



DYNAMIC DUO

By Margaret Gillespie, Illustration by Cheryl Johnson

What do ice out, mud season, and spring peepers have in common? They are all signs that the sun is higher in the sky and it is time to welcome spring. If you are a “spring connoisseur,” listen for wood frogs calling even before spring peepers do. Let’s scrutinize these two kinds of frogs and discover how they both get a jump on the season.

Spring peepers (*Pseudacris crucifer*) are tiny chorus frogs, light brown to gray in color, with a distinctive but variable cross or “X” across the back. Within 15 minutes, they can subtly change color to blend with their environment. It can be challenging to find these half inch to one and a

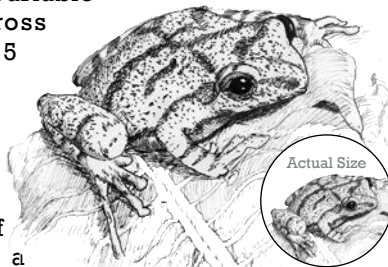
half inch frogs. They are not always on the ground. Distinctive disks on their toes help them climb. I usually count on seeing a few peepers over the course of the spring on the outside of my kitchen windows. In contrast, the wood frog (*Rana sylvatica*) is larger, at one and a half to three inches, and typically brown in color. Its most distinctive feature is a dark mask extending from its eye to eardrum.

Both spring peepers and wood frogs hibernate in upland areas close to their breeding sites. Typical locations are under logs and leaf litter. Don’t those sound like cold spots? Being ectotherms, peepers and wood frogs cool as the ambient temperature decreases and their bodies truly freeze. The range

of wood frogs extends to the Arctic Circle and so scientists extensively study their amazing ability to survive freezing. Their body fluids freeze while their cells remain protected. Although some water in frog cells is drawn into the blood, cells do not collapse because highly concentrated glucose (sugar) from the liver is transported to the cells. During freezing, the heart stops and brain activity ceases. The frogs withstand cycles of freezing and thawing as the



Wood Frog



Spring Peeper

weather changes throughout the winter. Upon spring thaw, wood frogs, and then peepers, recover amazingly fast and vital functions are restored in a matter of hours. This recovery is in sharp

contrast to that of pond hibernators such as green frogs, bullfrogs, and leopard frogs, which cool but do not freeze. These frogs spend the winter on or partially buried in pond muck, absorbing oxygen from the water through their skin. They start breeding activities later in the spring when pond ice melts and the water warms significantly. Thus, wood frogs are first to arrive at vernal pools – shallow, temporary wetlands formed from melting snow and often still rimmed with ice. If you hear what sounds like ducks quacking in a forest, there is an excellent chance you have found a breeding area for wood frogs. Their breeding season is short — only a few weeks — so

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FORGING TRAILS

A VISIT TO ISRAEL

In the first week of February I had the very great pleasure of attending and presenting at a seminar on Osprey Migration in Israel’s Hula Valley. Other invited guests included Osprey researchers from Scotland, England, Finland, Estonia, Spain, Italy, Basque (Spain), Germany, Holland, Palestine, Jordan, and of course Israel. We gathered for four days of presentations, field trips, and discussion.

The primary goal of the seminar was to develop a coordinated international approach to integrate satellite tracking studies with education along Osprey migration flyways by:

- Initiating links between researchers using GPS satellite transmitters on Ospreys
- Identifying key education aims and objectives, relating specifically to bird/Osprey migration
- Using new digital technology (websites/Google Earth/Skype/social media/webcams, etc.) to link

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FORGING TRAILS continued from page 1



schools and other education establishments along Osprey migration flyways in a new and exciting way

- Discuss how the work can be extended to other species of birds, mammals, and reptiles.

My presentation focused on our Osprey education program and experiences with using Ospreys as a teaching tool.

Our hosts provided a fantastic tour of some of the best birding hotspots in the country. Israel is an important flyway between Eastern Europe, Asia, and Africa. Millions of migrating birds pass through every spring and fall and many species spend the winter here. The variety and numbers were overwhelming. Imagine 30,000 cranes in one field — the noise is deafening. I saw five species of Eagles in one morning, thousands of Black Kites, and vast flocks of Black Storks, Glossy Ibises, and Spoonbills. Even the “backyard” birds were all new to me: iridescent purple and blue Palestine Sunbirds, Spectacled Bulbuls, Laughing Doves, and non-native, but well-established Parakeets.

I had the pleasure of spending time with some of Israel’s top bird conservation officials and field workers. In addition to talking birds, it was fascinating to get a greater insight into the political and religious aspects of this volatile region. I also got to see several iconic locations such as the Sea of Galilee, the Golan Heights, and the Judean Desert.

We all came away with new friends and professional colleagues and the beginnings of an action plan to start connecting schools in Europe, Africa, North America, and South America in meaningful and impactful ways. Stay tuned!

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

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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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RENEE LIEBERT



Renee lives in Ashland with her husband Mark and children Laura (7) and Sam (5). Both Renee and Mark operate their own companies in the Lakes Region. Renee owns Joyful Earth Gardening, which provides garden design, installation, and maintenance services. Mark owns Tree Solutions, LLC, which is a full-service tree care company.

My husband Mark and I met while studying forestry in college. We moved to the Lakes Region in 2005. He owns a tree care company, and I own a gardening company. We both love being outdoors — hiking, boating, or just sitting and enjoying a beautiful day.

Our first visit to the Science Center was on my very first Mother's Day in 2006. We had our daughter Laura in the stroller. She was only five months old, so she slept in the stroller for most of the visit. I fell in love with the trail, and it was a beautiful, stroller-friendly place to walk, so we decided to become members. I was there that season at least once and sometimes twice a week, pushing my daughter through the exhibit trail. I also hiked up Mt. Fayal with Laura riding in a backpack. As she got older, she became more and more excited about the animals and the interactive exhibits. Her brother, Sam, was born in July 2007, and we continued to walk the exhibit trail once or twice a week. They memorized the order of the exhibits and would act like little tour guides whenever grandparents would come to visit. Their favorite exhibit was always the skunks. Mine was the birds. We would sit quietly and watch different birds come to the feeders, always getting the most excited when a hummingbird appeared.

When Sam was 3 and Laura was 4, the Blue Heron School opened. We thought it was a wonderful opportunity for the kids, so we signed them up. I'm so thankful that we did. My children love to go outside in all kinds of weather — it's not uncommon to see them outside in the rain playing in puddles. They love hiking through the woods with us and pointing out moss and lichen, looking for scat or footprints, or turning over rocks to see if they can find any decomposers. Beyond the environmental education, the school encouraged self-reliance and problem solving. Now that my kids are in public school, the teachers praise their ability to work out conflicts with their peers and to work independently. The school complements the Science Center well and in a world where kids are spending less and less time outside, it's wonderful to see a program where the kids are outside everyday sliding on their bellies like otters, or hopping like rabbits, and just developing a love and appreciation for the natural world around them.

NEWSBRIEFS

- ◆ In 2012, Annual Fund donations totaled \$298,671, exceeding our \$286,000 goal. We are grateful for the generous support from more than 420 families, foundations, and businesses.
- ◆ Revenues for 2012 finished at \$1,269,212 or 98% of budget. Despite keeping overall expenses at \$21,853 below budget, once the audit is done in late spring, the year most likely will end with a budget deficit of about \$12,600. Shortfalls occurred in admissions, lake cruises, and retail income. Contributions, special events, and program income all exceeded budget.
- ◆ Trail visits equaled 44,200 guests in 2012, almost level with 44,488 in 2011. Lake Cruise attendance remained strong with 9,300 participants, up from 8,125 in 2011. School children and teachers from across the state numbering 15,466 attended a program, at the Science Center or at their school site, compared to 14,669 in 2011. Educators taught an additional 86,000 people across the state in non-school outreach programs.
- ◆ In 2012, 210 regularly scheduled volunteers donated 8,379 hours and another 518 hours came from single project volunteers, for a grand total of 8,897 hours. This is an increase of 11% over last year's 8,003 hours.
- ◆ An interactive SMART Board 885ix was installed in February in the Tamworth Pavilion. This gift from an anonymous donor will be an exceptional resource now available for many educational opportunities. It uses a dedicated laptop computer and comes complete with a sound and projection system and training for staff.
- ◆ Our Sponsor A Species program is changing. Watch for news about it in the summer issue.
- ◆ Squam Lakes Natural Science Center welcomes donations to the Blue Heron School Scholarship Fund. Please contact Janet Robertson at 603-968-7194 x 12 to learn more.
- ◆ From May through October join us at the River Otter Exhibit every Monday, Wednesday, and Friday at 11:30 a.m. to see our two playful River Otters have an early lunch. Our expert volunteers will tell you all about Otter biology and ecology, while also serving up a tasty treat or two.

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NATURALIST'S CORNER

THE RETURN By Jeremy Phillips

Immature Broadwing



It always amazes me how fast things happen in the spring. By the end of March many hawks have returned and are settled in ready to start rearing chicks, the warblers are in full throttle finding breeding grounds or continuing northward, amphibians are calling, and mammals are enjoying the feast of the spring plenty.

I always keep my eyes and ears to the sky this time of year. I scan the treetops at home hoping to find something a little out of place that is not part of the tree. My ears are constantly open and listening for a high pitch whistle. Looking up into the white clouds I see a small dot circling to gain altitude. It is soaring above a field behind the parking area. The dot dives until it is within view visually confirming that it is what I am looking for. The beautiful broad-winged hawk (*Buteo platypterus*) races over my head, its rusty-brown chest and head visible, along with the broad black and white stripes on its tail. Finally, it races out of sight, west, over the trees.

Broad-winged hawks may travel more than 4,300 miles in their round-trip migration to South America and back. Upon their return to New Hampshire they look for a nest site and a partner. If you look into the sky you might see some of the most beautiful displays of courtship. Broad-winged hawks can be seen circling above, performing many aerobatic maneuvers including dives, semi-roles, and even interlocking talons with other broad-winged hawks.

Although noticeable during flight, these common birds often go unseen because they spend most of their time in the woods, especially once they are nesting. The nest is made from twigs and can be a little over two feet in diameter. The nests are usually in deciduous trees. In our area they generally lay two to three eggs, which take a little over three weeks to hatch. The chicks will leave the nest in forty to forty-five days.

Broad-winged hawks are one of my favorite animals to look for as the seasons change, whether early fall when they migrate south by the thousands or their triumphant return to their breeding grounds in the spring. Keep your eyes to the sky and listen for the long "p-reee" whistle to signify their presence. A walk in the woods may lead you to their nesting area or other amazing things.

FROM THE HERON'S NEST

By Laura Mammarelli



Volunteers, including Pam Stearns, shown above, visit Blue Heron School each week to listen to young children who are learning to read. The children look forward to "Reading Club" days as they practice their emerging skills with a reader series. Teachers and children all appreciate the hours the volunteers spend helping. We enjoy the time they spend with us.

Blue Heron School, a nature based Montessori school for children ages three to six, operates from Monday through Friday, 8:30 a.m. to 1:00 p.m., September to June. Blue Heron School starts its fourth year in September and is now accepting applications for enrollment. For an application or more information, contact Laura Mammarelli at 603-968-7194 x 40 or blueheron@nhnature.org.

FROG QUIZ

- Which New Hampshire frog generally calls first in the spring?
A. Wood Frog B. Spring Peeper
- True or False?** All New Hampshire's hibernating frogs have the ability to freeze for short time periods.
- This frog's call sounds like a quacking duck.
A. Gray treefrog B. Green frog C. Wood frog
- True or False?** Vernal pools are NOT used by wood frogs for breeding because they dry up too quickly.
- Which frog is a climber?
A. Leopard frog B. Spring peeper
C. Wood frog

ANSWERS

1. A 2. False. Only wood frogs and spring peepers undergo freezing. 3. C. 4. False 5. B



GARDENER'S NOTEBOOK



GARDEN WASTE?

By **Brenda Erler**

As spring rolls in and plant growth takes off at warp speed, some landowners wonder what to do with the mounds of grass clippings that may accumulate in their lawns. Can the clippings be used as mulch in their gardens? It seems like a great way to reduce lawn waste, but is it really?

First, why mulch in the first place? Mulching serves a number of important functions in any garden. Mulch helps conserve moisture in the soil, reducing the need to water between rainfalls. If applied deeply enough (around three inches), mulch helps prevent weed growth by shading weed seeds and prohibiting germination. Mulch acts as soil insulation, keeping soil cooler in hot weather and warmer in cold. This can help plants thrive, especially those with shallow roots. Adding mulch can create a pleasing background that highlights your plants. And, perhaps most importantly, organic mulches like shredded leaves and bark add organic material to the soil, improving the soil structure, boosting soil microbes, and adding valuable nutrients.

Now, back to the question of whether grass clippings should be used as mulch. There are a number of reasons to avoid them.

Fresh grass clippings compress to a slimy mat when applied to garden beds. Three to four inches of grass

clippings will settle down to less than an inch of mulch once they dry out, reducing their benefit as mulch.

Grass clippings decompose rapidly, emitting an unpleasant odor.

If applied deeply enough to be worthwhile as mulch, the clippings release heat as they decompose, potentially damaging plant roots and disrupting soil temperatures.

They dry to a light brownish-yellow color that is not pleasing as a background.

Grass clippings may be contaminated with fertilizers, weed killers, or insecticides that could adversely affect your vegetables or ornamental plants.

So, instead of worrying about how to use your grass clippings, try to avoid producing them in the first place. Keep your lawn small and concentrate mostly on native plantings that don't require mowing (saving fossil fuels in the process). If you must mow, do it often enough that you only remove the top third of each blade (no more than one inch at a time). The smaller clippings will settle back to the lawn's soil surface, eliminating any need to pick them up. They provide a natural jolt of nitrogen for your lawn. That's free organic fertilizer! Plus, they provide food for the soil bacteria that break down thatch. If your lawn gets ahead of you from time to time and you must rake the clippings, mix them into your compost pile just as you would manure. They'll heat up your compost pile and speed decomposition. Garden waste? No!

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

Wiggle, HOP. Fly. Smell, Taste, Touch...

Parents made these comments about last year's GUIDED DISCOVERIES:

"We didn't know what to expect, but it turned out to be a phenomenal experience for our boys. They thoroughly enjoyed themselves and looked forward to every day."

"Excellent unique art program – just love the combination of science, wildlife, and art to make learning and exploring fun."

"My son says he already knows he wants to sign up for Guided Discoveries next summer."

Registration for Guided Discoveries is open and summer will be here before you know it. Seventeen different week-long adventures in learning are waiting for your children ages 3 to 14. And if you are a member, you can save from \$20 to \$30 per program.

Call 603-968-7194 for reservations.

www.nhnature.org/programs/guided_discoveries.php

The 2013 Scotland Trip is FULL



But, Iain is already planning a 2014 trip to the Orkney and Shetland Islands.

Call Iain to get on the itinerary list.

(603) 968-7194 x 23



NATURAL ADVENTURES



VERNAL POOL PROWL

Tuesday • April 23 • 10:00 to 11:30 a.m.
Adults and children ages 6+

Vernal pools are temporary pools of water that provide habitat for distinctive types of plants and animals. We will discover what makes them so special as we explore a nearby pool.

Cost: \$6/member; \$8/non-member

COYOTE CAPERS

Thursday • April 25 • 10:00 to 11:30 a.m.
Adults and children ages 5+

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 mysteries about them. You will learn about coyotes through activities, stories, and a visit with our four-year old coyote.

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

TURTLE TRAVELS

Wednesday • May 15 • 1:00 to 2:30 p.m.
Adults and children ages 3 to 5

Come along to explore the places turtles call home. We'll have fun with a turtle craft and meet live New Hampshire turtles as well. Adult must accompany children at no additional cost.

Cost: \$5/member; \$7/non-member

SPRING WILDFLOWERS

Saturday • May 25
10:00 a.m. to 12:00 p.m.

Adults and children ages 12+

The sun is out, the snow has melted, and the natural world is bursting forth with new growth. Now is a great time to search the fields and forests for the fleeting beauty of spring wildflowers. Explore with Naturalist Eric D'Aleo to look for and identify the obvious, and not so obvious, spring wildflowers in our area.

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

FIFTY YEARS OF SCIENTIFIC DISCOVERY AT THE HUBBARD BROOK EXPERIMENTAL FOREST

Tuesday, June 4
7:00 to 8:00 p.m.

Adults and children ages 16+

Hubbard Brook Experimental Forest, located in North Woodstock, is the world's longest running, most comprehensive ecosystem study. The continuing ecological record is

invaluable for identifying and helping to solve vexing environmental problems through significant research. Timothy Fahey, Ph.D., forest ecology professor at Cornell University in the Department of Natural Resources and a trustee and Principal Investigator at Hubbard Brook, will discuss Hubbard Brook's 50 years of research.

*No charge to attend,
 but reservations are required.*

ANNUAL BREEDING BIRD CENSUS

Saturday, June 8

Session 1 - 5:30 to 8:00 a.m.

Session 2 - 8:00 to 9:30 a.m.

Adults and older children

For over three decades Senior Naturalist Dave Erler has conducted a census in early June of bird species that nest on the Science Center campus. The census is done primarily by ear, listening for territorial songs of male birds, which indicate probable nesting. This is a great opportunity to hone your bird song identification skills. The early session (5:30 a.m.) involves canvassing two forested zones, including Mt. Fayal. The later session (8:00 a.m.) covers fields, exhibit areas, and Kirkwood Gardens. Binoculars are available at no extra charge, or bring your own.

No charge, but reservations are required.

GROWING GREAT FLOWERS FOR NEW HAMPSHIRE

**INCLUDING OLD FAVORITES
 AND LESSER KNOWN BEAUTIES**

Monday, June 17

6:30 p.m.

Adults

Garden writer Henry Homeyer will share tips and suggestions for growing a wide range of flowers in New Hampshire. He will share a slide show of his gardens and answer your questions. Henry is a lifelong organic gardener, a UNH Master Gardener, and a gardening columnist for 12 New England newspapers. A regular commentator on Vermont Public Radio, he has also taught sustainable gardening at the college level. He has written four books; some will be for sale after his presentation. This program is in the Red Barn adjacent to Kirkwood Gardens. Come early to stroll in the gardens beforehand.

*No charge, but reservations are required.
 Donations are welcome.*

SPRING BIRDING

Fridays

May 17, 24, 31 • June 7, 14, 21, 28
7:00 to 10:00 a.m.

Adults and children ages 14+

In partnership with the Squam Lakes Conservation Society, the Science Center is offering weekly bird identification programs. Join Iain MacLeod, Bob Ridgely, Rick Van de Poll, or Tony Vazzano for this series of beginning birding programs. Learn to identify the huge variety of birds that fill our woods, meadows, and wetlands each spring. Explore a variety of habitats in the Lakes Region. Learn identification by sight and sound and build upon your bird ID skills each week.

Iain will lead trips on May 17, 24, 31, and June 7; Rick Van de Poll on June 14; Tony Vazzano on June 21; and Bob Ridgely on June 28.

Cost per program:

\$12/SLNSC or SLCS member;

\$15/non-member

PRESCHOOL SERIES

MINDS IN MOTION

June 12 • July 10

August 14 • September 11

9:30 to 10:30 a.m.

Adults and

children ages 3 and under

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*

SPECIAL EVENTS

Kirkwood Gardens Day

Saturday • June 8

9:00 a.m. to 1:00 p.m.

Gain inspiration from Kirkwood Gardens and find beautiful plants for your own garden

- ✿ Fine perennials from a prestigious New England nursery
- ✿ Silent Auction of desirable plants and garden-related items
- ✿ Plants from knowledgeable local gardeners
- ✿ Creative planters and handmade items
- ✿ Expert opinions and advice
- ✿ Coffee, cocoa, tea, cold drinks, and baked goods for sale

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Established 1995

Generously sponsored by:



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Clean Up Day

Saturday, April 20 • 9:30 a.m. to 1:00 p.m.

We invite you to don a pair of work gloves and join us for our annual Clean Up Day. Choose from a variety of tasks to help prepare trails and grounds, including Kirkwood Gardens, for our opening day on May 1. Some projects are messy and most work is outdoors, so dress appropriately. If you can, bring your own leaf rakes too. Volunteers and staff share a complimentary picnic lunch at noon. Groups and families are welcome.

Contact Volunteer Coordinator Carol Raymond to register at 603-968-7194 x 22 or carol.raymond@nhnature.org.

New Hampshire Day

Saturday, May 4 • Trails open at 9:30 a.m.
\$3 admission for New Hampshire residents

Thanks to the generous sponsorship of



Celebrate the start of the 2013 trail season on New Hampshire Day! Shop for bargains at the Howling Coyote Gift Shop sale. Get energy saving ideas from Dead River Company.

Up Close to Animals live presentations at
11:00 a.m. • 1:00 p.m. • 3:00 p.m.



CREATURES OF THE NIGHT

Sunday • June 2 • 11:00 a.m.

You don't have to stay up late to learn about elusive nocturnal animals. Meet some live animals seldom seen during the day, such as bats and owls. The International Dark Sky Association will show you how to help preserve the night sky. No reservations required.

Cost: free/member; \$15/adult, \$12/senior, \$10/youth, age 2 and under free/non-member

Save these Dates

**SUNDAY
MAY 12**

MOTHER'S DAY

Free admission for
moms with another
paid admission

**WEDNESDAY
MAY 1**

**TRAILS OPEN
FOR THE SEASON**

Welcome Back!
9:30 a.m. to 4:30 p.m.
Last admission 3:30 p.m.

**SUNDAY
JUNE 16**

FATHER'S DAY

Free admission for
dads with another
paid admission

SQUAM LAKE CRUISES

New Hampshire is famous for its picturesque lakes and mountains and 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 guided tours on beautiful Squam Lake.

EXPLORE SQUAM

May 18 to June 30 — Daily • 1:00 p.m.

July 1 to August 31 — Daily
11:00 a.m. • 1:00 p.m. • 3:00 p.m.

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 30 years ago. Watch Common Loons and Bald Eagles, regularly seen, but best viewed while nesting from May through August.

NATURE OF THE LAKES

July 2 to August 29

Tuesday, Wednesday, Thursday — 4:00 p.m.

September 3 to October 10

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

Learn about the 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.

BALD EAGLE ADVENTURE

May 21 to June 25 — Tuesday • 3:00 p.m.

Join Executive Director Iain MacLeod for a special Bald Eagle Adventure to view these magnificent birds in their natural habitat. The cruise focuses on the recovery of Bald Eagles as a nesting species in the state, with particular discussion about the pair of Bald Eagles that has nested on a Squam island since 2003 and fledged 18 chicks.

LOON CRUISE

June 10 to August 30

Every Monday and Friday—3:00 p.m.

We are delighted to join forces with our friends and colleagues at the Loon Preservation Committee (LPC). Offered twice a week, these cruises focus on Common Loon conservation, biology, and monitoring. A Science Center naturalist joins an LPC biologist who guides the tour and discusses the work LPC does across the state and on Squam to protect these extraordinary birds. This special cruise route is designed to maximize Loon observations.

EXPLORE SQUAM • NATURE OF THE LAKES BALD EAGLE ADVENTURE • LOON CRUISE

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

New!

DINNER AND SUNSET CRUISE

Thursdays • July 11 to August 8
Dinner at 5:00 p.m. • Cruise
departs at 6:30 p.m.

Start your evening with a delicious, fixed-price dinner at Walter's Basin Restaurant, followed by a sunset cruise on Squam Lake. This guided tour showcases Squam's beauty as dusk falls. The guide discusses the natural history, wildlife, and people.

Cost: \$50.00 per person
Not recommended for children

LAKE EXPLORERS – A FAMILY CRUISE

July 9, July 23 • August 6, August 20
10:00 a.m.
Ages 5+

Experience the excitement of Squam Lake as active explorers. This family-style cruise gives children an opportunity to use binoculars, search for loons, collect microscopic life, watch live fish, participate in a scavenger hunt, and test their navigational abilities. Get on board for a cruise that could spark an interest to last a lifetime.

Cost: \$15/member; \$17/non-member

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

SHARE THE DISCOVERY BECOME A DOCENT IN 2013



FIRST GUIDES TRAINING

June 24, 26 • 9:30 a.m.–4:30 p.m.
June 28 - 9:30 a.m. to 1:30 p.m.
Ages 14 to 17

First Guides are teen volunteers who demonstrate natural artifacts on the live animal exhibit trail, accompanied by adult volunteer docent mentors. First Guides also assist with Guided Discoveries courses for children.

Cost: \$50 (financial aid available)



DOCENT TRAINING

June 18, 19, 20
3:00 p.m. to 8:00 p.m.
AND
June 22
9:00 a.m. to 2:00 p.m.
Ages 18+

Docents are volunteers trained to interact with guests on the live animal exhibit trail. Docents also travel to off-site programs to

assist naturalists, serve as mentors to First Guides, help with animal training, and represent the Science Center at local fairs.

Cost: \$50 (financial aid available)

For more information or to register contact Carol Raymond, Volunteer Coordinator, 603-968-7194 x 22 or carol.raymond@nhnature.org

DYNAMIC DUO continued from page 1

don't delay a visit. When they detect an intruder, all is quiet but if you wait silently, soon they will begin calling again and you can spot their heads just above the surface. Wood frogs lay eggs in clusters of perhaps 1,000 eggs on twigs near to the water's surface, clearly visible if you look closely. Eggs hatch in approximately three weeks. In another two months, tadpoles transform into tiny frogs that you can see hopping along the forest floor with their miniature black masks.

The "sleigh bell" chorus of spring peepers joins the quacking of wood frogs within just a few days. How can these tiny frogs make such loud calls? The sound resonates in an expanded vocal sac under the male's chin, boosting the volume of this quick high-pitched whistle. You hear them calling from shallow ponds or flooded depressions in fields, about once per second or up to 4,500 times each night. Peepers are not in the water, but perched low on grasses and other plants, defending a miniature territory. If a male invades another's space, the resident will call with a short aggressive trill. Try your luck at hearing this lesser known call, easier to hear early in the season. Each female lays 800 to 1,000 eggs, which are difficult to detect because they are laid singly or in small clusters on submerged plants. Hatching is speedy, in about a week, followed by close to two months of life as tadpoles. Adults eat ants, beetles, and spiders, but mostly remain hidden in leaf litter.

If you are excited about hearing the first wood frogs and spring peepers, stay tuned for other musical selections that follow. As the weather continues to warm, listen for the long, gentle trilling of American toads, the loud, assertive trills of gray treefrogs, the banjo string plunk of green frogs, and finally, the low "jug-o-rum" call of the bullfrog. The "encore" of the spring season goes to the frogs!

StoryWalk™

Sponsored by Meredith Village Savings Bank

June 27 through July • Daily 9:30 a.m. to 4:30 p.m.

Bring your family to enjoy a new StoryWalk™. This year's featured book is *The Witches* by local author Andy Opel. StoryWalk™ is presented in collaboration with the Holderness Library and Holderness Recreation Department. StoryWalk™ opens with family activities and refreshments on June 27 from 10:00 a.m. to 11:30 a.m. Andy Opel will sign your book; a limited supply is available for purchase. StoryWalk™ is located behind the NH Fish and Game parking lot. Please park in town or at the Science Center, not in the lot reserved for boat trailers.

No charge and no reservations are required.



Save the Dates! SUMMER EVENTS

SQUAM LAKES ARTISANS GALLERY OPENS

Wednesday • May 22

OPEN DAILY
Locally Crafted Gifts

ANOTHER WILD SATURDAY NIGHT!

July 20 • 6:00 p.m.

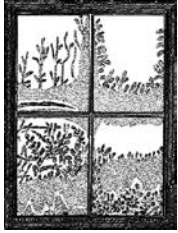
*"Live from Squam Lake,
it's Saturday Night!"*

Comedy variety show, live music,
silent and live auctions, appetizers,
dessert, and cash bar

ANNUAL MEETING

Saturday • August 10

Pancake Breakfast
for Members
Business Meeting for
election of
officers and trustees



OPENING A WINDOW TO THE NATURAL WORLD

IRAs AND CHARITABLE GIVING

Congress recently passed the American Taxpayer Relief Act of 2012 and as a result, you may now be reevaluating your charitable giving. One significant provision of the new law is the IRA Charitable Rollover. For gifts made through December 31, 2013, persons aged 70 ½ or older may make a direct transfer of up to \$100,000 from a traditional or Roth IRA to a qualified public charity, such as Squam Lakes Natural Science Center. While the rollover will not qualify for a federal charitable income tax deduction, the amount donated won't be part of your taxable income. You can make Charitable IRA Rollover gifts throughout 2013 and have them count toward your 2013 required minimum distributions. Gifts must come directly from your IRA custodian and not from your personal checking account.

If you are under age 70 ½, you can still make a bequest from your IRA for a future gift that will not affect your income today. Most plans now provide beneficiary designation forms online, which allows a quick and easy way to make a change. A bequest may qualify your estate for an estate tax charitable deduction and other tax savings. You can also designate the Science Center as a contingent beneficiary of your IRA, after naming your children first. But your children may face estate tax, plus Federal income tax and state tax and may decide to surrender their interest. As a contingent beneficiary, the Science Center can receive and use the full value of the IRA for its charitable purpose and your estate still benefits from an estate tax deduction.

Thank you for your consideration of a gift for 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.

WISH LIST

- coolers
- milk crates
- 2-quart plant pots
- AED for use on boats
- paper shredder
- laminating machine
- toys for the animals such as Boomer balls, Kongs, Crazy Klusters, Safari Balls, and Foraging Balls
- minivan in good condition
- iPad or similar tablet computer

We are grateful for these memorial and honorary gifts received from October 1 through December 31, 2012:

In memory of Ellen Fabian Barry
Georgene and Rick Fabian

In memory of Dr. and Mrs. L. Betts Copenhaver
Marcia and Dick Barrere

In memory of Mary Denison
Elizabeth and William Dewey

In memory of Christa D'Ercole
Nancy and Paul Beck

In memory of Grace Mattson
Paula Eichner

In honor of Tashia and John Morgridge
Hannelore and Robert Grantham

In memory of Don Parsons
Nancy Parsons and Jim McDermott
Charlie Drago and Donna Parsons
Susan Parsons and Natalie Parsons

In memory of Robert Pothier
Stephen Sanford and Caitlin Bergin

In memory of Greg Smith
Ann and Richard Chalmers
Barbara and Ronald Geigle
Gail Smith and Frances Chalmers

In memory of Marjorie Tuttle
Betsy Athan

NATURALIST'S LEGACY SOCIETY

If you have already named 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.

TRAIL'S END

THE BUSINESS OF THE BLUE HERON SCHOOL

In discussions prior to the 2010 launch of the Blue Heron preschool, trustee Alan English asked this: "the Science Center is very good at imparting education to large groups of people over a short period of time, as when a thousand people walk the trails on a Saturday. Can we also succeed with small groups, over a long period of time?"

We knew when we started we were swimming against the demographic tide. The number of school-aged children has been dropping all over New England for over a decade. The Holderness elementary enrollment has fallen almost 20% since 2003-04.

Still, two and a half years into the program, the answer to Alan's question appears to be yes. Parents are enrolling their kids for a second and third year, and friends and neighbors of our pioneer parents have also sent us kids.

It frankly amazes me that young people are able to do this. While our product is superb (see Renee Liebert's member profile on page 3) and our costs are competitive with other preschools – a small fraction of what people pay in major cities – it's still \$480/month per child. Part of the calculation seems to be that for two-earner families, the cost isn't \$480 but the difference between that and daycare. And I'm told some grandparents, who grew up with the Science Center and love what it did for their children, have been known to underwrite a portion of their grandkids' tuition.

In 2012, the preschool's revenues covered all its direct costs and 60 percent of the automatically-allocated overhead expenses. (The rest of our business lines, excluding boats and retail, cover a smaller portion of their overhead.) It could be argued our overhead expenses would decrease hardly at all if there were no preschool. But more importantly, the enrollment trend we're seeing suggests we could be covering 100% of overhead as early as this year.

Other positive aspects of the preschool business include:

- the fact it's contra-seasonal. Our program activity spikes heavily in late June, July, and August. So the preschool is able to engage our naturalists in their less-busy period.
- it's job-enhancing for our staff, both professionally and personally. Everyone loves working with the kids.
- from a marketing standpoint, we're creating future ambassadors for the Science Center in the community.

We'd like to see enrollment increase from the current 14 to 20 or so. We can handle up to 23 in our current classrooms, and additional space would not be a big problem on our 230-acre, 50-building campus. Where would we find that many parents who can afford preschool? I'm not sure, but did I mention grandparents can help?

*Trail's End is written by Laurie Beeson, Chairman of the SLNSC Board of Trustees.
You may contact Laurie at 603-968-2409 or lbeeson@worldpath.net.*

NEWSBRIEFS continued from page 3



Amy Yeakel, Education Program Director at the Squam Lakes Natural Science Center (left) and Patti Corbeil of New Hampshire Electric Co-op are the first to try the new exhibit at the Science Center in Holderness.

- ◆ "Don't Be a Bigfoot," a new exhibit in the Webster Education Building lobby, sponsored by New Hampshire Electric Cooperative, features two hand-crank generators that compare how much power is needed to illuminate two light bulbs, a 50-watt incandescent and an energy-efficient LED. The exhibit encourages visitors to learn other ways to reduce their own carbon footprint. Amy Yeakel, Education Program Director, says the new exhibit is a good fit with the Science Center's commitment to conservation.
- ◆ Award-winning musician, author, and storyteller Steve Schuch (www.NightHeron.com) is returning to teach Earth Songs, the popular Guided Discoveries program, from July 29 to August 2. The week will culminate in a family concert featuring Steve and program participants. Special thanks to Cottage Place on Squam Lake (www.cottageplaceonsquam.com) for sponsoring Steve's appearance.



Steve Schuch brings Earth Songs back to SLNSC as part of the Guided Discoveries program from July 29 to August 2.

Renew your membership online at www.nhnature.org



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TRACKS AND TRAILS - SPRING 2013

www.nhnature.org

Respect. Integrity.
 Teamwork. Excellence.
 Stewardship.

Values for success.



WELCOME BACK!

Trails open for the season
Wednesday, May 1
 9:30 a.m. to 4:30 p.m.
 Last admission 3:30 p.m.



THE
**HOWLING
 COYOTE**

Gift Shop at the Science Center

Members receive a
10% DISCOUNT

GIFTS * BOOKS * APPAREL * TOYS

**STARTING MAY 1
 OPEN DAILY**

9:30 a.m.-5:00 p.m.

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