



WHEN CLIMATE AND COLOR CLASH

By Margaret Gillespie

I remember, as a youngster, exploring snowy winter landscapes where evergreen branches were weighted to the ground with their snow loads. In places, young trees resembled tents, making ideal spaces for me to be concealed beneath their boughs. Once, while searching for such a hiding place, I startled a snowshoe hare in its winter white coat ensconced under the branches. It had the same refuge idea as I did and our encounter was a surprise for us both!

In an era of climate change, how does the future look for animals like snowshoe hare (*Lepus americanus*) which transition to camouflaging colors blending with the season? The key to color transformation for them is change in day length. Shortening daylight in fall triggers the growth of white coats blending with a snowy landscape. Lengthening days herald snow melt and spring plants flowering. Snowshoe hare respond by molting into matching brown coats. Researchers from Michigan State University looked at how these creatures were faring with shorter, less snowy winters. They found an alarming decline in snowshoe hare populations, linking this dramatic variation, in part, to climate change factors. The hares simply were not blending with their surroundings during seasonal transitions and so became very visible prey. On a positive note, research in central Wisconsin revealed specific forest management practices to be a boost to snowshoe hare populations. Timber harvests which favored the growth of young aspen and alder increased access for hares to food and shelter.

Enter our second creature which, in contrast, is a predator. How does climate change effect how short-tailed (*Mustela ermina*) and long-tailed weasels (*Mustela frenata*) capture prey while avoiding becoming prey themselves? In winter, these creatures transition from summer brown to winter white. Weasels are relatively small creatures, 7 to 13 inches for short-tailed weasels from nose to tail tip, with long-tailed weasels being somewhat larger. These active hunters are mostly white with a notable exception – they have a black tip to their tail. The advantage of the contrasting dark tail tip is this feature becomes the focus for a predator coming in for a capture rather than the weasel’s head. Predators include owls, mink, foxes, and coyotes. Weasels lose a huge advantage if, instead of blending with their surroundings, their winter white contrasts against a brown leafy forest floor rather than the snowy winter terrain their coats match.



continued on page 11

IN THIS ISSUE...

- Page 2 Forging Trails: Dinner with the Lions
 - Page 3 Animals In Winter
 - Page 4 From the Heron’s Nest
 - Page 5 Kirkwood Gardens
 - Page 6-7 Programs and Events
 - Page 8 Kids’ Activities
 - Page 10 Member Updates
 - Page 11 Thank you Volunteers
- And much more!

Happy Holidays from your friends at the Science Center!

Winter programs begin in January.

FORGING TRAILS: DINNER WITH THE LIONS



Hopefully you had a chance to visit this year to see our two new mountain lions. We highlighted their arrival at 4-months-old in the Spring 2023 *Tracks and Trails*.

They have grown a lot since then and are truly magnificent animals. Every Saturday this summer, I made a point of getting away from my desk for an hour or so and parking myself at the mountain lion exhibit to watch them and talk to visitors. It was fascinating to see how over just a couple of months they became so much more comfortable

in their surroundings. When they first went into their enclosure they were understandably wary of this new and scary world they found themselves in. They hissed and spat, even from afar, at the first visitors in May. They spent most of their days as far away from the glass front of the enclosure as they could be.

But that quickly changed as they realized that the thousands of visitors posed no threat to them and that indeed these noisy bipeds were not only interesting but stimulating - especially the small, potentially "edible" ones! By July, if you had a toddler in tow, you would almost certainly arouse the lion's natural predatory instincts.

Of course, this is as it should be. We want all our animals to exhibit their natural traits even though their circumstances have brought them to us and a life in captivity.

These two male cats are very close - they lie together and groom each other's faces and tails. We don't know for sure if they are littermates, but they are brothers for life now and have been together since they were just a few weeks old. But peace, harmony and civility does break down once a day - dinner time! Their main meal is at around 5:00 p.m., when they go inside their indoor sleeping quarters for the night. They love their dinner and their tummy clocks start ringing well before the dinner hour. They start licking the heavy guillotine door that separates them from the indoor space - willing it to open. When it does, they squeeze their sinewy bodies through it like two torpedoes... and it's every cat for himself! Metal food bowls bounce off the walls and all manners are forgotten. Those of you with teenage sons can relate.

Iain MacLeod, Executive Director
iain.macleod@nhnature.org
603-968-7194 x 123



NATURE TOUR TO NEW MEXICO

Iain's Scotland trips are full through 2025, but he also does a spectacular tour of New Mexico. If you would like to join us for a 10-day adventure to the Land of Enchantment next November, let Iain know @ iain.macleod@nhnature.org. Check out the itinerary at https://nhnature.org/programs/nature_tours.php



SQUAM LAKES NATURAL SCIENCE CENTER

PO Box 173, 23 Science Center Road
Holderness, NH 03245

603-968-7194 | info@nhnature.org | nhnature.org

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 editor Amanda Gillen.

BOARD OF TRUSTEES

Sarah Brown, Chair
Justin Van Etten, Vice Chair
Anne R. Lovett, Treasurer
Lisa Doner, Secretary

Tory Amorello
Brent Anderson
Lisa Aulet, Ed.D.
Kevin Barrett
Lisa V. Bennett
Cathy Denious
Ann Ehrhart
Diane Garfield Gross
Martha Grant
Barbara Nan Grossman
Susan Lynch
David Murphy
Cris Salomon
Frank B. Stevens
Geoffrey Stewart

HONORARY TRUSTEES

David W. Cote, D.V.M.
Maurice Lafreniere
John McRae
Tashia Morgridge
Carol Thompson
Stephen G. Woodsum

STAFF

Erick Amero, Operations Manager
Beverly Anderson, Visitor Services Manager
Bonnie Baker, Human Resources and Finance Manager
Kim Beardwood Smith, Development Officer
Jennifer Byam, Blue Heron School Associate Teacher
Dennis Capodestria, Exhibits Assistant
Brian Church, Animal Care Associate
Eric D'Aleo, Naturalist
Adam Donnelly, Facilities Assistant
Bob Donnelly, Facilities Assistant
Brian Eaton, Finance and Operations Director
Clare Eckert, Facilities Assistant
Audrey Eisenhauer, Education Director
Emma Erler, Lead Horticulturist & Exhibits Assistant
Genlyne Fiske-White, Animal Care Training and Enrichment Program Coordinator
Jordan Fitzgerald, Blue Heron School Co-Director
Jordy Gianforte, Blue Heron School Co-Director
Amanda Gillen, Development and Communications Director
Margaret Gillespie, Naturalist
Morgan Goodrich-Osborne, Animal Care Associate
Melissa Greenawalt, Program Registrar
Phoebe Hartvigsen, Naturalist
Keith Hosking, Facilities Director
Joy Huke, Membership and Events Coordinator
Iain MacLeod, Executive Director
Lauren Moulis, Animal Care Director
Mary Noyes, Administrative Assistant
Dylan Parker, Blue Heron School Associate Teacher
Jeremy Phillips, Naturalist
Alexis Plunkett, Blue Heron School Associate Teacher
Carol Raymond, Volunteer Manager
Kyle Salmons, Naturalist and Camp Coordinator
Dan Walsh, Facilities Assistant
Sharon Warga, Compliance Officer
Carolyn Wawrzynowski, Animal Care Associate
Holly Williams, Animal Care Welfare Coordinator
Ashley Yeaton, Blue Heron School Associate Teacher



OPENING A WINDOW TO THE NATURAL WORLD

By Amanda Gillen, Development and Communications Director

SUPPORT THE ANNUAL FUND

For Squam Lakes Natural Science Center, being a nonprofit organization means we take your trust and faith in what we do seriously. It means your gift to the annual fund supports our mission *to advance understanding of ecology by exploring New Hampshire's natural world* and brings people Nearer to Nature.

It also means school children can see a live skunk and learn about their importance to our ecosystem on a field trip to the Science Center. It means multiple generations of families can experience the live animal exhibit trail, share their love of nature, and learn about New Hampshire's natural world. It means our animal care staff can attend training to learn about the latest in animal husbandry and care and implement best practices for our animal ambassadors. It means Nature for All - regardless of socioeconomic, primary language, or ability. It means visitors can listen to the call of a Loon on a Squam Lake Cruise as they learn about and see these prehistoric birds.

You can give to the annual fund in a number of ways.

- Give online (nhnature.org/support or use the code to the right)
- Send a check to us at PO Box 173, Holderness, NH 03245.
- Give through your Donor Advised Fund (DAF). Simply request a grant to Squam Lakes Natural Science Center, Tax ID: 02-0271824.
- Give a gift of stock.
- Give from your IRA.



Also consider including Squam Lakes Natural Science Center in your estate planning. Give us a call with your questions or see the details on our website.

If you have already given this year, thank you! Your gift helps the Science Center plan for the long run.

The Science Center is here to connect you to the natural world and provide a consistent educational experience immersed in nature. Thank you for your support. Amanda can be reached at amanda.gillen@nhnature.org or 603-968-7194 x 134. Squam Lakes Natural Science Center tax ID: 02-0271824.

ANIMAL CARE: ANIMALS IN WINTER

by Lauren Moulis, Animal Care Director

It is a common question, "Where do your animals go in the winter?" The short answer is simple; they all stay at the Science Center. Since the animals, with very few exceptions, are species native to New Hampshire, they adapt to the changing seasons. The more complex answer is that while they all remain at the Science Center for animal care staff to care for 365 days a year, *where* they stay may be different between species.

If you have ever participated in one of the Science Center's guided Wild Winter Walks (see page 6 for schedule), you may have noticed the river otters sliding along the fresh snow, or the coyote curled up, warm from her thick fur, but you may also have noticed some empty enclosures.

The American black bears are one of the more well-known species at the Science Center that has a winter rest. Once the Science Center's two resident bears choose to stay in their dens, animal care staff check on their health daily and provide fresh water and offer smaller amounts of food. Black bears go into a light state of sleep called torpor but do not truly hibernate as defined by temperature and heart rate reduction.

Several raptors are also off exhibit in the winter. The Science Center has several migratory raptor species, and while they live in New Hampshire during the summer months, they would normally migrate to warmer climates for the winter season. To accommodate these species, several of the exhibit and program raptors are relocated to Winter Quarters where it is more temperate. Animal care staff move the birds, depending on weather, just after the live animal exhibit trail closes for the season on November 1. However, if temperatures drop prior to the end of trail season, visitors may notice that birds have already moved to their winter homes.

Regardless of where the animals spend their winter months, animal care staff continue to monitor weights, do necessary "coping" - trimming a bird's beak and talons back to their natural shape, feed, clean, and provide routine training and enrichment even when temperatures are below zero with many feet of snow and ice on the ground. Staff work in all weather, to ensure the animals at the Science Center are getting the best quality of life.



NATURALIST'S CORNER

CONNECTING NATURE TO OTHERS

By Jeremy Phillips

I hang a small print of our mission in my office: To advance understanding of ecology by exploring New Hampshire's natural world. We do this in many ways including the live animal exhibit trail, which is home to our beloved mammals, raptors, fish, and amphibians. We also have more than 20 species of ambassador animals used in programs at the Science Center, away from the Science Center, at schools, libraries, and other locations. We use our pontoon boats for Squam Lake Cruises to explore wildness on the water. We have hiking trails, books to purchase, and a large volunteer program. We attempt to advance understanding of ecology in a variety of ways.

Many of the people that relate to our mission receive the connection through the channels noted above. But how can we connect others to nature?

Creating a nature podcast is an innovative and effective way to expand the reach and impact of Squam Lakes Natural Science Center. Nature podcasts have gained significant popularity in recent years, providing a unique platform to engage a broader audience to share the mission. The Science Center has joined that group of nature podcasters with "The Wild Around Us." We broadened the stated mission to "advance understanding of ecology by exploring nature" for the podcast.

The Wild Around Us hopes to transcend geographical boundaries and temporal constraints, enabling individuals worldwide to access and appreciate the natural wonders of New Hampshire. Maybe even to encourage listeners to take an extra few moments to pay attention to something they otherwise would have passed by. Even when our regular patrons listen it offers another way to experience nature.

In each episode, I am your nature guide, sometimes including our long-time naturalist, Eric D'Aleo, or even a special guest on occasion. The podcast always includes a sound from nature. This sensory-rich experience not only entertains but educates, effectively communicating the mission of the Science Center to enhance understanding of ecology. I encourage you to check it out and listen. Episodes range from four to ten minutes long and may offer interesting bits of knowledge you didn't have.

The creation of a The Wild Around Us offers Squam Lakes Natural Science Center a unique opportunity to expand its reach, engage a broader audience, and continue to spread our mission to our regular patrons and beyond. Thank you for being a supporter, and don't forget to do the important thing- get out and explore the wild around you.

Check out our podcast by going to nhnature.org/podcast or scan the code.



FROM THE HERON'S NEST

The new school year at Blue Heron School is off to an excellent start. Children are learning about a variety of topics with the naturalists, spending ample time outside, visiting the Gordon Children's Center and Playscape, and cooking with food we harvested from our garden. The children marveled at seeing the full planting cycle from planting seeds, to caring for seedlings, to watching them grow, and then cooking a variety of dishes with the harvest. Families attended our monthly family day events and enjoyed deliciously prepared snacks the children made, while getting to know each other and the staff. We collected non-perishable food and toiletries for the local food pantries and are inviting community and family members to lead a variety of seasonal or cultural lessons in the classrooms.



Blue Heron School is a nature-based Montessori school for children ages three to six. For information please visit nhnature.org/programs or contact Blue Heron School Co-Directors Jordan Fitzgerald and Jordy Gianforte at 603-968-7036 or blueheron@nhnature.org.

KIRKWOOD GARDENS

By Emma Erler

WINTER PROTECTION FOR EVERGREENS

Q: Do my evergreen shrubs need winter protection?

A: Severe winter weather in New Hampshire often damages evergreen plants in the landscape, particularly those that have been recently planted. Brown, burned leaves and needles are a common occurrence in the late winter months and spring. Fortunately, there are a number of practices you can employ to help keep your evergreens healthy.

Because they do not shed their leaves, evergreens lose water over the winter in a process called transpiration. Water loss is greatest during periods of strong winds and mild sunny weather. During periods of super cold weather, the ground freezes and cuts off water to the plant's roots. Under these conditions water is transpired faster than it is taken up, and the leaves can begin to dry out and turn brown.

Winter damage can be mitigated by creating wind breaks made from burlap or canvas. Attach the material to frames built on the side of the plant facing prevailing winds. Another

option is to wrap burlap around the entire plant which works especially well for compact plants such as arborvitae. Never use black plastic as it causes extreme temperature fluctuations. Burlap or canvas wraps may also deter deer from browsing on preferred plants like arborvitae, yew, and rhododendron.

Freezing and thawing can heave newly planted trees and shrubs from the ground, causing damage to their root systems. Applying two inches of woodchips or straw over the root zone will insulate the soil and protect the root. Just take care not to pile mulch against the plants' trunks, as this can encourage insect, disease, and rodent issues.

Evergreens are also at risk of breakage from heavy snow and ice loads. Trees and shrubs which are planted near the eaves of buildings often end up with broken limbs from plummeting snow loads. Placing wooden frames over plants can keep them from getting crushed. It is also a good idea to brush off heavy snow with a broom if it is causing limbs to bend excessively.

PLANT SPOTLIGHT

Autumn Monkshood

Aconitum carmichaelii 'Arendsii'

Culture: Prefers moist, humusy soil in full sun to part shade. Slow to establish, but will thrive for decades under good growing conditions. Thick stems seldom require staking. Hardy in zones 3-7. All parts of the plant are extremely poisonous – *WEAR GLOVES WHEN WORKING WITH IT.*

Bloom: Deep blue-purple hooded flowers somewhat resemble the hoods worn by medieval monks. Bloom is from mid-September through October.

Height: 2-3' (possibly 4-5' tall in optimum growing conditions)

Autumn monkshood, also known as azure monkshood, blooms later than most other garden perennials; well into October in Kirkwood Gardens. It is an erect, tuberous-rooted perennial with leathery dark green leaves, divided into 3-5 lobes. Dense panicles (up to 8" long) of deep blue-purple hooded flowers rise on spikes above the foliage. It is a nice perennial for woodland areas or along garden ponds or streams. Should not be grown in areas where small children or pets may come in contact with it.

Kirkwood Location: Lower Garden, back of border by pergola



Tatarian Variegated Dogwood

Cornus alba 'Argenteo-marginata'

Culture: Enjoys moist, well-drained soil in sun or partial shade. Fibrous-rooted and easy to transplant, will adapt to various soil conditions. Hardy in zones 3-7. May overgrow neighboring shrubs and plants if not trimmed. Prune back 1/3 of old growth every year in spring to control size and encourage red stem color on new growth.

Bloom: Creamy white flowers in flat-topped clusters bloom in late spring. Flowers give way to white berries tinged with green.

Height & Width: 8-10' tall, 8-10' wide

Tatarian variegated dogwood is a fast-growing, multi-stemmed, suckering, deciduous shrub. Grown for its showy leaves with irregular creamy white margins and highly decorative red stems in winter. Excellent choice for use as a property line screen, hedge or shrub border. Site in visible areas where stem color can be appreciated in the winter. Attracts birds and butterflies.

Kirkwood Location: Lower Garden



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

UPCOMING PROGRAMS & EVENTS

Winter 2024

Programs have limited capacities.

Advanced registration is required and tickets are available on the Calendar of Events at nhnature.org.

WILD WINTER WALKS

10:00 to 11:30 a.m.

For ages 7 and up

Saturday, January 13

Sunday, January 21

Saturday, January 27

Sunday, February 4

Saturday, February 17

Saturday, February 24

Sunday, March 3

Saturday, March 9

Saturday, March 16

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. Join a naturalist for a guided walk on the live animal exhibit trail to see our animal ambassadors dressed in their winter coats and discuss how these native animals are well adapted for winter in New Hampshire. If needed, snowshoes are available at no extra cost or bring your own. An adult must accompany children. This program is all outdoors; dress in warm layers with insulated snow boots, hats, and gloves.

Cost: \$12/member; \$15/non-member

INTRO TO ICE FISHING

Sunday, February 18, 7:00 to 10:30 a.m.

For ages 9 and up

Beneath the snow and ice is a wondrous world of peril: oxygen starts to deplete, food is scarce, and water temperature is barely above 37°F. Join us in search of fish that remain active under these conditions. Try to entice fish to the end of your line using lures and jigging techniques that mimic their natural food. Learn about fish adaptations by observing fish colors, fins, and mouthparts. Whether you fish for food, as a social gathering, or to be out in the elements, ice fishing is a great activity to foster your love for nature. All fishing instruction, equipment, and bait provided at no extra cost.

All participants ages 16 and up must have a current fishing license. Adults must accompany children as a registered program participant. Wear insulated, water-proof snow boots with non-cotton socks. Wear many, many layers of clothing including non-cotton insulating base layers, a wind-proof outer layer, sunscreen, sunglasses, hat, and gloves. Bring an extra pair of gloves, snacks, a thermos with a hot beverage, hand and toe warmers, and a camp chair. Purchase fishing licenses through New Hampshire Fish & Game (fishnh.com), which helps conservation efforts in our state.

Cost: \$30/member; \$35/non-member

SCIENCE PUBS

Tuesday, January 9

Tuesday, February 6

Tuesday, March 12

Tuesday, April 9

Doors open at 5:30 p.m., Presentation begins at 6:00 p.m.

At Walter's Basin Restaurant, Holderness

For Adults

Join us for a casual evening learning about and discussing science topics over food and drinks. Visit nhnature.org Calendar of Events for speaker details. Sponsored by Squam Lakes Natural Science Center, Squam Lakes Association, and Squam Lakes Conservation Society. Seating is limited. Advance registration for each date is required.

Cost: No charge to attend. Order and pay individually for food and drinks.

HANDS-ON LEARNING FOR HOMESCHOOLERS

First Thursday of each month, through April

10:00 to 11:30 a.m.

For ages 4 to 6, and Ages 7 to 10

Join us at this monthly series for homeschooled students to learn about the natural world through hands-on activities and investigations. We will wrap up each program with a visit with one of our live animal ambassadors.

Advance registration required. Register for one program or attend the whole series. Activities take place both indoors and outdoors. Dress to be outdoors with insulated boots, hats, gloves, jackets, and warm layers.

Cost per session: \$12/member child; \$15/non-member child

An adult must participate with children at no additional cost. Each additional adult pays child fee.

Ages 4-6 Topics

January 4: Habitat – Where Animals Live & Why

February 1: Weather – How Organisms Respond to Seasons

March 7: Weather – Measuring Sunlight

April 4: How Organisms Change the Environment

Ages 7-10 Topics

January 4: Be A Scientist – Ecology

February 1: Be A Scientist – Ornithology

March 7: Be A Scientist – Mammalogy

April 4: Be A Scientist – Entomology

SQUAM LAKE CRUISES

Squam Lake Charters

Plan ahead for 2024! Host your own unique gathering on Squam Lake with a private cruise customized to fit your occasion or transport wedding guests to Church Island. Our four canopied pontoon boats and experienced tour guides are ready to help with your special outing. Contact Erick Amero at 603-968-7194 x 110 or erick.amero@nhnature.org for reservations.

Save the Dates for our 2024 Summer Fundraisers:

Family Picnic: Saturday, July 20

Annual Meeting and Garden Party: Thursday, August 22

WISH LIST

- **For Animal Care:** Stuffed animals; pet toys; local hardware and grocery store gift cards; baby blankets; dog/cat beds; cologne/perfume; PVC fittings/caps
- **For events:** Bistro style string lights
- **For Exhibits:** Genuine black bear rug
- **For Intern Cottage:** Freestanding gas range
- **For Kirkwood Gardens:** Six to eight foot orchard ladder; garden spades and forks
- **For Lake Cruises Headquarters:** Pedestal fan, cordless power washer, boat hooks
- **For Operations:** Rolling office chair in good condition; wheelchair in good condition; Forks and spoons; paring knives
- **For Staff:** Airline miles to attend professional development experiences

FROM THE ARCHIVES:

A look back at the Science Center's history in photographs.

The Goodhue Collection of bird and mammal mounts from Charles Goodhue, was displayed in the 1980s in what is now the Gordon Children's Center.



KIDS' ACTIVITIES

LOOK FOR ANIMAL TRACKS

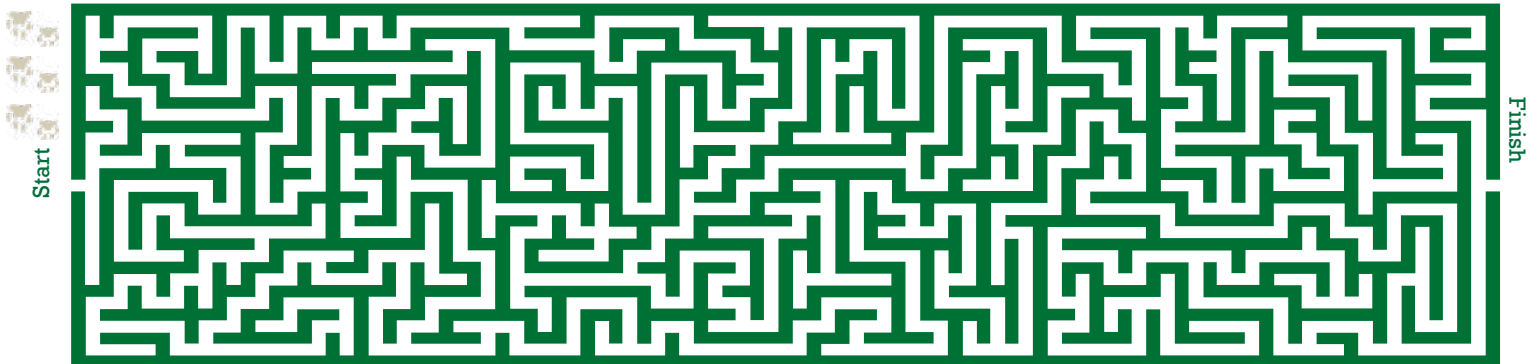
Looking for animal tracks can be done at any time of the year. Winter is an obvious time, especially one or two days after a light, fresh snowfall. There are many good books to help you identify tracks, but sometimes it's just fun to find tracks and follow them to see where they lead you. Along the way you may find clues as to what the animal was doing and why it was moving in the direction it headed. Taking pictures of a clear, distinctive set of tracks with a camera or cell phone can preserve the experience and help you to identify them later. Try to note the size of the track for a reference point.

During other seasons of the year, if you look along the edges of streams or wetlands, you're bound to find exposed stretches of sand or mud that animals have crossed.

Or, you can make your own track pit. If you have a sandy or muddy area in your yard it is fairly easy. Use a rake to clear a small area of leaves, sticks, and other debris. After you rake the area, use the back of the rake to create a smooth surface. Bait the middle with bird seed, fruit, raw meat, or even better, use all three. Smooth out your footprints. Check your track pit over the next several days to see what visited. If you don't have a sandy or muddy spot in your yard but do have a garden, you can create a small bare area in the fall after the growing season is over.



Follow the tracks through the maze.



MEMBERSHIP UPDATES

Give the Gift of Nature this Holiday Season!

Membership: We've made a change regarding gift memberships. When purchasing a membership for a friend or family member, you can do so by visiting the Membership section of our website at nhnature.org/membership. Just decide which membership level works best for your gift recipient, fill in the membership application with their information and pay for it with your credit card. Then let them know to be on the lookout for an envelope from Squam Lake Natural Science Center.

Gift Certificate: Give the gift of nature by purchasing a gift certificate in any amount by calling us at 603-968-7194 x 7. Recipients can easily use their gift certificate for trail admission passes, a membership, lake education cruises, or to purchase educational materials at the Howling Coyote Gift Shop.

We thank you for your support!

New Membership perks in 2024!

In an effort to streamline our membership process we are making some behind-the-scenes software upgrades. This should make your membership renewal and purchase process simpler and faster and should speed up check-in when you visit the Science Center.

In addition to presenting your membership card at the Admissions window when you visit the live animal trails next spring, please be prepared to show your photo ID. Memberships are nontransferable and are valid only for the member(s) named on the card. Members must be present to bring their guests on to the trail. Your Membership Card cannot be shared with friends and family in your absence. Any misuse of your card could result in your Membership being suspended or terminated. We thank you for your cooperation so we can continue to bring people Nearer to Nature for generations to come!

Books: The Science Center has published three nature books available at nhnature.org/books.

- *Birds of the Squam Lakes Region* by Beverly S. Ridgely, Revised and updated by Robert S. Ridgely with Kenneth H. Klapper
This expanded and fully revised edition of Bev Ridgely's classic work includes updated accounts of the more than 280 species of birds found in the area and includes more than 200 color photographs. This book provides a comprehensive overview of birdlife in the beautiful Squam Lakes Region.
Retail: \$35.00
- *50 Nature Activities for Kids* by Dave Erler
Get nearer to nature with Dave Erler and Squam Lakes Natural Science Center. Dave's many years of experience as a naturalist along with a lifelong curiosity for nature have come together in this book. Parents and children can enjoy 50 nature activities with step-by-step instructions to get outside and explore the natural world together!
Retail: \$14.95
- *Nearer to Nature* by Margaret Gillespie
Squam Lakes Natural Science Center has brought visitors and members nearer to nature since 1966. This compilation of writings by Naturalist Margaret Gillespie will transport you to the woods and waters of New Hampshire's natural world. Get inspired and up close to insects, birds, mammals, and plant life through words and pictures featuring the best of New Hampshire and Squam Lakes Natural Science Center.
Retail: \$19.95

2024 BONUS MEMBER BENEFITS

						
APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER



Reciprocal admission is generally good for up to two adults and two youth per visit. Be sure to take your membership card with you when you go. Check with specific organizations for hours, directions, and any additional policies.

Remember as a Science Center member, you also receive discounted admission all year at participating ANCA organizations like VINS in Quechee, VT and Seacoast Science Center in Rye, NH. Visit nhnature.org/membership for details.

Check out the Membership FAQs at nhnature.org/membership

THANK YOU VOLUNTEERS

A huge *Thank You* to our wonderful team of volunteers! Volunteers had much fun this year while assisting staff in almost everything we do. One of the ways we honor and celebrate volunteers is with the annual Parsons Volunteer Recognition Dinner. This year, the dinner was at Camp Deerwood in Holderness. Thanks to Lorne Thomsen and the Camp Deerwood family, we have been invited to have the event at the camp each year. Musicians Bob McCarthy and Billy Martin performed on the deck overlooking Squam Lake and the Ossipee Mountains before we moved into the dining hall for the awards ceremony and a delicious dinner by chef Clarence Williams.

During the dinner's Recognition Ceremony, Board Chair Sarah Brown highlighted the tremendous accomplishments of volunteers who have removed truckload after truckload of invasive weeds from our campus over the past six years, most often under the educational guidance of volunteer master gardener Liz Stevens. We also gave special thanks to volunteers who donated over 199 hours since beginning their service with us and others who earned the President's Volunteer Service Award by donating over 99 hours in 2022. Executive director Iain MacLeod highlighted the dedication

of long-standing volunteers, naming current volunteers with 20 or more years of service.

We have many volunteer opportunities, especially between May 1 and November 1. Located under the Support section on our website, the Volunteer Page lists descriptions of various volunteer positions and has a link to a Volunteer Application. Volunteers must be 12 or older, although service groups (such as the Scouts) may be younger. We offer teens between 14 and 17 years old opportunities to train as junior docents in the First Guides program. Positions for adults include Lake Education Assistants trained to lead school groups with lake-testing activities aboard pontoon boats and School Group Greeters who welcome and help organize school groups as they arrive for programs. We have amazing teams who prepare cordwood for our wood boilers and gardeners who maintain the beautiful public garden. Animal Care volunteers assist with preparing diets and cleaning environments for program animals, and volunteer docents interact with visitors, often demonstrating live animals. To become part of our volunteer team, please contact Volunteer Manager Carol Raymond at carol.raymond@nhnature.org or visit the Volunteer Page on our website.



VOLUNTEER PROFILE THE WOOD LOT TEAM



In 2013 the Science Center made a major commitment to green energy by installing a GARN furnace to burn locally sourced wood to heat the Science Center's main buildings during the winter. There were a lot of great reasons to switch to wood heat, but one drawback was how to find the manpower to prepare all the cord wood that would be needed. It takes about 50 pallets of wood to heat the buildings annually.

In preparation for the new GARN furnaces, Dennis Hager donated many hours to saw, chop, and stack thousands of pieces of wood into hand-built pallets. Bob Tuveson joined the crew in 2013 and over the next two years it grew to include Ken Ruhm, Bob Davis, Wayne Martin, Ken Ruhm, Ed Rushbrook, and George Gurney.

The group meets twice a week from early spring through late fall, building pallets, cutting, chopping, and stacking cords of wood. They have also helped with a number of other building related projects around the Science Center. This group has given approximately 200 to 300 hours of service annually to help the Science Center!

A couple of the original volunteers still work with the Wood Lot Team giving their time and hard work to help keep the Science Center warm in the winter. Are you interested in joining this amazing and dedicated team? Contact Carol Raymond (carol.raymond@nhnature.org or 603-968-7194 x 122) to learn more.

TRAIL'S END



There is never a dull moment at the Science Center especially in the summer months when the trail is open. Over 66,000 guests walked the trail in 2023 – our second highest total ever. And even though we had some bee stings and a few skinned knees, we can look back on a healthy and busy summer full of families and school groups, camp communities, repeat visitors, and several groups of homeschooled children.

But what I don't think most of us know about is all the visits made by our education staff who take what we call "program" or "ambassador animals" into schools, senior citizen centers and a wide variety of community groups throughout the region and year round. These animals are not out on the trail but rather are housed behind the scenes. They include a wide variety of raptors (hawks, falcons, and owls), turtles, snakes, and several small mammals including porcupines, striped skunks, Virginia opossums, woodchucks, mink, and bats.

When I first started volunteering at the Science Center years ago, I was lucky enough to be assigned to this "Animal Care" area of the campus. I cleaned cages, washed towels and toys used by the program animals, and watched the animal care staff with admiration as they carefully prepared healthy meals for the animals, all of whom has a specific diet; each meal is prepared with precision with just the right mix of protein or fruit or fiber for each animal.

Several years ago, we made a major upgrade to our program raptor housing, now it's the program animals' turn. We are building a specially-designed enclosure for these program mammals and calling this new area the "Ambassador Animal Annex." I look forward to seeing these animals live in areas where their habitat is specially designed to suit their particular likes and preferences.

It's just another example of the Science Center's commitment to giving the animals in our care a good life and one that is as close as possible to what they would have experienced in the natural world. Remember, virtually all our animals have had some injury, experience, or illness that renders them unable to live in the wild on their own.

My admiration for the animal care staff, who look after both the program animals and those on the live animal exhibit trail, is immense. They are on duty 365 days a year, in snow, heat waves and everything in-between. They are special heroes at the Science Center, along with countless others as well. I feel so lucky to know them and I so admire their work.

Trail's End is written by Sarah Brown, Chair of Squam Lakes Natural Science Center's Board of Trustees. You may contact her at sarahbrown1948@gmail.com.

CLIMATE AND COLOR *continued from page 1*

Exploring beyond New England, we find the Willow Ptarmigan (*Lagopus lagopus*), a bird of the tundra regions north of the tree line in Alaska and northern Canada. These birds molt from a summer brown with contrasting white underparts to a winter plumage of predominantly white with dark highlights. Through climate change, snow-free periods are being extended by earlier melting in the spring as well as warmer weather into the fall. The birds' camouflage coloration, linked to day length rather than temperature, may not be synchronized with their changing surroundings. The ptarmigan's range is projected to shift somewhat northward to stay aligned with cooler temperatures. This expansion would see Willow Ptarmigans becoming part of arctic landscapes at warmer times of the year.



Are these climate shifts and changes showing us a trend moving forward? Perhaps. Let's be sure to investigate the surprises which pop up around us in the natural world and use these observations to widen our view. What actions, simple or complex, can we take to lighten our footprint on the earth? Even small changes can make a big difference.

CLIMATE AND COLOR QUIZ

1. What triggers snowshoe hare to grow white coats for winter?
2. What part of a weasel's coat stays black all year round?
3. T or F? The Willow Ptarmigan's range extends into northern New Hampshire
4. What color are weasels' coats in summer? In winter?
5. Willow Ptarmigan color change is linked to
A. temperature B. day length C. snow cover

Answers:

1. Shortening day length | 2. Tip of tail | 3. F
4. Summer: brown. Winter: white | 5. B



SQUAM LAKES NATURAL SCIENCE CENTER

PO Box 173, 23 Science Center Road
Holderness, NH 03245

Return Service Requested

Non-Profit Org.
U.S. Postage
PAID
Permit No. 1
Holderness, NH
03245



**Please give to the
Annual Fund by
December 31.**

Printed on recycled paper

This newsletter is generously underwritten by:



As a LakeSmart Service Partner, Maxfield Real Estate is committed to doing our work in a way that supports clean and healthy lakes in New Hampshire and helps our clients live in a lake-friendly way.

www.MaxfieldRealEstate.com

WOLFEBORO 603-569-3128	CENTER HARBOR 603-253-9360	ALTON 603-875-3128	MEREDITH 603-677-7068
---------------------------	-------------------------------	-----------------------	--------------------------

CHRISTOPHER P. WILLIAMS ARCHITECTS, PLLC
PO Box 703 • Meredith, NH 03253 • 603-279-6513
www.epwarchitects.com



We use green building techniques, along with local craftsmen and materials, to build a home designed to suit your needs, lifestyle, and budget.