



TRACKS & TRAILS

Winter 2015-2016 | Vol. 44, No. 4

MINK MOMENTS

By Margaret Gillespie, Illustration by Cheryl Johnson

Inquisitive, feisty, alert, powerful, bounding, sleek, hardy – all dramatic words to describe what turns out to be quite a small animal with an attitude. Mink don't seem overly concerned with being spotted as they leap from rock to rock on a lake shore. They'll even pause by a moss-covered rock along a stream to scrutinize an observer. Here is wildlife watching us! Let's find out how we can spot them in winter, which haunts they frequent, and what agenda they have in the snowy season.

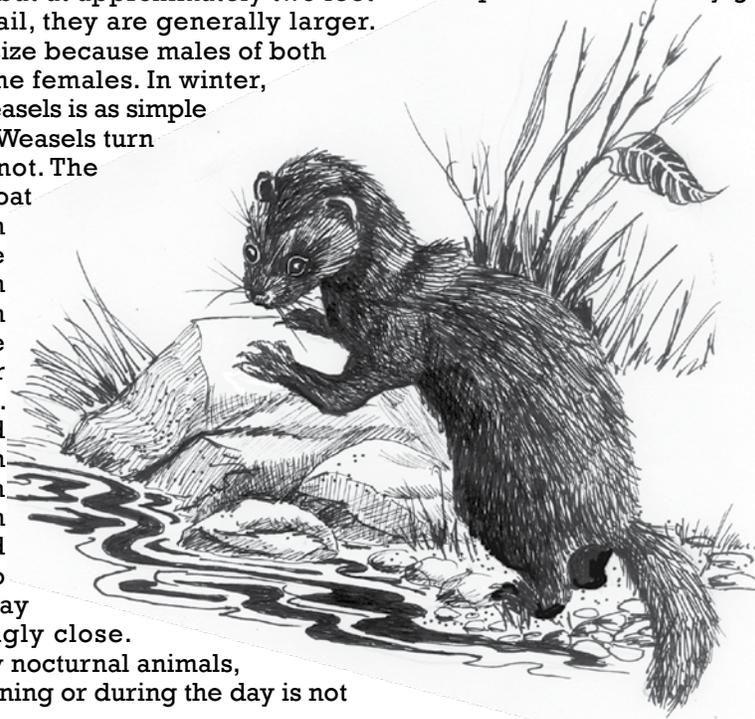
Mink (*Neovison vison*) belong to the weasel family, Mustelidae. Other New Hampshire mustelids are otters, fisher, pine martens, long-tailed weasels, and short-tailed weasels. All have anal scent glands so can be stinky characters if frightened. Mink are most easily confused with long-tailed weasels but at approximately two feet in length, including the tail, they are generally larger. There is some overlap in size because males of both species are bigger than the females. In winter, differentiating mink and weasels is as simple as remembering one fact. Weasels turn white in winter; mink do not. The mink's shiny dark brown coat covers its whole body with the exception of a white patch under the chin with occasional white spots on throat and chest. All these mustelids have similar slender, elongated shapes. With flexible, hunched backs, they bound along in an undulating motion. Often curiosity overcomes caution for mink and they stop and sit up on their haunches to get a better look. They may even approach surprisingly close. While mink are essentially nocturnal animals, spotting them in early morning or during the day is not

rare.

How do we find them in winter? Many animals leave records of their activities in the snow. Mink are no exception. In bounders like mink, the front feet land with the hind feet coming in so close behind them that the pattern looks like a series of paired tracks on a slight diagonal. Look for this sign along the edges of wetlands and woodland streams, the same areas mink favor in summer. Like otters, mink slide down slopes or push themselves along for a bit on their bellies – just leaving a smaller imprint than the larger otter. Mink have no problem diving through openings in the ice for a freezing winter dip in search of food. They are expert swimmers with the ability to dive to depths of 18 feet. Partially webbed toes make a mink's swimming strokes more powerful. Their oily guard hairs repel water while

their dense coat keeps them just warm enough to dig into mud for hibernating frogs or crayfish. There is definitely a limit to their underwater time because of heat loss from the mink's long, slender body.

Mink tracks might lead you to a den site under a downed tree or to a small hole dug into a muskrat den. Moving into a muskrat den has its advantages. Muskrat are prey for mink so invading the den could be a double win for the mink – shelter with a bonus warm meal. How does a mink prey upon much larger animals like muskrats? This intrepid predator nimbly leaps on the prey's back and



continued on page 11

IN THIS ISSUE...

- Page 1 Mink Moments
 - Page 2 Forging Trails: Forest Management Plan
 - Page 3 Staff Profile: Jordan Fitzgerald
 - Page 5 Citizen Science Blue Jay Project Results
 - Page 7 Thank You Volunteers!
 - Pages 8-9 ... Programs and Events
 - Page 11 Trails End: Business Supporters
- And much more!

**HAPPY HOLIDAYS FROM EVERYONE AT
SQUAM LAKES NATURAL SCIENCE CENTER**



**Get Nearer to Nature this winter
with a Wild Winter Walk.**

See page 8 for details.



FORGING TRAILS

FOREST MANAGEMENT PLAN



The Science Center's property of 207 acres is diverse in its forest cover and wildlife habitat. It has been many years since we actively managed the forests through selective cutting and timber harvesting. In spring 2015, at the urging of Facilities Director Tim Curry and after discussion by the Building and Grounds Committee, we hired a qualified forester to create a comprehensive Forest Management Plan. Dan Stepanauskas of Northern Forest Resources came highly recommended and set about the task.

The plan covers 169.3 acres. It includes both the managed forest and 15.9 acres of steep and inaccessible forest and ledge, both of which include and are adjacent to Mount Fayal. The parcel also has approximately 25 acres of both open and brushy fields. The remaining acreage is developed to serve the needs of the Science Center.

Most of this forest has a southerly aspect, which has helped to create and maintain its predominant red oak stands. The soils range widely from rather shallow and droughty with mostly white pine and red oak to deeper and richer sites where sugar maples are found. A good portion of the forestland was thinned 18 years ago, using a whole-tree biomass harvesting system.

An important first step was to give Dan our Stewardship and Management Plan Objectives. This guided the process and ensured that the plan met the mission and philosophical goals of the Science Center. We created eight objectives.

1. **Forest health:** to ensure a healthy, sustainably managed forest that demonstrates a model of excellent forest management in a setting that is safe for visitors and staff, while maintaining forest aesthetics.
2. **Wildlife habitat management:** to emphasize forest bird habitats. A principal goal is to create and maintain a range of forest habitats for a variety of bird species and other native wildlife. The management will create a diversity of management regimes, such as clearings that provide new growth and habitat for species that need these areas for nesting and feeding, while leaving other areas untouched. The goals will integrate with and complement the forest management strategies of neighboring lands to create a broader landscape management overview.
3. **Education:** to incorporate programs and interpretation that educate our visitors about sustainable forest management and habitat management.
4. **Revenue stream:** to create a reasonable net revenue stream from periodic forest product harvests as prescribed over time.
5. **Firewood:** to supply wood for the Science Center's wood heating needs during each scheduled timber harvest.
6. **Aesthetics:** to consider effects of logging on visitors to the property.
7. **Safety:** to improve safety for visitors by removing hazardous trees adjacent to trails.
8. **Harvesting:** to proceed with minimum impact to visitors and harvest only during the months of November through March.

The plan was completed in June. It was then reviewed and accepted by the Buildings and Grounds Committee and the full Board of Trustees.

Dan recommended that the first timber harvest take place this winter on one tract along the northern edge of the property. Dan's insight into the

continued on page 3

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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. Its 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 members and contributors. Comments are welcomed by newsletter editors Janet Robertson and Amanda Gillen.

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STAFF PROFILE

JORDAN FITZGERALD



If you had told me that one day I would work at Squam Lakes Natural Science Center, I would not have believed you. I was the kid that graduated from high school with grand plans of moving to a big city and never coming back. When I graduated I started on that journey by attending a small private college in Boston. Like most 18-year-olds I loved

the freedom and excitement, but it wasn't long before I felt like something was off. I wasn't ready to accept that it was "city" life that was bringing me down, so instead of coming back to New Hampshire, I transferred to the University of North Carolina at Wilmington. While still a city, it was a much smaller one and life moved more at my pace.

During my time in North Carolina, I learned about early childhood education and studied in a variety of preschools and kindergartens. I spent a lot of time observing and found that, while a lot of these programs were great, they were all missing something. I noticed the children had many behavioral problems so I started doing my lessons outside. I was shocked when many of the children couldn't name some of the trees around us, or flowers, or types of insects. I never thought of myself as a real nature enthusiast, but there I was, having a real understanding of the natural world around me and trying

to teach it to these kids. These observations led me to a lot of self-reflection. That is when I knew I had to figure out a way to get kids outside. I needed to learn a way to teach them about nature.

After more time teaching and living in the south, I finally had enough of the nature deficiency and I moved home. It was refreshing and eye-opening. I couldn't believe that I had been so wrong; I wasn't a city girl at all. I loved the woods, and water, and mountains, and NATURE! What an amazing revelation! Not too long afterwards, I heard that the Blue Heron School was opening, and what it was all about. I knew then that was what I was supposed to do. I applied and here I am five years later!

I can't count on my hands how many times I have been working with the kids and the naturalists and I am instantly transported back in time to my own childhood. I remember experiences with nature that I had no idea at the time would end up being so meaningful. So many happy memories rush back to me, including times when I visited the Science Center as a kid. This is my favorite part about working here and with the Blue Heron students. Several times a day, I am reminded of how special this place is and I can see it through a child's eyes. It is the best reminder of why I do what I do. If I can provide a child one meaningful experience with nature, I will have succeeded.

Jordan received her B.A. in Education of Young Children from the University of North Carolina at Wilmington. She also received her Montessori 3 to 6 year old certification from the North American Montessori Center.

FORGING TRAILS *continued from page 2*

most cycles of oaks made this year the prime time to carry out this cut in order to maximize the regeneration of oak in the areas where selective trees are cut. This harvest will happen from late December to mid-January and take about three weeks. Dan has secured timber harvest agreements and marked specific trees to be cut. He will oversee the entire process to ensure it meets the specific goals and requirements of the plan. The net result will be a healthier forest with new growth and selective clearings, a little extra cash in the Science Center coffers, and cord wood to heat our campus for two years.

If you would like more information please contact me.


Iain MacLeod, Executive Director
iain.macleod@nhnature.org
603-968-7194 x 23

NEWSBRIEFS

- September brought staffing changes to Blue Heron School. After years of training, including Montessori certification and on the job classroom practice, Jordan Fitzgerald (*nee* McDaniel) moved to the Lead Teacher position. Assistant Teacher Amy Weston left for other endeavors, including music teacher training. We wish her the best and will miss her great smile and beautiful voice. Jordy Gianforte is a new Associate Teacher, while Laura Mammarelli continues as School Director and substitute teacher on a part-time basis with an administrative focus. Plymouth State University senior Dylan Parker is volunteering at Blue Heron School this fall. He is a childhood studies major from Concord.
- Jordy Gianforte discovered the Montessori educational philosophy while working in Montessori charter schools in New Hampshire. She holds a B.S. in Psychology/Biology and a Masters in Elementary Education from State University of New York, New Paltz. Once she began working in Montessori programs, she continued her education at Seacoast Center Montessori Program and completed her teaching certification at the Lower Elementary level. An avid outdoor enthusiast, her hobbies include snowboarding, cross country skiing, hang gliding, rock climbing, and scuba diving. She also has a business making hang glider harnesses.



Jordy Gianforte

continued on page 4



KIRKWOOD GARDENS PLANT SPOTLIGHT



By Brenda Erler

Snake's Head Fritillary

Fritillaria meleagris

Culture: This bulb grows best in organically rich, moist, well-drained soil in sun to light shade.

Bloom: April to May depending on snow melt

Height: 8 to 12 inches

This European native is great for massing in borders, woodland gardens or naturalized areas. The dainty plants have solitary, drooping, bell-shaped flowers that are checkered in reddish-brown, purple, white and gray. Sometimes called "guinea flower" because of its resemblance to the plumage of guinea hens. Good cut flower.

Kirkwood location: along path between upper and lower garden, growing amongst the daylilies.



Paperbark Maple

Acer griseum

Culture: Easily grown in full sun to part shade in average, medium-moist and well-drained soil. Does not tolerate drought well.

Height: 20 to 30 feet tall with a spread of 15 to 20 feet

This small deciduous tree is native to China. It was introduced to the Arnold Arboretum in the early 1900s. The mature tree has beautiful cinnamon brown, exfoliating bark that looks spectacular in contrast to the winter landscape. The trifoliate leaves turn a lovely red in fall. Great for small properties. Be sure to plant this tree where it can be appreciated (next to a patio or good viewing window).

Kirkwood location: upper garden to the left of the steps



flickr/F.D. Richards



Plant Spotlight and Kirkwood Gardens are sponsored by Belknap Landscape Company, Inc. www.belknaplandscape.com

NEWSBRIEFS continued from page 3

- The Science Center was recently featured on *Giving Matters* on New Hampshire Public Radio. This monthly series, created with the New Hampshire Charitable Foundation, features a different non-profit each month. Our segment aired in August featuring the Kelsey family whose children attend Blue Heron School. You can view the transcript and hear the segment at: <http://nhpr.org/post/giving-matters-connecting-kids-natural-world>.
- The Science Center was named a 2015 Family Favorite by *Parenting New Hampshire Magazine* for Favorite Environmental and Educational Center. The winners are featured in the November issue of *Parenting New Hampshire Magazine*.
- Volunteer docents toured the ECHO Aquarium and Science Center in Burlington, Vermont for their annual field trip in September. In anticipation of our own Water Matters Pavilion opening in 2016, volunteers enjoyed seeing how another organization teaches about lake ecology.
- Volunteer Coordinator Carol Raymond is currently serving as the New Hampshire Association of Volunteer Administrators' interim vice-president.
- Executive Director Iain MacLeod attended the Association of Nature Center Administrators Summit (ANCA) in August, held at the Chattahoochee Nature Center in Roswell, Georgia. He also joined the ANCA Board in August.
- In October, Education Director Audrey Eisenhauer attended a Certified Interpretive Guide Train-the-Trainers workshop through the National Association for Interpretation (NAI) at King's Gap Environmental Education Center in Carlisle, Pennsylvania. The training allows Audrey to continue to instruct volunteer docents in the NAI's Certified Interpretive Guide workshop, which teaches skills for giving meaningful and engaging presentations, delivering a message, and connecting with an audience. See page 12 for training opportunities.
- Education staff members Eric D'Aleo, Audrey Eisenhauer, Dave Erler, Margaret Gillespie, and Jeremy Phillips attended "Climate of Change," the annual conference of the New England Environmental Education Alliance held on November 8, 9, and 10 in

continued on page 6

NATURALIST'S CORNER

CITIZEN SCIENCE BLUE JAY PROJECT RESULTS

By Dave Erler

Over the past three years (2012-2014), many of you visiting the "Celebrate Birds Exhibit" may have noticed some research going on. If you were there early in the morning, you might have seen volunteers as they intently watched the coming and goings of Blue Jays at the feeders inside the aviary. The volunteers were helping with the Blue Jay Project, which grew from a question I had pondered for 30 years while watching Blue Jays at my home. Blue Jays are intelligent social birds and I often watched them jockey for position on feeders. Occasionally, I put "leftovers" in a wire mesh basket near another feeder. I grew curious about which jays would be the first to try the leftovers. Was it the bully at the tray feeder or one the birds that had been chased off?

In 2011, I proposed my idea to answer some questions through a research project at the aviary. The project had three goals:

- Give visitors an opportunity to observe Blue Jays up close.
- Include an accompanying exhibit on Citizen Science.
- Conduct research to determine if social hierarchy in Blue Jays affects their use of novel foods.

In early 2012, the necessary permits were secured and two exhibit panels explaining the project were created. In April the aviary was prepared, Blue Jays were captured, and volunteers took part in an orientation. Before the Blue Jays were released into the aviary they were banded with different colored leg bands so each one could be identified. On May 1 the first phase of observations got underway.

The first phase involved observing the Blue Jays to determine which birds were dominant and which were submissive. This was done by watching and recording which bird displaced another at the feeder. Before each period a flip of the coin determined which of the two tray feeders received the basic diet of commercial mixed bird seed and a commercial captive bird diet. Using one feeder allowed the volunteers to focus on the interactions of the birds as they fed. Volunteers usually made observations in pairs with one observer focusing on the bird's behavior while the other recorded the action. After two months of observations we had enough data to get a good sense of the social hierarchy before moving to the second phase. Over the three years of the study the first phase covered 162 days with 13,988 observations recorded.

In the second phase, observations were made to see which birds would utilize a novel food. Novel foods were items that Blue Jays presumably would not have previously been exposed to in the wild. Fifty different food items were selected, including tropical fruits and nuts, a variety of pet foods, different sizes, shapes, and colors of cooked pasta, breakfast cereals, and snack foods. At each observation a flip of the coin determined which tray feeder received the basic diet and which received the novel food. This gave the Blue Jays a choice of food. The goal was to see which bird would be the first to try the novel food and to see how often the novel food was chosen. Over the three years of the study the second phase covered 140 days with 3,062 observations.



What did we learn? After all the data were compiled and analyzed, the results showed the following:

- There was little size difference between the most dominant birds versus the most submissive birds based on weight and length of wing chord (wrist to longest flight feather).
- Adult birds were twice as likely to be dominant as younger birds.
- Dominant birds were slightly more likely to feed with other birds than feeding alone.
- The submissive birds were slightly more likely to feed alone than with other birds.
- There was no significant difference between the most dominant and least dominant in their total use of novel food, but dominant birds were nearly four times more likely to be the first to investigate a novel food.

As with most research projects, more questions were generated than answered. If you would like to read a more extensive summary of the project you can check our blog, which you can link to from our website, nhnature.org.

Clearly, there is no limit to the number of questions that can be pondered when we consider the complexity of the natural world. For my part, I want to thank the Science Center for allowing me to try to answer one small question that I had often wondered about. I also want to thank the terrific volunteers who gave so many hours to the project. Without their help, I could never have pursued the answers to my question.



FROM THE HERON'S NEST

By Laura Mammarelli



Blue Heron School children went outside with Naturalist Eric D'Aleo to learn about clouds on one beautiful fall day. They used special cloud viewers and identifiers to look up at the sky and learned to name cumulus, cirrus, and stratus clouds. With practice the students can begin to learn what weather to expect by looking at the sky.



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 to June. For more information please visit www.nhnature.org/programs/blue_heron_school.php or contact Laura Mammarelli, Blue Heron School Director, at 603-968-7194 x 40 or blueheron@nhnature.org.

NEWSBRIEFS *continued from page 4*

Waterville Valley. The conference brought together scientists, communications experts, educators, and students to discuss climate change education.

- The New Hampshire Science Teachers Association annual fall conference was held on November 1 and 2 in Meredith. Audrey Eisenhauer and Dave Erler presented "Project OspreyTrack: Satellite Tracking the Migrations of Ospreys from New Hampshire to South America" and Eric D'Aleo and Jeremy Phillips presented "By Lake and By Land: Explore Squam Lakes Natural Science Center." Both sessions were designed to help teachers involve their students in Science Center education programs.
- Thank you to Community Guaranty Saving Bank of Plymouth for generously sponsoring Raptor Spectacular in September. Nancy Cowan of the New Hampshire School of Falconry presented a program about the sport of falconry, followed by outdoor flight demonstrations with live birds such as Peregrine Falcon, Lanner Falcon, and Harris's Hawk. Up Close to Animals presentations throughout the day featured raptors.
- It was a cold night but did not deter the almost 360 children and adults who enjoyed creative live skits about nature along a special trail lit by jack-o-lanterns at the annual Halloween Hoot 'N Howl on October 17. Moultonborough Girls Scout Troops 10093, 10062, and 12269 helped by carving pumpkins donated by Moulton Farm. After the tour, guests enjoyed games, snacks, candy, and hot drinks donated by: Dunkin Donuts, Plymouth; E.M. Heath, Holderness; Hannaford Supermarket, Meredith; and Tootsie Roll Industries. Thank you also to our wonderful volunteers for their help.



Save the Date

**Celebrating 50 Years!
1966 to 2016**

This half-century milestone is made possible thanks to the vision, energy, and generosity of people like you! Mark your calendar to save July 23 and join us for dinner and dancing at our "Golden Gala: Celebrating our Past, Inspiring our Future."



Golden Tributes

Tribute gifts are a unique way to celebrate, honor, and remember those people who make a difference. Help celebrate our 50th anniversary with a special \$50 tribute donation to honor special friends or family, a favorite staff member, or board member. We'll notify each honoree with a personalized letter and you'll receive acknowledgment of your tax deductible contribution. Your tribute will be recognized at the Golden Gala and on our website. All tribute gifts support the Science Center and its mission.

THANK YOU VOLUNTEERS!

VOLUNTEER UPDATE

The annual Parsons Volunteer Recognition Dinner was held in September at Hart's Turkey Farm Restaurant in Meredith. Almost 80 volunteers and staff attended, which was generously sponsored by Cross Insurance Agency, Patty Stewart Associates, and Hart's Turkey Farm.

At the dinner, Senior Naturalist Dave Erler recognized a volunteer group of 23 Blue Jay Observers for their help during the three-year project, which was completed at the end of 2014. Volunteer observers were: Shaun Flynn, Elizabeth Fortson, Pat James, Mary Kahn, Kathy Letsky, Dom Marocco, Irene Marocco, Don Margeson, Peggy Martin, Missy Mason, Denise Moulis, Ron Piro, Nance Ruhm, Bill Sharp, Ashley Spooner, Pam Stearns, Susan Stepp, Carol Stewart, Rob Stewart, Lisetta Silvestri, Jan Welch, Marc White, and Betsy Whitmore.

"Volunteers Complete the Picture" in the Trailhead Gallery is updated each year to show cumulative hours of volunteer service. Volunteers who achieved 200 hours in 2014 were Bob Gosselin and Liz Hager. Lisa Davis, Dan Kemp, and Steve Hackett advanced to the 500 hour level. Pat James, Karin Karagozian, Denise Moulis, and Susan Stepp reached 1,000 hours. The staff extends its thanks and appreciation to all volunteers for their tremendous gifts of time and dedication.



The President's Service Awards is a national program honoring Americans who inspire others to volunteer through their example. Executive Director Iain MacLeod awarded pins and certificates to those volunteers eligible in 2014. Jim Barry received the Silver Award for donating over 250 hours. Bronze Award recipients who donated between 100 and 250 hours were: Lisa Davis, Nancy-Jane Duncan, Kenneth Evans, Dennis Hager, Pat James, Barb Laverack, John McRae, Elaine Melquist, Denise Moulis, Gary Robertson, Nance Ruhm, Judy Sniffen, and Lea A. Stewart.

Volunteers make a difference! Thank you all for your help.

THESE WONDERFUL BUSINESSES INVEST IN EDUCATION JOIN US IN THANKING THEM FOR THEIR SUPPORT!

We are grateful for the support provided by many businesses across the state through memberships, sponsorships, and in-kind contributions of goods and services. These strong corporate investments help make the Science Center's education programs possible.

2015 Business Members: Foreco, Golden Pond Country Store, Great Northern Cleaning, Holderness Harbor/Asquam Marina, Loon Mountain Recreation Corp., Megaprint, Pike Industries, Plymouth Family Practice Center, Rockywold-Deephaven Camps, and True Colors Print & Design.

2015 Business Sponsors: Ambrose Brothers, Belknap Landscape Company, Bridgewater Power Company, Children's Dentistry of the Lakes Region, Common Man Restaurant, Community Guaranty Savings Bank, Cormack Construction Management, Cross Insurance Agency, Custance Brothers Woodworking, Davis Excavation, Dead River Company, Donovan Tree Experts, Ehlers Management Group, E.M. Heath, Hart's Turkey Farm Restaurant, Iberdrola Renewables, Mill Falls at the Lake, George Longo Design, Lovering Volvo, Malone, Dirubbo & Co., McLane Law, Meredith Village Savings Bank, Mid-State Health Center, Moulton Farm, New Hampshire Electric Co-op Foundation, O'Neill Orthopaedics, Peabody and Smith Realty, Pike Industries, Plymouth Law Center, Plymouth Optical Shoppe, Rockywold-Deephaven Camps, Patty Stewart & Associates, Riveredge Marina and Squam River Landing, Samyn-D'Elia Architects, Squam Boat Livery, Steinwachs Family Foundation, Wells Fargo Advisors, and Christopher P. Williams Architects.

2015 Business In-kind Donors: 3 Phase Line Construction, 603 Brewery, Wes and Cathy Avery, Bayswater Book Company, Belknap Landscape Company, Biederman's Deli/Chase Street Market, Bob's Shurfine Market, Bridgewater Power Company, Cackleberries Garden Center, Charles River Laboratories Corporation, Chippers, Inc., Coca-Cola Bottling Company of Northern New England, Common Man Restaurant, Cottage Place on Squam Lake, Country Lady Bug Greenhouse, Dirty Worm Greenhouse, Donovan Tree Experts, Dunkin Donuts, Plymouth, E.M. Heath, Innisfree Bookshop, Ehlers Management Group, Eversource, Forever Green, Sally Grand, Hannaford Supermarket, Meredith, Hannaford Supermarket, Plymouth, Hart's Turkey Farm Restaurant, Holderness Harbor/Asquam Marina, Inn on Golden Pond, J. Jill Distribution Center, Cheryl Johnson Art, Jordan's Ice Creamery, Joyce's Draperies and Slipcovers, Lakes Region Tent & Event, Little Church Theater, Megaprint, Marie's Catering, Mill Falls at the Lake, Miracle Farms Landscaping, Moulton Farm, Mountain Laurel Flower & Gift Shop, Moveable Feast, Owl's Nest Resort and Golf Club, Petal Pushers Farm, Plymouth Animal Hospital, Precision Lumber, The River 105.7, Six Burner Bistro, TFG Aquarium Services, Tootsie Roll Industries, True Colors Print & Design, Venture Print Unlimited, Village Canvas, Village Pizza and Grill, Wayside Farm, and Wholly Tara.

We gratefully acknowledge all business supporters and have tried to include all business donors. Please notify Development and Communications Director Janet Robertson if any listings are inaccurate or missing.

UPCOMING PROGRAMS AND EVENTS

Advance registration is required by noon the day before the program. If minimum enrollment is not met, programs may be cancelled. Walk-ins may be accommodated if space is available.

HOMESCHOOL SERIES

Be A Scientist!

Ages 7 to 10

10:00 to 11:30 a.m.

December 3: Dendrology; January 7: Ecology; February 4: Ornithology; March 3: Mammalogy; April 7: 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 non-living ecosystem components that make New Hampshire so unique. Investigate a different scientific field of study each month.

Using Our Five Senses

Ages 4 to 6

10:00 to 11:30 a.m.

December 3: Smell; January 7: Sound; February 4: Sight; March 3: Taste; April 7: 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 one. 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.

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

An adult must participate with children at no additional cost. Each additional adult pays child fee. Program offerings are aligned with the New Hampshire Science Framework.

Winter Bird Banding Open House Saturday, January 2

9:00 a.m. to 12:00 p.m.

For all ages

For over 30 years we have started the New Year off with a bird banding open house. For tracking purposes, the US Fish & Wildlife Service officially designates that all birds become a year older on January 1. Come celebrate their new age status and the New Year with us. Find out all about banding and, with luck, help band and release some hardy feathered creatures.

No charge to attend. Children must be accompanied by an adult.



New Hampshire Young Birders Club
View events and information at
www.nhyoungbirders.org

WILD WINTER WEEKENDS

WILD WINTER WALKS: GUIDED TOURS OF THE LIVE ANIMAL TRAIL

For adults and families with children ages 6 and up

Have you ever wondered 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. You can see them as you are led by a staff naturalist who will guide your walk on the live animal exhibit trail and discuss how native animals are well-adapted for winter in New Hampshire. Be ready to snowshoe and see beautiful wild animals in their winter fur coats. Snowshoes available at no extra cost or bring your own. Children must be accompanied by an adult. Dress to be outdoors with snow boots, hats, gloves, and warm layers.

Cost: \$8/member, \$10/non-member*

Saturday, January 2 1:00 to 3:00 p.m.	Saturday, January 30 1:00 to 3:00 p.m.*	Saturday, February 27 1:00 to 3:00 p.m.*
Saturday, January 9 10:00 a.m. to 12:00 p.m.	Saturday, February 6 10:00 a.m. to 12:00 p.m.	Saturday, March 5 1:00 to 3:00 p.m.
Saturday, January 16 1:00 to 3:00 p.m.*	Saturday, February 13 1:00 to 3:00 p.m.*	Saturday, March 12 1:00 to 3:00 p.m.*
Saturday, January 23 1:00 to 3:00 p.m.	Sunday, February 21 1:00 to 3:00 p.m.	

WINTER BIRD BANDING

For all ages

Looking for a chance to see wild birds up close? Join us to find out why and how we capture, band, and release birds that gather at our winter feeding station. Children must be accompanied by an adult. Time will be spent indoors and outdoors; bring warm layers, hats, and gloves.

Cost: \$8/member, \$10/non-member*

Saturday, January 16
10:00 a.m. to 12:00 p.m.

Saturday, January 30
10:00 a.m. to 12:00 p.m.

Saturday, February 13
10:00 a.m. to 12:00 p.m.

Saturday, February 27
10:00 a.m. to 12:00 p.m.

Saturday, March 12
10:00 a.m. to 12:00 p.m.

***MAKE A DAY OF IT!** Choose one of five dates and attend both a Wild Winter Walk and a Winter Bird Banding program. Bring your brown bag lunch for the time in between.

Advance Package Discount: \$11/member, \$15/non-member for both programs on the same day.

WINTER SCHOOL VACATION WEEK

Winter Bird Banding
Wednesday, February 17
10:00 a.m. to 12:00 p.m.
All ages

Looking for a chance to see wild birds up close? Join us to find out why and how we capture, band, and release birds that gather at our winter feeding station. Children must be accompanied by an adult. Time will be spent indoors and outdoors; bring warm layers, hats, and gloves.

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



Advance registration is required by noon the day before the program. If minimum enrollment is not met, programs may be cancelled. Walk-ins may be accommodated if space is available.

Star and Moon Gazing with the McAuliffe Shepard Discovery Center
Thursday, February 18
6:00 to 8:00 p.m.

Families with children ages 6+
Tour the night sky in Holderness with a guest speaker representative from the McAuliffe-Shepard Discovery Center. Learn about the moon and stars we see in the winter night sky. This family-oriented workshop features hands-on activities exploring the geology and phases of the moon. If skies are clear, guided telescope viewing of the moon, stars, and planets will follow. Time will be spent indoors and outdoors; bring warm layers, snow boots, hats, and gloves. Program held rain or starshine; telescope viewing requires mostly clear skies. Hot chocolate provided too.

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

Wild Winter Walks: Guided Tour of the Live Animal Trail
Friday, February 19
10:00 a.m. to 12:00 p.m.

Adults and Families with children ages 6+
Have you ever wondered 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. You can see them as you are led by a staff naturalist who will guide your walk on the live animal exhibit trail and discuss how native animals are well-adapted for winter in New Hampshire. Be ready to snowshoe and see beautiful wild animals in their winter fur coats. Snowshoes available at no extra cost or bring your own. Children must be accompanied by an adult. Dress to be outdoors with snow boots, hats, gloves, and warm layers.

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

SCIENCE CENTER NATURE TOURS

Scotland's Western Isles and Skye
June 2016 - **SOLD OUT!**

Land of Enchantment: Natural Wonders of New Mexico
November 2016



Join Iain MacLeod for a spectacular, small group tour of New Mexico. November is a special time to visit when temperatures are comfortable, the light is fantastic, and tens of thousands of cranes and snow geese have just arrived for the winter. In addition to wildlife and

spectacular scenery, the trip includes visits to the Bandelier National Monument, the Valley of Fires lava beds, Carlsbad Caverns, Santa Fe National Forest, and beautiful old town Santa Fe. Other highlights include the Bosque Del Apache National Wildlife Refuge, and Bitter Lakes in the Pecos Valley. You'll see Pronghorn Antelope, Prairie dogs, Roadrunners, vast flocks of waterfowl, raptors galore, and incredible sunrise and sunset flights of Sandhill Cranes.

Cost: \$3,500 (assumes double or twin occupancy room*)
All-inclusive cost includes: round-trip airfare from Boston to Albuquerque, ground transportation (15-passenger van), all accommodations, all meals, admission fees, and leaders' fees.
*There is an additional \$300 charge for a single room.

Contact Iain for more information at 603-968-7194 x 23 or iain.macleod@nhnature.org or to book your place.

SAVE THE DATE!

**April School Vacation Camp:
Junior Wild Animal Keepers**

Monday, April 25 to Thursday, April 28
9:00 a.m. to 3:00 p.m.
Ages 8 to 12

Otter popsicles? Training time for a coyote? Treats and puzzles for opossums? Do you love caring for animals? Do you wonder what the Science Center's animals eat for dinner? Join us for a week of learning how New Hampshire's wild animals survive. Then apply that knowledge by helping with the care and feeding of the wildlife at the Science Center. Go behind the scenes to watch staff train animals and then build puzzles and treats to engage our resident animals. On Thursday, family, friends, and Science Center staff will stop by to learn about your adventures.

Fee: \$230/member; \$250/non-member

Pre-registration required. Please call 603-968-7194 x 7.

Electric kettle
Dehumidifiers

Crock pot for Blue Heron School

Twin bed frame and box spring for intern residence

Working DVD Player for Gift Shop

For animal care:

New or clean dog or cat toys, garden cart, 5 gallon buckets, good condition dog crates- not more than 32 inches high, fish tanks of assorted sizes, sheets and towels

OPENING A WINDOW TO THE NATURAL WORLD

There are many ways you can help to open the window!

If you make a gift to the Annual Fund by December 31, your financial support will help us to care for and feed our live animals, to maintain our buildings, trails, and exhibits, to provide support to our volunteers and staff, and to offer a variety of quality natural science programming for all ages. Your contribution in any of these ways will make a difference:

- Simple Gifts – send a traditional donation by check, credit card, or cash.
- Online Gifts – visit our website, nhnature.org to use your credit card to make a secure one-time or recurring Annual Fund donation.
- Gifts of Securities – a charitable donation of appreciated, long-term securities may help you avoid capital gains taxes as well as to provide charitable support to the Science Center. If you would like to give a stock gift, please contact Janet Robertson.
- Honorary Gifts - make a contribution in honor of your relatives or friends instead of a traditional present for birthdays, weddings, anniversaries, or seasonal

holidays. Ask your family and friends to donate to the Science Center in honor of your own birthday or special life event. You can also make a Sponsor a Species contribution as a tribute.

- Memorial Gifts – remember someone special who is gone from your life by donating in their memory. Memorial gifts provide support to ongoing programs or may be directed to a special project.
- Matching Gifts - make a gift and apply for a match from your employer to double your gift! As a 501(c) (3) nonprofit, the Science Center qualifies for most matching gift programs.
- Planned Gifts – your legacy gift will continue your Annual Fund giving after you're gone. Help us reach our goal of 50 new legacy donors by August 2016 and strengthen the Science Center for its next 50 years.

Your gift, no matter its size or how you choose to give it, will help us fulfill our mission *to advance understanding of ecology by exploring New Hampshire's natural world.*

Questions about how you can support the Science Center? Contact Janet Robertson, Development and Communications Director, at 603-968-7194 x 12 or janet.robertson@nhnature.org

These generous donors made tribute gifts, which were received between July 1 and September 30, 2015:

In memory of Mary Smith Denison
Elizabeth Dewey

In honor of Bertha and Al Fauver's birthdays

Nancy and Paul Beck
D.A. Fauver and David Bell
Susan Hofstra
Margaret and Thomas Herrick
Cathy and Wayne Oikle

In memory of Fran Fernandes
Leslie Fogg

In memory of Cathy Murgatroy
Anonymous

In memory of Don Parsons
Natalie Parsons

In memory of Barbara Ridgely
Virginia Ridgely Howe

In honor of Janet Snow's birthday
Sandy Low

In memory of Tom Wilson
Susan and William Kenney


nature matters

YESTERDAY / TODAY / TOMORROW

(with help from the Holderness Fire Department). They even have fish in them. Amphibian tanks are in place and occupied. Outside, the Water Play Table and deck are nearly complete. Other exhibit components have been delivered and will be put in place this winter. Landscaping was done by early November thanks to a generous donation from Miracle Farms Landscaping. We can't wait to share it with you when we open on May 1!

Construction is complete on the new Raptor Mews and Winter Bird Quarters. These adjoining buildings are part of the Webster Education

Building. They provide state-of-the-art housing for our large collection of program raptors. The old Winter Bird Building and "Stockade" where birds were formerly housed were removed to allow space for larger, much-needed staff and volunteer parking.

Thank you for making all of this possible through your support of the Nature Matters Capital Campaign.



The Raptor Mews under construction this fall.

TRAIL'S END

BUSINESS SUPPORTERS



Thanks to you, the Science Center had another very successful year – record attendance on the trails, solid numbers on the tour boats, the opening of the Gordon Interactive Playscape, and the construction of new winter bird quarters. We hope that our Annual Fund campaign will continue the trend as we wrap up the year.

There are so many people and entities that enter into the successful operations equation. We all know we have a fabulous, talented, and highly dedicated staff. Our group of volunteers – including my fellow board members – is second to none and serves as an example for other not-for-profits to aspire to. We have a generous and loyal group of donors and members. Over the course of a year we try to thank these important groups by hosting events where we recognize their contributions of talent, time, and money.

It occurs to me that there is another major group that helps the Science Center in lots of ways – some obvious and some not so obvious. Many local businesses provide goods and services – sometimes at a discount and sometimes for no cost. We know these for-profit businesses receive many requests from other groups too. These businesses choose to provide assistance for good causes like the Science Center. We are fortunate to count on them for what amounts to a large total each year and represents a significant gift from each individual business.

One example of local community support is from two businesses that assist us in making our boat operations run smoothly. I use these businesses as an example as I am personally aware of their cooperation in my other role as a tour boat captain.

We dock our boats and operate our public cruise business at docks owned by Walter's Basin Restaurant and Squam Boat Livery. Our access to the docks is via the driveway owned by Walter's Basin, which they generously open for our use. As more and more Walter's Basin Restaurant customers arrive by boat, our captains help with docking their customers, and in turn, Walter's provides overflow docking for us during our busy fall season tours. We conveniently fuel our boats at Squam Boat Livery – no small feat given the length of our boats and the traffic on the channel. The staff at Squam Boat Livery does a great job clearing their gas dock so we can keep our boats fueled. And Squam Boat Livery also gives us a generous discounted fuel rate. The cooperation of these two businesses makes it possible for us to operate our boat business efficiently.

We are fortunate that so many businesses value the Science Center and provide such great service to us! See a full list in "Businesses Invest in Education" on page 7. We very much appreciate these business relationships. We hope you will join us in thanking these businesses for their generous support.

Trail's End is written by David F. Martin, Chair of Squam Lakes Natural Science Center's Board of Trustees. You may contact David at dave.martin@nhnature.org.

MINK MOMENTS

continued from page 1

uses its powerful jaws to grip the back of the neck, fracturing the cervical spine. Once ice has firmly settled on ponds and lakes, the mink's focus moves to land mammals including mice, voles, and rabbits

What preys on this adept predator? Great Horned Owls surprise them from above, while bobcats, foxes, and coyotes prowl their wetland haunts. Clean water is essential as mink are seriously impacted by air-borne mercury pollution as well as contamination by banned PCBs (polychlorinated biphenyl), industrial chemicals still persistent in the environment.

Water, even when frozen, is a wildlife magnet. Why not be drawn in yourself with the opportunity to read the stories left behind by wildlife? You might even surprise one of the local authors working on the next chapter.



MINK QUIZ

1. True or False? Mink turn white in winter.
2. Mink are in the same family as all but which of the following:
 - A. fisher
 - B. pine martins
 - C. skunks
3. True or False? Muskrats are favored prey of mink.
4. Where does a mink consistently have a white patch of fur?
5. Where is the best place to look for mink tracks in the winter?

Answers

1. False 2. C 3. True 4. Under its chin
5. Edge of a wetland or woodland stream

**Certified Interpretive Guide Training
December 8-11, 8:30 a.m. to 4:30 p.m.**

Interpreters are storytellers. They are tour guides, museum docents, zoo docents, park rangers, naturalists, and more.

Learn techniques to make connections with an audience, give meaningful and enjoyable presentations, create thought provoking and relevant interpretive programs.

For more information contact Audrey Eisenhauer at audrey.eisenhauer@nhnature.org or 603-968-7194 x 14.



Where: The Flying Monkey in Plymouth

When: February 9, 2016

Who: Plymouth State University's Office of Environmental Sustainability in collaboration with Squam Lakes Natural Science Center

Details coming in January!



Gift Memberships

Membership at Squam Lakes Natural Science Center is a great gift for anyone! Benefits include free trail admission, discounted rates on lake cruises and programs, a 10% discount at the Howling Coyote Gift Shop, AZA and ANCA reciprocal admission discounts, and much more.

Purchase your Gift Membership online at www.nhnature.org/membership/gift_membership.php



Shop online and support the Science Center this holiday season. Simply select Squam Lakes Natural Science Center as the charity you wish to support.



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