany child at no additional cost.

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

FALL FAYAL HIKE

Sunday • October 13 • 1:00 to 3:00 p.m.
Adults and children ages 10 and up

Enjoy this moderate hike in the Science Center’s back yard. This one-mile hike has some challenging elevation changes and will take about two hours, with plenty of stops along the way. We will look for signs of change as fall will be in full swing.

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

BONKERS ABOUT BATS

Saturday • November 9 • 10:00 to 11:30 a.m.
Adults and children ages 5 and up

Why do bats hang upside down? What happens to bats in winter? Do they really eat mosquitoes? Become wise about bats through games, activities, and a bat story. Meet live bats and find out why bats need our help.

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

PREPARING FOR WINTER

Saturday • November 23 • 10:00 a.m. to 12:00 p.m.
All ages

What do plants and animals do to prepare for the coming winter? Explore the ways plants prepare on this short outdoor hike. Then go inside to meet some live animals and look at the ways wildlife get ready for the toughest season of all.

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

Limited space available; reservations and advance payment required unless otherwise noted. Programs are subject to cancellation if minimum enrollment is not met.



Cheryl Johnson

PROGRAMS FOR HOMESCHOOL STUDENTS

“ALL ABOUT” SERIES

Ages 4–6
10:00 to 11:30 a.m.



November 7 Porcupines
December 5 Hawks
January 9 Skunks
February 6 Groundhogs
March 6 Owls
April 3 Turtles



Join us with your homeschooled child to learn all about

New Hampshire wildlife. Each session considers a different group of living things through activities, hands-on experiences, and a meeting with a live animal.



Hawk illustration by Eric D’Eleo • All other illustrations by Cheryl Johnson

GET HAPI!

Ages 7–10
10:00 to 11:30 a.m.

November 7 Adaptations
December 5 Nocturnal Animals and their Adaptations
January 9 Interrelationships
February 6 Populations
March 6 Habitats
April 3 Ecosystems

The primary interpretive focus of the Science Center’s programs and exhibits is community ecology, which has four major concepts: Habitats, Adaptations, Populations, and Interrelationships (HAPI). Join us with your child to investigate these topics in depth.

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.

One adult must attend with children for free.
Each additional adult pays child fee.

Program offerings are aligned with the New Hampshire Science Framework.

SPECIAL EVENTS

Save the Date!

How to Create Stories That Make a Difference

September 20 and 21 • 9:00 a.m. to 5:00 p.m.
Adults

Judy Fort Brennehan, CTT, owner of Greenfire Creative, LLC and author of *The Art and Craft of Interpretive Writing* (forthcoming), is an award-winning writer and playwright, writing coach, and speaker. She will help you tell your stories as you learn the art and craft of interpretive writing through facilitated discussion, in-class exercises, and shared results. Gain tools for organizing, editing, and dodging writer's block.

Find out more at www.nhnature.org

Cost: \$395 pp (includes workshop materials, a copy of *The Art and Craft of Interpretive Writing*, and refreshments).

PRESCHOOL NATURAL ADVENTURE SERIES

MINDS IN MOTION

Wednesday • September 11

9:30 to 10:30 a.m.

Ages 3 and under with an adult

The mind and body of a young child are constantly on the move. Foster your child's "natural curiosity" and explore motion from an animal's perspective – jump like a frog, swim like a fish, crawl like a caterpillar, and fly like a bird. These adventures will build a foundation for a lifetime of enjoyment and appreciation of the natural world. Adult must accompany children at no additional cost.

Cost: \$5/member child per session;
\$7/non-member child per session

HALLOWEEN HOOT 'N' HOWL

Saturday • October 19

Eerily entertaining 40-minute guided tours along a jack-o-lantern-lit trail features family-oriented live skits, storytelling, and fun Halloween themes. Call 603-968-7194 to reserve your spaces.

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

\$1 discount for reservations made by October 11.

PROJECT OSPREYTRACK UPDATED

By Iain MacLeod



One of Art's chicks being released in Bridgewater.

Photo by Chris Martin

Project OspreyTrack continued this year with great success. Art — the male Osprey from the nest in Bridgewater — successfully returned from his winter home 5,000 miles away in Brazil on April 10. He reunited with his mate (he had not seen her in six months) and they successfully raised three healthy chicks. Over the summer we watched his foraging behavior as he caught fish for his mate and his growing family. Like last year, he had favorite spots along the Pemi and Baker Rivers and frequently visited Sky Pond, Jackson Pond, Winona Lake, Little Squam, and Hawkins Pond. He did make a couple trips to Hebron Marsh on Newfound Lake, but not one single trip to Big Squam. In late May we successfully trapped two more adult males at nests in Tilton and Stratford (north of Groveton). We watched them during the summer as they raised their chicks. In early August we tagged a female chick at a nest in the saltmarshes of Hampton Harbor and later in August we caught Art again, removed his transmitter, and placed it on one of his chicks. We also deployed a second transmitter on another of Art's chicks. We now have five Ospreys that we will monitor on their dangerous migrations to South America. For more details and to follow along go to:

www.nhnature.org/programs/project_ospreytrack/index.php

Festival of Flight

Saturday • September 14 • 9:30–4:30

(last admission at 3:30 p.m.)

- Activities throughout the day at this enjoyable, family festival.
- Volunteer docents will be on hand with live animals and demonstrations.
- Learn about the wonders of flight and migration.

\$15/adults, \$12/seniors, \$10/youth.

No charge for SLNSC members and children 2 and under.

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SQUAM LAKE CRUISES

ENJOY FALL FOLIAGE IN A BEAUTIFUL SETTING

New Hampshire is famous for its picturesque lakes and mountains. Squam Lake is a gem among many. See its amazingly clear water, rocky shores, celebrated islands, historic homes, scenic mountain views, and remarkable wildlife. If you are looking for a memorable experience, choose from one of these fabulous 90-minute guided tours on beautiful Squam Lake.

EXPLORE SQUAM

September 1 to October 14

Tuesday, Wednesday, Thursday — 11:00 a.m. • 1:00 p.m.
Friday through Monday — 11:00 a.m. • 1:00 p.m. • 3:00 p.m.

This unforgettable guided tour has something to delight everyone. Learn about the natural history of the lake, the wildlife that makes Squam so special, and the people who have enjoyed these lakes for over 5,000 years. View locations where the movie *On Golden Pond* was filmed over 30 years ago. Watch for Common Loons and Bald Eagles and other wildlife.

NATURE OF THE LAKES

September 3 to October 10

Tuesday, Wednesday, Thursday — 3:00 p.m.

Uncover the rich natural history of Squam Lake with an experienced naturalist educator. Observe Loons and Bald Eagles and their nesting sites along with other wildlife. Learn how animals survive and adapt to their aquatic world. Gain an appreciation and deeper understanding of Squam Lake from mountain ranges to island stories to quiet spots during this memorable lake experience.

**Cost: \$21/adult member; \$23/adult non-member
\$19/senior member; \$21/senior non-member (age 65+)
\$17/youth member; \$19/youth non-member (to age 15)
Not recommended for children under age 3**

SQUAM LAKE CHARTERS

Treat your visiting family or friends to a truly memorable experience in the Lakes Region. Host your own cocktail party or other unique gathering on Squam Lake. Transport wedding guests to Church Island. Any of these are possible by chartering a private cruise customized to fit your plans. Five canopied pontoon boats and experienced tour guides are ready to help with your special outing. Operations Manager Tom Klein will personally arrange your charter for any occasion.

**Contact Tom Klein at
603-968-7194 x 10**

or tom.klein@nhnature.org for reservations.

All Squam Lake Cruises depart from the dock on Route 3 at the bridge, next to Walter's Basin Restaurant in downtown Holderness. Squam Lake Cruises are 90 minutes in length and are on canopied pontoon boats. Binoculars are available for wildlife viewing at no additional cost.

**Space is limited on Squam Lake Cruises.
Call for information and reservations**

603-968-7194

2013 ANNUAL MEETING REPORT

Squam Lakes Natural Science Center's Annual Meeting was held on Saturday, August 10, 2013. A quorum of members reviewed and unanimously accepted the minutes of the 2012 Annual Meeting. Treasurer Bruce Whitmore presented the 2012 financial report.

Retiring trustees Alan English and Tashia Morgridge were honored for their dedicated service. Executive Director Iain MacLeod gave a report and recognized staff members Tim Curry, Tom Klein, and Lauren Moulis for five years of service.

Members reelected trustees Nancy Beck, Lawrence Beeson, Margaret Conner, Andy Eaton, John Fernandes, David Martin, and Susan McKimens to serve three-year terms. Members elected George Carr as Honorary Trustee. Members elected three new trustee candidates to serve three-year terms: Kenneth Evans, Emily Preston, and Richard Starbuck. Members elected officers to serve one-year terms: David Martin, Chair; Nancy Beck, Vice Chair; Kenneth Evans, Treasurer; and Lea Stewart, Secretary.

Executive Director Iain MacLeod surprised Development and Communications Director Janet Robertson with the 2013 Horizon Award for her dedicated efforts on behalf of the Science Center.

Chair Dave Martin gave Iain MacLeod a gift from the board of trustees to commemorate Iain's recent birthday: a stained glass window rendering of an osprey.

Attendees received copies of the 2012 Annual Report. If you did not attend the meeting, you may request a copy of the Annual Report in the mail or view it at www.nhnature.org/files/PDF/2012_Annual%20Report.pdf

Prior to the meeting, members enjoyed a complimentary pancake breakfast prepared by trustees.



2014 Board of Trustees Officers

Kenneth Evans, Treasurer; David Martin, Chair;
Nancy Beck, Vice Chair; and Lea Stewart, Secretary.

ANOTHER WILD SATURDAY NIGHT!!

The crowd is gone, the tent is down, and Another Wild Saturday Night lives on as a good memory we have of an enjoyable community event. Held on Saturday, July 20, 2013, at the end of a hot, humid week, the weather cleared at the last minute. The unique comedy show drew many new people (more than 230 attended) and everyone had a good time. The event reached its goal of \$19,000.

EVP Marketing & Media, led by Peter Adams and Don Hyde, created magic with video skits, ably directed by Peter Adams and Lisa Lovett. Skits were written by Peter Adams, Eric D'Aleo, Iain MacLeod, and Lisa Lovett. Cast and crew members were: Nancy Beck, Laurie Beeson, Eric D'Aleo, Terri Dautcher, George DeWolf, Diane Downing, Brian Eaton, Brenda Erler, Dave Erler, Amanda Gillen, Liz Hager, Tom Howe, Noah Hyde, Tom Klein, Dale Lary, Bill Lee, Sid Lovett, Iain MacLeod, Dan Mitchell, Tashia Morgridge, Mary Noyes, Joe Oustucky, Carol Palmer, Jeremy Phillips, Liz Rowe, Ian Soderberg, Liz Stack, Bruce Whitmore, Peter Wood and many more friends and staff.

We are grateful to the many donors who gave to the silent and live auctions, including: Adornments Unique Jewelry & Accessories, Ale House Inn, Ancient Willow Massage, Ray Anderson, Asquam Marina of Holderness Harbor, The Auto Spa, Axiom Cleaning Services, Belknap Landscape Company, Ben & Jerry's, Betsy Baker, The Barnstormers Theater, Nancy and Paul Beck, Laurie and Susan Beeson, Martha Billings, Birdie's Range, The Bookmonger and Toad Hall Toys, Cackleberries Garden & Gift Shop, Lori Card, Peggy and David Conver, The Country Carriage, Coyote Grill, Curt's Caterers, Designing Women Interiors, Donovan Tree Experts, Dreams & Visions Giftshop, Franz Dubach, Bonnie Edwards, Ehlers Management Group, EVP Marketing & Media, Todd Elgin, John Fernandes, Golden Pond Country Store, Pam Gould, Dennis Hager, Hampshire Hospitality Holdings, Steve Hayden, Dawn Heiderer, Design Inspiration, Leone Hinzman, Inn at Newfound Lake, Innisfree Bookshop, Isles of Shoals Steamship Company, Rod Ladman Window Design, Lady of the Lake, Lakeside Deli and Grille, Liz Lapham, The Lantern, Lavinia's, Longview Farm, Lisa Lovett, McAuliffe-Shepard Discovery Center, Louise and Sandy McGinnes, Susan McKimms, Winky and Dave Merrill, Millyard Museum, Montshire Museum of Science, Mosenthal Spine and Sport, Moulton Farm, Museum of New Hampshire History, The Music Hall, New Directions Upholstery, Newfound Audubon Center at Paradise Point, New Hampshire Music Festival, Ninth State Fitness, Oglethorpe Fine Arts and Crafts,

Pebble's Farm, Petal Pushers Nursery, Plymouth Lions Club, Remick Country Doctor Museum and Farm, Riverside Dairy Joy, Liz and Dan Rowe, Seacoast Repertory Theater, Seacoast Science Center, Six Burner Bistro, Estelle Smith, Squam Lake Inn, Carol Stewart, Lea Stewart, Story Land, Carol and John Thompson, Tish's Nail Care Boutique, Tree Solutions LLC, The

Valley Inn, Sarah Warren Tapestries, Waterville Valley Resort, Eric Webster, West Shore Marine, White Mountain Athletic Club, Bruce Whitmore, Winnepesaukee Forge, Winnepesaukee Playhouse, Wholly Tara, Richard Wood, Yikes! Gallery, Yoga Studio 8, and Marcia Zahr.

Special thanks to Asquam Marina of Holderness Harbor, The Common Man, Lakes Region Tent and Event, and the Woodstock Inn Brewery for in-kind donations of services. The volunteer event committee contributed hours and hours: Susan McKimms, Chair, Kay Anderson, Betsy Baker, Nancy Beck, Andy Eaton, Mary Kahn, Joan Martin, Libby Rubin, Judy Ryerson, Pat Sava, Carol Stewart, Lea Stewart, Carol Thompson, and Marcia Zahr. Operations Director Liz Rowe and Volunteer Coordinator Carol Raymond organized help from staff and volunteers.

The Auto Spa, Pemi Choral Society, Squam Boat Livery, Squam Lake Automotive Services, Christopher P. Williams Architects, and Yoga Studio 8 generously

sponsored the event through program advertisements.



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.

Contact Development and Communications Director Janet Robertson at 603-968-7194 x 12 or janet.robertson@nhnature.org for more information.



OPENING A WINDOW TO THE NATURAL WORLD

IRA ROLLOVER MAKE A GIFT FROM YOUR IRA BY YEAR END

Are you one of the many people who have retirement savings in an IRA? Do you know about tax advantages of making a charitable gift from your IRA? If you are 70 ½ or older, you can save on taxes this year by making a tax-free distribution from your IRA to a qualified charitable organization such as Squam Lakes Natural Science Center.

The American Taxpayer Relief Act of 2012, also known as the IRA Rollover, was passed by Congress in January. It has been extended several times over the past few years and is now effective until December 31, 2013. Whether it will be renewed at year end is unknown. This means now is a good time to consider making a gift.

This law allows individuals who are age 70 ½+ to make distributions directly from their IRA or Roth IRA to qualified charitable organizations and pay no tax on the money that is withdrawn, up to \$100,000. To take advantage of this, contact your IRA plan administrator with instructions to make a direct distribution to a qualified charitable organization such as Squam Lakes Natural Science Center.

You may contact Janet Robertson, Development and Communications Director at 603-968-7194 x 12 or janet.robertson@nhnature.org.

WOOLLY BEAR continued from page 1

as they head for protected spots under logs and rocks, and in wood and leaf piles to hibernate for the winter. Curling up and using their setae for insulation is not enough. Caterpillars freeze, but glycerol accumulating within the caterpillars ensures that ice crystals form around cells, not inside them. Caterpillars even survive freezing and thawing cycles. This adaptability to temperature caught the eye of climate change researchers in the province of Ontario, Canada. Would additional freezing and thawing cycles associated with warmer winters affect the caterpillars' survival? Researchers indeed discovered a significant increase in mortality as well as tissue damage in caterpillars exposed to multiple cycles. Maybe woolly bears are weather gurus after all.

Come spring, woolly bears resume feeding for a short time before spinning a cocoon. If you happen upon one of these oval, fuzzy cocoons, look closely for the tell-tale reddish brown and black setae that are recycled into this new "package." After a few weeks, in a major transformation, the adult Isabella tiger moth emerges. This light yellow moth with intermittent black spots has a two-inch wingspan. Check for one fluttering around a door light at night. After mating and laying eggs, the moths die. There may be

We are grateful for these memorial and honorary gifts received from April 1 through June 30, 2013:

In memory of Mary Denison

Elizabeth Dewey

In memory of Milton Huckins

Anonymous

In memory of Grace Mattson

Thread and Needle Society

In honor of Maureen McGinty

Heather and Peter Miller

In memory of Robert Anderson Miller

Robert D. Keiver

In memory of Barbara Ridgely

Joyce Aicher

Carole Berney

Virginia Ridgely Howe

Lorraine and Robert Kingsbury

John and Susan Marshall

Paul and Warren Miller

Katherine and Michael Nicoletti

Alice Sailer

Mary Anne and Raymond Scott

Elizabeth Tomkins

Elizabeth and Stirling Tomkins, Jr.

Betsy and Bruce Whitmore

Anna Elsa Zopfi

In memory of Betty Schoonmaker

Elsie and Richard Robertson

In memory of Greg Smith

Ann and Richard Chalmers

two generations of woolly bears before the final caterpillars go in search of a safe wintering site. Before they disappear, be sure to share a woolly bear with a friend. Here's an insect that will not crawl or fly away although its curling behavior gives it the nickname "hedgehog caterpillar." One caution: although the setae are not poisonous, they can cause minor skin irritation, so treat them gently.

Here in New England, we don't really need an excuse to talk about the weather. But with all these caterpillars in such a hurry, what do you think the winter will bring?



TRAIL'S END

TURNOVER

Many of you will recall that a few years ago, we implemented term limits for our board members. Prior to implementation, some board members had served for as much as two decades. While such long terms were helpful as the Science Center matured, our goal in setting term limits is to keep our board fresh with new ideas and energy.

Well, the last of our longer term board members retired at our annual meeting in August. Tashia Morgridge served on the board with distinction for fourteen years! We will certainly miss Tashia's wisdom and guidance. Alan English also retired in August after a full nine years (the new maximum) on the board. Alan led the Education Committee of the board for six years and provided much thoughtful insight over his term.

We also had significant turnover in our officer ranks this year. Laurie Beeson was chair of the board for the past three years and has overseen many improvements in board operations (including term limits). Bruce Whitmore served as treasurer for the past five years. During his tenure we survived the economic downturn in relatively good fashion, thanks to his steady hand. John Fernandes stepped aside as secretary after three years. We will miss his efficient minutes.

We offer our heartfelt thanks to each of these individuals for their time and dedication in fulfilling their various responsibilities as trustees.

Our good fortune is that we have three new board members who bring fresh ideas with them. Emily Preston, who is currently employed by the NH Fish and Game Department, has already had a significant impact on the content of some of our exhibits. Ken Evans, a retired audit partner of a major accounting firm, agreed to take on the treasurer role. And, Dick Starbuck, a retired financial advisor, will bring helpful skills in the investment and development areas. We are also fortunate that Laurie, Bruce, and John will continue as board members through the remainder of their nine-year terms so we will be able to call on their collective knowledge and judgment.

2013 has proven to be an exciting year at the Science Center. Our board and staff are actively engaged in many activities and we are looking forward to several changes and additions in the upcoming year. More on that next time.

If you would like to offer suggestions about our board or any other topic, please email me at dave.martin@nhnature.org. I'd love to hear from you.

*Trail's End is written by David Martin,
Chair of the SLNSC Board of Trustees.*

**Trails will be open regular hours on
November 2 — last day in 2013.**

SCOTLAND NATURE TOURS

Shetland and Orkney Islands

June 13–26, 2014



Join Iain MacLeod for a trip to Scotland's most northerly islands. We'll fly to Aberdeen and then take an overnight ferry to Shetland. We are so far north, that this is truly the land of the midnight sun, known locally as the "simmer dim." Some of the most spectacular seabird colonies in the world can be found on these islands, whose rugged moors and seacoast has an Arctic tundra feel to it. Otters, seals, puffins and ancient Viking settlements will be highlights. A nighttime visit to the Island of Mousa and its ancient "broch" (built 100 BC) is an experience you'll never forget. We'll travel by ferry from Lerwick to Kirkwall in Orkney for four more days of island exploration. We'll visit the village of Skara Brae, Europe's best-preserved Neolithic settlement — believed to have been inhabited from around 3100 BC, and our hotel is next to the Standing Stones of Stenness.

Cost: \$5,500* per person.

Hebrides and Highlands

July 2014

Several people have contacted Iain about repeating his Hebrides and Highlands trip. If there is enough demand, Iain will lead it.

This 13-day trip shows off the very best of Scottish scenery and hospitality. We'll fly from Boston to Glasgow and then go by van to Oban and ferry to the spectacular island of Mull. We'll stay five nights at Tiroran House Hotel (voted best small House Hotel, 2013). The spectacular loch-side setting and beautifully-kept gardens make this a memorable location. Day trips will take us on a boat excursion to the Treshnish Isles for lunch among Puffins and a chance to explore Fingal's Cave on Staffa. We'll visit the beautiful village of Tobermory and take a day trip to Iona and tour the ancient Abbey. Wildlife highlights include White-tailed and Golden Eagles, Otters, Seals, and Red Deer. The second part of the trip takes us to the beautiful Spey Valley nestled next to the Cairngorm Mountains. We'll stay at another of Iain's favorite hotels – Corrou House near Aviemore. We'll explore lochs and ancient forests and the shores of the Moray Firth, including a day trip to the Black Isle and Cromarty. The final couple of days take us east to Aberdeenshire. We'll visit Royal Deeside including a tour of Balmoral Castle and then to Edinburgh for a free day to explore this wonderful and historic city.

Cost: \$5,500* per person.

All-inclusive cost includes hotel accommodations and all meals, round-trip airfare from Boston, van transportation in Scotland, ferry and boat trips and admission fees to nature reserves and other destinations listed on the itinerary.

**Assumes double or twin occupancy room.*

There is an additional \$300 single room supplement.

**For a full itinerary or to book a space,
call Iain at 603-968-7194 x 23**



The Howling Coyote Gift Shop

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The Social Black Bear

Saturday • November 2 • 4:00 to 5:00 p.m.

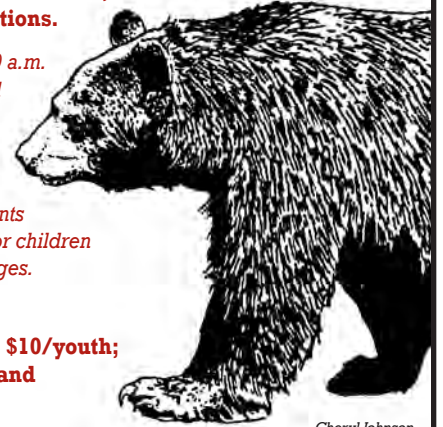
Renowned bear behavior expert, Ben Kilham, will discuss his decades-long work raising bear cubs and observing black bears in the New Hampshire wild. Ben's extraordinary relationship with one 17-year-old female has given him insight into the daily lives, child-rearing practices, and communication patterns of bears, and has yielded some remarkable discoveries. Ben will sell copies of his new book, *Out on a Limb: What Bears Have Taught Me about Intelligence and Intuition*.

No charge for program admission, but call 603-968-7194 for reservations.

Trails will be open from 9:30 a.m. to 4:30 p.m. with the last trail admission at 3:30 p.m.

Guests can see enrichment demonstrations at the Black Bear Exhibit. Volunteer docents will be on hand with crafts for children and demonstrations for all ages.

Trail admission:
\$15/adults, \$12/seniors, \$10/youth;
no charge for members and children 2 and under.



Cheryl Johnson

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