



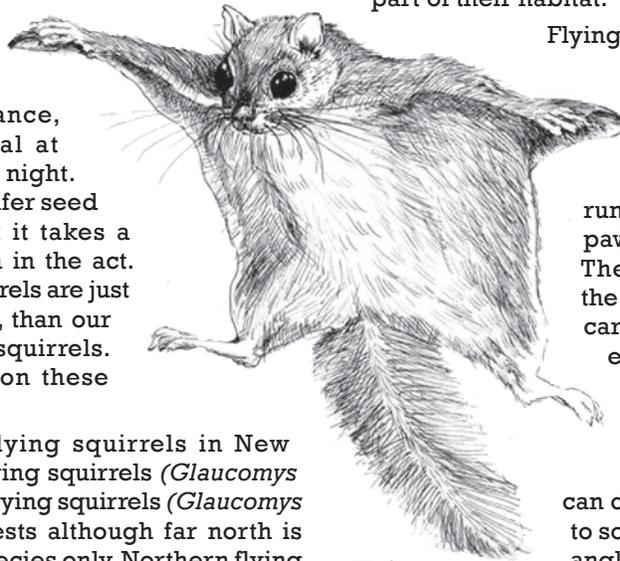
NIGHT GLIDERS

By Margaret Gillespie, Illustration by Cheryl Johnson

“A picture is worth a thousand words.” Some of the more challenging questions Science Center naturalists field about identifying wildlife are over the phone. There are no visuals but certainly an opportunity to have a lively conversation. I remember one memorable exchange about an animal that the inquirer thought might be an Australian visitor because of its huge eyes and resemblance to amazing creatures “Down Under.” By chance, she spotted the animal at her bird feeder late at night. Flying squirrels often pilfer seed from bird feeders, but it takes a night owl to catch them in the act. Surprisingly, flying squirrels are just as common, or more so, than our familiar red and gray squirrels. Let’s shed some light on these elusive squirrels!

We are rich with flying squirrels in New Hampshire. Northern flying squirrels (*Glaucomys sabrinus*) and southern flying squirrels (*Glaucomys volans*) inhabit our forests although far north is home to the northern species only. Northern flying squirrels are slightly larger—about 12 inches in total length and weighing about three ounces. In contrast, the southern flying squirrels are eight to 10 inches in length and weigh approximately two ounces. Both squirrels have a common genus, *Glaucomys*, coming from the Greek “*Glaukos*,”

meaning gray and “*mys*,” meaning mouse. Although not mice, flying squirrels are rodents sharing the associated gnawing incisors. Aptly, the southern flying squirrel’s species name is “*volans*,” Latin for flying. The northern squirrel’s species name, “*sabrinus*,” comes from the Latin word meaning river-nymph. Streams and rivers are frequently part of their habitat.



Flying Squirrel

Flying squirrels are rodents with extra mobility, but do they really fly? The answer lies in an adaptation called a patagium, a flap of furred skin that runs from the wrist of the front paw to the ankle of the hind. The patagia extend beyond the front paws due to a small cartilaginous projection from each wrist. When a flying squirrel leaps from a tree trunk, it is able to spread the patagia and glide through the air. Squirrels can control direction and speed to some extent by adjusting the angle of their appendages and can even get limited lift. Their flattened tails act like kite tails, providing stability. When preparing to land, flying squirrels push their hind feet down and forward, forming a parachute effect with the patagia, which slows the squirrel. Their tails go up for braking.

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FORGING TRAILS

HOW DO WE LEARN?

Technology can be a blessing and a curse. We at the Science Center and others in the natural science education and interpretation field are faced with decisions every day about how to communicate with our audiences. As we plan new exhibits and programs we explore new technology and weigh the pros and cons against “traditional” interactive media. In recent years, we dipped our toes into the distance learning pool, where students anywhere in the world can access programs and other content via the web. Our staff members struggle with the concept of teaching about the natural world while the audience is so far removed from it...sitting in a classroom watching a digital screen. Our staff and programs are at their best when they are in the fresh air; in the woods and fields; under a sky, or clouds, and sun. What makes our programs so special is that opportunity to see, smell, or touch an animal up-close—such as feeling the displaced air from a hawk’s beating wings. Remote “experience” is just not the same.

But do we run the risk of missing the technology boat if we don’t find ways to incorporate technology

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FORGING TRAILS continued from page 1

into our daily interactions with our audiences? New generations use technology that when I was growing up would have seemed like science fiction. We have opportunities to use technology in innovative ways to experience things that cannot be experienced in other ways. Our Osprey Satellite Tracking program is a good example.

How can we incorporate smart phone technology into the visitor experience at the Science Center? How do we embrace the amazing technological capacity of hand-held devices while not diminishing or diluting what makes the Science Center unique?

So...as we plan new exhibits, programs, and experiences, I would love to hear from you about your thoughts on technology use. What would enhance your experience at the Science Center? If you are a teacher, are there new ways that we could communicate with your students and further our mission and your teaching goals?

Please let me know your thoughts at iain.macleod@nhnature.org.

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 North American Association for Environmental Education (NAAEE) selected a team from New England to receive funding for an EECapacity project. The New England Environmental Education Alliance (NEEEA) submitted a proposal to form a Regional Consortium to increase awareness of diversity issues. The mission of the New England EECapacity Consortium is to expand and make more robust the environmental education community in New England. In so doing, "environmental education" will be reimagined so that it is intrinsically inclusive of all practitioners and organizations that aspire to a world of healthy, vigorous, and sustainable communities, people, and natural environment. NEEEA received a \$38,000 grant to support trainings for the Consortium. Amy Yeakel, Education Program Director, serves on the steering committee for this initiative and attended the 41st conference of the North American Association for Environmental Education in Oakland, California in October where over 1,000 people from 20 countries participated.
- ◆ Community Guaranty Saving Bank of Plymouth generously sponsored Festival of Flight in September. Children and adults alike enjoyed fabulous 'Celebration of Flight' shows performed by Ibex Puppetry. Staff and volunteers engaged visitors with a hawk watch, live animal presentations, crafts for children, and what would have been tethered balloon

rides donated by RE/MAX if the weather had cooperated. Longhaul Farm offered lunch for sale.

- ◆ Two Mission: Wolf programs were held in October and attended by 405 adults and children. Mission: Wolf travels the country with Ambassador Wolves to visit schools, universities, museums, and other public facilities allowing audiences to meet wolves face-to-face. Special thanks to Holderness School for donating a wonderful venue.
- ◆ Halloween Hoot N' Howl began in 1991 with live skits about nature with an eerie and often humorous twist. Since then, the annual Halloween Hoot N' Howl has become a beloved event with multiple generations of families coming back year after year for Halloween fun. This year's skits included an animal emergency room, scary scat, a loon diner, and the story of Star Apple. Many of the 230-plus guests dressed in costume in keeping with the Halloween spirit. Special thanks to Moultonborough Girls Scout Troops 10062, 12269, 10093, 10896, and 10592 who carved the jack-o-lantern pumpkins decorating the trail. After the tour, guests enjoyed games, snacks, candy, and hot drinks donated by: Dunkin Donuts, Plymouth; Golden Pond Country Store, Holderness; Hannaford Supermarket, Meredith; Moulton Farm, Meredith; Shaw's, Gilford; and Tootsie Roll Industries. Thank you also to our wonderful volunteers for their help.

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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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STAFF PROFILE

JEREMY PHILLIPS



When you were a kid, where did you go on vacation? From what I can tell, people name a variety of locations when asked. I grew up in Michigan, and the only answer I ever gave was, “Up North.” Up North could have been many different places, such as the Muskegon River, Petoskey, Mackinac City, Tahquamenon Falls, Picture Rock or

the Porcupine Mountains. Put simply, “Up North” meant wilderness. The experiences gained from those trips to the wilderness shaped my inner being to become who I am today and made me want to share those wilderness experiences with others. The wilderness influences people, even those with no knowledge of it.

My experiences from a younger age gave me a respect for nature. I graduated from Central Michigan University with a Bachelor’s degree in Science, majoring in Environmental Studies and Outdoor Recreation. I spent three years in northeastern Pennsylvania working at an environmental education center there. This was when my passion for identifying things really took a leap. I spent much time on the

Kittatinny Ridge along the Appalachian Trail watching hawks cruise the air currents. I was also involved in the World Series of Birding in New Jersey, a 24-hour birding competition run by the Audubon Society there. This was also the place where I came to know the gray fox, which is the most meaningful animal in my life. The gray fox had a den near my cabin and would let me know of its presence using its deep, scratching, bark-like vocalizations.

My favorite instance leading a group was a hike to a beaver pond to look for frogs one spring. We set out just at dusk treading over downed trees, breaking branches, and pushing our way through woods, off the beaten path. We reached the pond with the feeling of squishy moss under our feet and listened to the ear-piercing sound of tens of thousands of spring peepers, gray tree frogs, and the occasional “bong” of a green frog. We listened carefully trying to pinpoint where one of these inch-long frogs could be among the chorus of sound. We found only a few spring peepers and gray tree frogs among the thousands there. On our walk back to the parking lot, a small boy, maybe 10 years old, came to the front of the group and said, “That was the first spring peeper I have ever seen.” This made me feel pretty good. The boy faded back after a few more steps and a gentleman, about 70, spoke softly to me saying, “That was my first spring peeper, too.” As much fun as my job is, moments like these are what makes teaching about nature so amazing.

Why do I enjoy working at the Science Center? Because it’s a life goal of mine to help people learn from wilderness the way I did.

Naturalist Jeremy Phillips worked as Assistant Naturalist from 2007 to 2008. He returned in September 2011 as a Naturalist.

A GREAT GIFT FOR ANYONE!



BENEFITS INCLUDE:

- Free trail admission
- Discounted rates on lake cruises and programs
- 10% Discount at the Howling Coyote Gift Shop
- AZA and ANCA reciprocal admission discounts, and much more!

FLYING SQUIRREL QUIZ



1. **Flying squirrels move through the air by . . .**
 A. flying B. gliding
 C. combination of flying and gliding
2. **The diet of flying squirrels includes**
 A. acorns B. slugs
 C. tree bark D. all of these
3. **How many species of squirrels are there in New Hampshire?**
 A. two B. three C. four
4. **Flying squirrels are . . .**
 A. nocturnal B. diurnal
 C. both nocturnal and diurnal

5. **True or False? Flying squirrels are true hibernators.**

Flying Squirrel—Answers:
 1. B 2. D 3. C (red squirrel, gray squirrel, northern flying squirrel, and southern flying squirrel)
 4. A 5. False

GARDENER'S NOTEBOOK



GARDENING FROM A TO Z

By *Eric D'Aleo*

At this time of year many of us focus on what we are thankful for. Family, friends, and health often come to mind, but what about the garden and natural areas nearby? Here is my A to Z garden reflection list of what I'm thankful for. Try it yourself and rediscover delights of this past year as well as things to look forward to during winter.

- A** Apples harvested for applesauce, apple butter, and dried apples.
- B** Broad-winged Hawks soaring overhead emitting their shrill, piercing call while I pick blueberries. Or is that a Blue Jay fooling me again by mimicking the call of the Broad-winged Hawk?
- C** Chickadees at my winter bird feeder, braving chilly weather.
- D** Dragonflies and Damselflies cruising around the garden pond catching insects or alighting on rushes nearby.
- E** Eggplant harvested from the garden to enjoy in fresh eggplant parmesan.
- F** Ferns of several species in my shade garden, blurring the edge between garden and woodland.
- G** Gorgeous black and yellow Garden Spiders spinning webs among Goldenrod and Irises.
- H** Hearing the buzz of Hummingbirds as they fly past me in search of Bee Balm, Wisteria, or the Hummingbird feeder.
- I** Ice patterns on the pond's frozen surface, contrasted against the bright red branches of Red Osier Dogwood.
- J** Jack-in-the-Pulpit growing hidden in the shade garden, an unexpected surprise for a garden visitor.
- K** Kingfishers and Kestrels heard calling near my garden but rarely seen.
- L** Longing for spring, looking for the first growth that lets you know winter is over...spring has sprung.
- M** Making note of Moose that occasionally move through my yard.
- N** New ideas, natural features, and native plants make a patch of lawn into a natural wonder.
- O** Olfactory input - the smells of fresh onions and garlic pulled from the ground.
- P** Planting in the spring while listening to the pounding of Pileated Woodpeckers on nearby Aspen trees.
- Q** Quiet time in the early morning or at day's end to walk through the garden and reflect.
- R** Rhododendrons in bloom when Rhubarb is ready to harvest—treats for the eyes and the taste buds.
- S** Slowing down to see the seasonal changes in the garden—Tree Swallows in spring and Solomon's Seal in summer.
- T** Tree Frogs trilling on summer nights; tasting a fresh garden tomato; a Tupelo tree ablaze in fall color.

FROM THE HERON'S NEST

By *Laura Mammarelli*



Children at Blue Heron School start the day on the playground, enjoying time with their friends as everyone arrives. Most mornings, howling with the coyote is a favorite activity. The children can hear the coyote while they are playing and they howl back, and he howls back to them. They go back and forth a few times, howling, then pausing to listen, and eventually they go back to playing. It's pretty special to go to school at a place where you get to howl with a coyote!

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. Interested parents may contact Blue Heron School Director Laura Mammarelli, at 603-968-7194 x 40 or blueheron@nhnature.org.

- U** Understanding the importance of what happens underneath my feet in the garden. Composting to build the soil for a vibrant, healthy garden.
- V** Violets, Viburnums, and Virginia Creeper, which bring color into the garden in different seasons.
- W** Watching Witch Hazel bloom in fall and Winterberry Holly's bright berries in December when all color seems to disappear.
- X** Xeriscaping with native plants as much as possible to save water and to have the garden blend in with its natural surroundings.
- Y** Yawning at year's end, with a chance to relax, while yearning for next spring.
- Z** Zzzz...sleeping...zzzzzz or is that the buzzing of bees I hear?

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

NATURALIST'S CORNER

SANDHILL CRANES

By Amy Yeakel

Sandhill Cranes are a special sight for me. These large, ungainly yet majestic birds evoke a regal image with their scarlet crowns. Faraway places like Wisconsin or Nebraska make me think of cranes and their spectacular flights. I received a call from a local resident several months ago inquiring about a large “emu-like bird with a red head.” I could not possibly come up with anything other than a Sandhill Crane, yet the Plymouth area did not seem a likely location.

Sandhill Cranes are large (8 to 10 pounds) birds with long necks and legs. They possess a nearly 80-inch wingspan. They are grayish in color but with a possible pinkish hue, and they possess the characteristic red head. These cranes eat seeds but also some small animals such as insects. They are ground-nesting birds that prefer open grassland areas and wetlands. They can live to be nearly 20 years old. Sandhill Cranes are found in Canada and some parts of the western United States during summer and in Mexico during winter with their migratory routes covering most of the central and western United States. However, the range maps tend to be largely



Photo courtesy Jamie Stewart

empty when you inspect New England for Sandhill Cranes. So had the curious nature watcher really seen a Sandhill Crane? He “googled” the bird at my suggestion and unequivocally exclaimed that was what he had seen. It turns out that Sandhill Cranes are spotted several times a year here in New Hampshire and their presence seems to be on the rise.

Sandhill Cranes are considered to be common with stable populations. I am one person who hopes they become more common in New Hampshire. Keep your ears peeled for their unusual, rattling call—almost the sound of the crane chuckling at your surprise to find them in New Hampshire.

OSPREY TRACKING PROJECT

FASCINATING BUT TRAUMATIC

By Iain MacLeod



Jill being held by Liz Hager

Hundreds of people vicariously travelled with three satellite-tagged Ospreys as they made their migrations from nests in New Hampshire. Two sibling youngsters (Jill and Chip) from a nest in Tilton proved that first-time migrations are extremely hazardous and both were part of the 80 percent of juveniles that don't survive their first attempt. Jill left her nest on September 10 and made a picture-perfect flight down the East Coast, through Cuba, Haiti, and the Dominican Republic, across the Caribbean to Venezuela, and deep into the Brazilian rainforest. After 25 days without a break, and more than 3,900 miles, her signal went dead. The last points

received suggest she met her demise in the remote rainforest just north of the Equator.

Chip, Jill's brother, demonstrated that siblings make very, very different migrations. He left the nest on August 21, but flew only as far as Rhode Island where he camped out for more than five weeks. He resumed his migration on October 7 and headed directly south over the Atlantic. His first day went well, but it was all downhill from there. He hit bad weather as night fell and the next morning was more than 300 miles offshore. He then landed on a boat and travelled east—in the wrong direction. Chip continued to ship-hop over the next several days, landing on at least three and likely four different ships—probably large container ships. After a week he was closer to Portugal than South America and within 400 miles of the Azores when he likely died of starvation. It was an epic journey and unlike any other yet seen from any tagged Osprey.

Our third Osprey had much calmer sailing, demonstrating that experience is everything when it comes to migration. Art is a mature male that we tagged at his nest in Bridgewater in May. He has been nesting there since 2007 so we know that he is at least seven years old, and has made this migration many times before. Ospreys are faithful to both their nesting site and their winter “vacation” site, so we knew that Art knew where he was going...but we didn't. Art made a long but uneventful trip more than 5,000 miles to the Rio Tocantins and Rio Araguaia rivers in east-central Brazil (well south of the Amazon and the Equator). We will monitor his winter foraging and then watch his migration north next spring...five thousand miles back to his nest in Bridgewater.

To learn more about the Osprey Tracking project go to: www.nhnature.org/programs/project_ospreytrack/index.php. This project is funded by Public Service of New Hampshire, the Jane B. Cook 1983 Charitable Trust, and the Science Center's Innovative Project Fund.

NATURAL ADVENTURES

GO WILD WITH CRAFTS

Saturday • December 8
10:00 to 11:30 a.m.

Adults and children ages 4+

Let's have fun with natural materials and learn about nature through crafts. You will transform pinecones, milkweed pods, acorns, seeds, sticks, and other natural treasures into amazing items that you can take home. Meet a wild creature skilled at natural designs. Adult must accompany children at no additional cost.

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

WINTER BIRD BANDING OPEN HOUSE

Saturday • January 5
9:00 a.m. to 12:00 p.m.

Adults and children ages 6+

For over 30 years on the first Saturday following the New Year we have captured and banded birds at a feeding station. Drop in during the morning to learn why birds are banded and get a first-hand look at some common winter birds. Adult must accompany children.

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

FAMILY SNOWSHOE HIKE

Saturday • January 12
10:00 a.m. to 12:00 p.m.

Adults and children ages 8+

Bring the warmly dressed family to enjoy an exploration hike to Mount Fayal. The outdoors is a magical place in winter. We will look for animal signs and do activities reminding us of how New Hampshire's wildlife deals with winter. Snowshoes with crampons are provided at no extra cost. Adult must accompany child.

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

WINTER COASTAL BIRDING

Sunday • January 20
7:00 a.m. to 5:00 p.m.

Ages 16+

Break out the gloves and woolly hats, prepare the hot chocolate and join Executive Director Iain MacLeod for a winter excursion to the New Hampshire and Massachusetts seacoast to search for the hardy bird species that spend their winters with us. Visit Seabrook Harbor to look for gulls and seabirds, then head to Salisbury Beach State Reservation to look for Bald Eagles, Northern Harriers, Rough-legged Hawks, Black Ducks, Gadwall (ducks), Horned Larks, Snow Buntings, and maybe a Northern Shrike. Next we'll go to Plum Island to explore the Parker River National Wildlife Refuge and look for Snowy Owls, Peregrine Falcon, Northern Pintail (ducks), and, as the sun begins to set, Short-eared Owls.

Cost: \$30/member; \$40/non-member

SCHOOL VACATION BIRD BANDING

Wednesday • February 20
Wednesday • February 27
10:00 a.m. to 12:00 p.m.

Adults and children ages 6+

If you are looking for a chance to see wild birds up close, join us to find out why and how we capture and band the birds at our feeding station. Adult must accompany children.

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

ICE FISHING AT THE BOBHOUSE

Saturday • February 23
10:00 a.m. to 12:00 p.m.

Adults and children ages 8+

You've seen bob houses on New Hampshire's frozen lakes and ponds but for some, the appeal of ice fishing is a mystery. What's it all about? How do fish survive without freezing? How do you tell one fish from another? How is the lake changing under its frozen surface? Join us on the ice to discover the answers for yourself. We will drill holes, test water quality, bait hooks, and try to catch and identify some fish in Little Squam Lake. Adult must accompany children. Adult must possess a valid fishing license to fish.

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

LIFE UNDER SNOW

Thursday • February 28
10:30 a.m. to 12:00 p.m.

Ages 6 to 14

Explore the finer points of life under snow during this outdoor adventure. What lives under snow and why do animals go under the snow?

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

WINTER ADVENTURES

Friday • March 1
10:00 a.m. to 12:00 p.m.

Adults and children ages 7+

Explore the natural world of winter with some outdoor activities focused on the wildlife survival in winter. Afterward, go inside to meet one of New Hampshire's winter residents up close. Snowshoes available at no extra cost or bring your own. Adult must accompany children.

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

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

WILD WINTER WALKS

GUIDED TOURS OF THE LIVE ANIMAL TRAIL

Adults and children ages 6+

Do you ever wonder what happens to the animals at the Science Center during the winter? Most of them stay in the same place, just as they would in the wild. A staff naturalist will guide your walk to see live native animals on the Gephart Exhibit Trail and discuss the many ways they are well adapted for winter life in New Hampshire. Be ready to snowshoe and see how beautiful these wild animals are in their winter fur coats. Snowshoes available at no extra cost or bring your own. Adult must accompany children.

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

Sunday • January 13
1:00 to 3:00 p.m.

Saturday • January 19
10:00 a.m. to 12:00 p.m.

Saturday • January 26
10:00 a.m. to 12:00 p.m.

Sunday • February 3
1:00 to 3:00 p.m.

Saturday • February 9
10:00 a.m. to 12:00 p.m.

Saturday • February 16
10:00 a.m. to 12:00 p.m.

Sunday • February 17
1:00 to 3:00 p.m.

Sunday • February 24
1:00 to 3:00 p.m.

Saturday • March 2
10:00 a.m. to 12:00 p.m.

Sunday • March 3
1:00 to 3:00 p.m.

Saturday • March 9
10:00 a.m. to 12:00 p.m.

Saturday • March 16
10:00 a.m. to 12:00 p.m.

Save the Date!
SATURDAY
APRIL 20

**CLEAN UP
DAY!**

SUMMER VOLUNTEER TRAINING OPPORTUNITIES

First Guides Age 14–17

Monday • June 24 • 9:30 a.m.–4:30 p.m.
Wednesday • June 26 • 9:30 a.m.–4:30 p.m.
Friday • June 28 • 9:30 a.m.–1:30 p.m.

First Guides are teen volunteers who demonstrate natural artifacts on the Gephart Exhibit Trail, accompanied by adult volunteer docent mentors. First Guides may assist with Guided Discoveries courses for children.

Cost: \$50 (financial aid available)

Docent Training Age 18 and up

Tuesday • June 18 • 3:00–8:00 p.m.
Wednesday • June 19 • 3:00–8:00 p.m.
Thursday • June 20 • 3:00–8:00 p.m.
Saturday • June 22 • 9:00 a.m.–2:00 p.m.

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 and events.

Cost: \$50 (financial aid available)

For more information or to register for First Guide or Docent Training, contact Carol Raymond, Volunteer Coordinator at 603-968-7194 x22 or carol.raymon@nhnature.org.

NATURE TOURS Hebrides and Highlands

June 13 to 26, 2013



Join native Scot Iain MacLeod for a very personal, small group tour of Scotland's Hebrides and Highlands. Iain is an experienced group tour leader who has organized and led more than a dozen tours of Scotland. The hotels are chosen for their comfort, ambience, hospitality, and excellent food. Iain personally arranges every detail, from flights to meals, transportation, and daily destinations.

The all-inclusive cost includes hotel accommodations and all meals, round-trip airfare from Boston to Glasgow, van transportation in Scotland, and admission fees to nature reserves and other destinations on the itinerary. Cost per person: \$5,500 (double or twin occupancy room; additional \$300 single room supplement).

View a comprehensive illustrated trip itinerary at www.nhnature.org/programs/nature_tours.php. Contact Iain at iain.macleod@nhnature.org to reserve your place or for more information.

Cost: \$5,500 per person

PROGRAMS FOR HOMESCHOOL STUDENTS



USING OUR FIVE SENSES

Ages 4 to 6

10:00 to 11:30 a.m.

December 6: Smell • January 3: Sound

February 7: Sight • March 7: Taste

April 4: Celebrate All Five Senses!

How do we understand and interpret the world? With our senses of course! Learn all about your senses and put them to work as you explore what types of information we get from each sense. Learn how animals use their senses. The focus is on a different sense each month and the last day is a celebration of them all.

BE A SCIENTIST!

10:00 to 11:30 a.m.

December 6: Dendrology

January 3: Ecology

February 7: Ornithology

March 7: Mammalogy

April 4: Entomology

There are many different types of scientists – from Dendrologists to Ornithologists and don't forget Entomologists too. Become a scientist as you develop and test predictions and participate in and conduct experiments. Learn how to use keys and books to identify living and nonliving ecosystem components that make New Hampshire so unique. You will investigate a different scientific field of study each month.



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

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

Program offerings are aligned with the New Hampshire Science Framework.

VOLUNTEER UPDATE

VOLUNTEER RECOGNITION DINNER PARSONS AWARD

Volunteers, trustees, and staff attended the annual Volunteer Recognition Dinner, which was held on Tuesday, September 4, at Rockywold-Deephaven Camps in Holderness. Cross Insurance Agency, Tanger Outlet Centers, and Patty Stewart & Associates generously sponsored the evening. Various awards honoring volunteers were presented at the dinner. In 2011, volunteers contributed more than 8,000 hours of service.

A Volunteer Appreciation Display was created in 2004 in the Trailhead Gallery. "Volunteers Complete the Picture" recognizes volunteer milestones of hours donated in 2011. Volunteers who achieved the 200-hour level were: Laurie Beeson, Celia Connolly, Judy Ellis, Denise Moulis, Nance Ruhm, Karlene Schwartz, Lowell Schwartz, and Pam Stearns. Carol Foley, Eileen Gosselin, Peggy Martin, and Connie Morrison advanced to the 500-hour category. Winnie Oustucky, Diane Potter, and Judy Sniffen moved to the 1,000-hour level.

The President's Volunteer Service Awards is a national program honoring Americans who inspire others to volunteer through their commitment and example. Iain MacLeod presented the Bronze Service Award, for volunteers giving 100 to 249 hours in 2011, to Nancy-Jane Duncan, Carol Foley, Eva Karcher, Susan McKimens, Elaine Melquist, Denise Moulis, Natalie Parsons, Judy Sniffen, Carol Stewart, Lea Stewart, and Sydney Stewart. Volunteers Jim Barry and Judy Ellis received the Silver Service Award for donating between 250 to 499 hours.



2012 Parsons Award recipient Lisa Davis

The Board of Trustees created the Parsons Award in 1996 to honor longtime volunteers Natalie and Don Parsons. The winner of the annual award represents the spirit of volunteerism for her fellow volunteers. Board Chair Laurie Beeson presented the 2012 Parsons Award to Lisa Davis. Lisa is a former nurse who became a docent five years ago. She leads otter enrichment talks, mentors other volunteers, staffs discovery tables, accompanies naturalists on outreaches, and participates in special events.

Lisa's name was drawn from these other volunteers also

eligible to receive the Parsons Award: Jim Barry, Meta Barton, Christine Bird, Dawn Bourret, Dorothy Chekas, Brianne Diermeier, Ellen Edersheim, Judy Ellis, Karen Firmin, Carol Foley, Clara Fowler, Eileen Gosselin, Mari Hoell, Eva Karcher, Susan Kemp, Nikki Keown, Don Margeson, Joan Martin, Peggy Martin, Elaine Melquist, Connie Morrison, Denise Moulis, Diane Potter, Nance Ruhm, Lowell Schwartz, Karlene Schwartz, Judy Sniffen, Pamela Stearns, Sydney Stewart, Carol Stewart, Jan Welch, Marcus White, and Beverly Wood.

BLUE JAY RESEARCH PROJECT

By Dave Erler

First of all, I want to thank all the volunteers who participated in this Blue Jay Research Project. Blue Jays are intelligent, social, omnivorous songbirds that utilize a wide variety of food resources. The project's goal was to determine if social hierarchy in blue jays affects their use of novel foods. Using the Science Center's songbird aviary, volunteers and staff observed the feeding behavior of a captive "flock" of 10 blue jays. Volunteers recorded their observations for two hour periods, usually 8:00–10:00 A.M. Observations focused on identifying each individual blue jay by noting the colored band combinations on each bird's right leg. This might sound fairly easy, but observation proved to be quite challenging depending on the light conditions, the position and posture of the bird, and the speed of the jays as they arrived and departed from the feeding platforms. It was also fun!

The project involved two phases. The first focused on observing interactions between the blue jays at a feeding station to determine which one was the dominant/aggressor and which one was the subordinate/aggressive. After over 100 hours of observation on 46 days and nearly 6,000 blue jay visitations to the feeders we moved to phase two.

Phase two covered 62 days, with observations focused on the use of a different novel food on each day. A novel food was anything potentially edible but something blue jays would not normally have been exposed to, such as a piece of tropical fruit, nut, mini marshmallow, snack cracker, etc. Birds were given a choice of either feeding on the normal diet provided or the novel food. Use of the novel foods varied widely from a low of six total feeder visits by three jays (dried mango bits) to a high of 129 visits in two hours by all 10 jays (green cat food).

Data collection for 2012 is complete, but final statistical evaluation is ongoing. As the sample size is quite small, we hope to continue the project over the next two years. Like most research projects, more questions have come to mind since it started such as: are subordinate birds more likely to steal cached food than dominant birds; does the size, shape, or color of the novel food affect use; how does weather affect activity level; how often during the course of the day do resident Cooper's Hawks visit the aviary and how do the individual birds react? Although it is still too early to tell, a quick look at all the data suggests that the more dominant blue jays were most likely to be the first to investigate a novel food and also most likely to make the most use of the novel food. It will be interesting to see if that trend continues.

I was greatly surprised by the amount of time and commitment volunteers gave. Thanks to the knowledge gained this year, next year will be even better. If you would like to be part of the next year's volunteer team, contact Volunteer Coordinator Carol Raymond to find out when the next training orientation is scheduled.

Again thank you to all the volunteers who made this project possible. I hope everyone involved enjoyed the experience and if nothing else I am sure you will never look at blue jays in quite the same way. Volunteers on this year's team were: Pat James *, Sarah Kelley, Mary Kuhn, Kathy Letsky, Peggy Martin, Missy Mason*, Dom and Irene Morocco, Denise Moulis, Ron Piro, Nance Ruhm*, Olivia Saunders, Bill Sharp*, Lisetta Silvestri, Rob and Carol Stewart*, Marc White*, and Betsy Whitmore.

*Denotes 20 or more hours of observation time

We are grateful for these memorial and honorary gifts received from July 1 through September 30, 2012:

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paper shredder

coolers

plant pots, 2-quart or larger

microwave in good condition

minivan in good condition

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Many businesses across the state provide support through memberships, sponsorships, and in-kind contributions of goods and services. These strong corporate investments help to make the Science Center's education programs possible.

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FLYING SQUIRREL *continued from page 1*

It is not flying but certainly is an amazing way to cover 60 to 150 feet of woodland. Most glides take them over shorter distances of 20 to 30 feet.

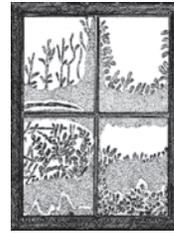
Gliding shortens travel time to food sources and resting spots but also helps flying squirrels escape predators. Like many small tree climbers, flying squirrels have countershading camouflage. They are dark dorsally (on top) and white ventrally (underneath). Clinging to a tree, they blend with the bark; while gliding they are light colored like the sky when observed from below. Owls are major predators of flying squirrels. Other hunters include martin, fisher, domestic cats, bobcats, and coyotes. When flying squirrels sense predators, their first strategy is to freeze. If that fails, they will glide to another tree and may hide on the opposite side. With hind feet that can rotate close to 180 degrees, flying squirrels are adept at moving up or down trees head first. When foraging on the ground, they are more vulnerable.

What is on the menu for flying squirrels? Their diet is best described as omnivorous. An excellent sense of smell helps them find food. Along with the expected acorns, other nuts, and seeds, both species of flying squirrels eat mushrooms, insects, slugs and snails, bird eggs and young, and carrion, particularly in winter. Northern flying squirrels add lichens to their varied diet while southern flying squirrels eat the inner bark (cambium) of trees.

A glance at the large, bulging eyes of flying squirrels tells us one of their major survival senses. In addition to the eye size, these squirrels have a tapetum, a reflective layer behind the retina, which aids night vision of many nocturnal mammals. If a light is shone at a flying squirrel in the dark, the reflection from the tapetum is red. This reflective color varies in different mammal species and thus can aid in identification.

As winter draws close, flying squirrels collect and store a supply of nuts and seeds. Active in winter, these social squirrels assemble in nests, often in old woodpecker holes. People may be surprised by scampering sounds in the attic as flying squirrels can be winter residents there, too. To keep warm, they each curl up in a ball and gather close.

Would you like to meet a flying squirrel? Their nocturnal habits do make them hard to locate. Of course you can do a midnight check of your bird feeder. A daytime alternative is to literally knock on their door! As you walk in the woods, keep a lookout for trees with abandoned woodpecker holes – wildlife gems. Once you find such a tree, keep your eye on the hole and knock on the tree's base. If a flying squirrel is home it will likely pop its gray head out to investigate and a quiet winter woodland reveals a secret to you. The trick to these encounters is to keep your visit short. Also do your best to protect these snag trees that are literally forest apartments. Come spring, these same trees may be nurseries for a new generation of night gliders.



OPENING A WINDOW TO THE NATURAL WORLD

THE SPIRIT OF GIVING: LEADING THE WAY FOR CHILDREN AND GRANDCHILDREN

For many of us, our work, our hobbies and interests, the people we spend time with, and the causes we support, define the values of our lives. This builds a legacy seen by our families, friends, coworkers, and others. One way to involve your family in your philanthropic interests is to tell them what you are doing, and even more important, why. Humans have a basic instinct to contribute to the greater good. Furthermore, giving makes people feel good. You can nurture philanthropic giving in your family by holding a meeting about your philanthropic goals when you get together with your family this holiday season. Another idea is to set aside a special day when family members meet to volunteer together for a favorite charitable cause, such as the Science Center's Clean Up Day in April. Parents and grandparents may also encourage a family culture of philanthropy by matching donations made by children or making tribute gifts for special occasions, such as birthdays and holidays. Make it a family tradition to support 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.

NATURALIST'S LEGACY SOCIETY

Please let us know if you have named Squam Lakes Natural Science Center in your will or other estate plans. Naturalist's Legacy Society members are invited to donor recognition events and recognized in the Annual Report. Your participation may inspire others to follow your lead.

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

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TRAIL'S END

STAFF DIVERSITY QUIZ

On my first civilian job I worked in a “bullpen” with 25 other people. We were all 20-somethings, we all had recent MBAs from expensive schools, we all played golf on Sunday, and we went to the same cocktail parties Saturday evening.

That might have been an OK way to develop and sell toothpaste and Pampers. But to put together an offering that will surprise, delight, and educate 80,000 annual Science Center visitors requires more variety of thinking, more varied backgrounds, more life experience to draw on. That’s why I think it’s great we can count among our staff:

- a woman who, in her spare time, with her husband, is New Hampshire’s largest independent bookseller north of Manchester
- a guy who’s a dedicated ice-fisherman, and who helps caretake family landholdings of some 850 acres
- a woman who has foster parented a half dozen kids, and who’s adopted one very special foster child

- a guy who has run enough miles to take him around the world at the Equator, plus a bunch
- a guy who’s one of two U.S. experts invited to share knowledge of a magnificent raptor species, at a conference in the Middle East next spring
- a woman who raises dairy goats and cows, for milk and cheese
- a great grandchild of Grover Cleveland.

Do you know all of these? They are just seven of the twenty-plus interesting and different histories that our staff members bring to their jobs. If you guessed, Amy, Brian, Clare, Iain, Dave, Laura, and Liz, then you know the Science Center pretty well. If you know which is which, and their last names, you know us really well. If you’re curious to know who’s who, email me at the address below or send a query to info@nhnature.org. And rest assured the programs and exhibits you see from us will reflect lots of differing perspectives.

*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 2



Photo courtesy Lydia Eaton

CLOCKWISE:

Heather Henson's Ibex Puppetry brought Celebration of Flight to the Science Center's Festival of Flight in September.

Mission: Wolf—Ambassador Wolf Program at Holderness School's Hagerman Auditorium in October.

Girl Scout Troops from Moultonborough carve pumpkins for the annual Halloween Hoot N' Howl.

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