



TRICKS INSECTS PLAY

By Margaret Gillespie



Northern Walkingstick

Think about the numbers -- over a million species of insects fly, crawl, hop, swim, or otherwise move about on our planet Earth. Many showcase surprising and successful adaptations. Continue with me as we explore backyards, fields, and forests in search of three insects that might surprise and inspire you by the tricks they play.

Our first character, the click beetle (*Family Elateridae*), could be close by, hidden in your lawn or garden. It has two other intriguing common names – snapping beetle and spring beetle. This dark brown beetle is small, measuring little more than three quarters of an inch, and does not appear remarkable in any significant way. Get ready for a startling surprise if you place one on its back on the ground or in your hand. The beetle arches upwards at the juncture of the thorax and abdomen and makes a clicking sound as it pops off your hand up into the air at an astounding speed of eight feet per second! Upon landfall, it literally hits the ground running, scurrying away into the grass. What escape mechanism is at work here? Click beetles have a ventral spine originating just behind the head. When this spine is engaged or connected to a notch near the middle pair of legs, the beetle is ready for action. The power produced when the spine releases propels the insect into the air. This trick, an essential escape tool, can also be handy for simply righting the beetle if it has ended up on its back. The most common species to see is quite inconspicuous whereas the Eastern eyed click beetle has an extra surprise – large, false black eyes, outlined in white on its dark thorax.

Are you ready to give your eyes a challenge with our second insect? Extra energy and luck are part of spotting a walkingstick (*Family Diapheromeridae*). The northern walkingstick is large, three to almost four inches in length, and greenish brown in color. With its front legs flexed forward and rear legs against the body, extended in a hiding position, the walkingstick resembles a twig, hence its name. This insect also blends in with pine needles, one of its food sources. What creatures would be interested and capable of ingesting a walkingstick? Despite the odds, a number of songbirds and rodents relish walkingsticks in their diet. It may also come as a surprise that bats adeptly bypass walkingstick mimicry because of their ability to zone in on the insects using echolocation. How do these mimics of tree branches reproduce? We could say one by one. From their treetop homes in the fall, females lay one egg at a time, eventually totaling over 100 eggs. Each egg makes the journey separately to the forest floor below, imitating tiny seeds dispersing. Some eggs, of course, are eaten by predators while others survive to overwinter and hatch in the spring.

continued on page 11

IN THIS ISSUE...

- Page 2 *Birds of the Squam Lakes Region*
- Page 3 *Trustee Profile: Ken Evans*
- Page 4 *Moose to Monarchs*
- Page 6-8 *Programs, Events, and Lake Cruises*
- Page 9 *From the Archives*
- Page 9 *Green Tip: Eco-Friendly Birdwatching*
- Page 11 *Trail's End*
- And much more!



Program and event tickets available at nhnature.org.

FORGING TRAILS: CELEBRATING "BIRDS OF THE SQUAM LAKES REGION"



In 1977, Beverly Ridgely wrote *Birds of the Squam Lakes Region*, a wonderfully detailed account of the bird species that he and his son Bob had documented in the Squam area. The book was universally well-received. It went out of print in 1985 and Bev then decided to write a revised and expanded edition, which was published in 1988. That edition had a scholarly introduction by the late Tudor Richards - one of the greats of New Hampshire ornithology and a good friend to me in my days with NH Audubon - and

lovely pen and ink illustrations by John Gwynne and Cynthia House. The 1988 book has had a place on the bookshelf next to my desk since I came to the Science Center in 2006. It too is long out of print.

Bev died in 2017 just shy of his 97th birthday. Bob of course has gone on to world-renowned bird conservation work in the tropics (see member profile in Spring 2022 *Tracks & Trails*) and has remained active in the birding scene in the Lakes Region. He and I have birded together over the years and worked on the Sandwich Christmas Bird Count together so when Bob started talking about a new version of his father's book, I was intrigued.

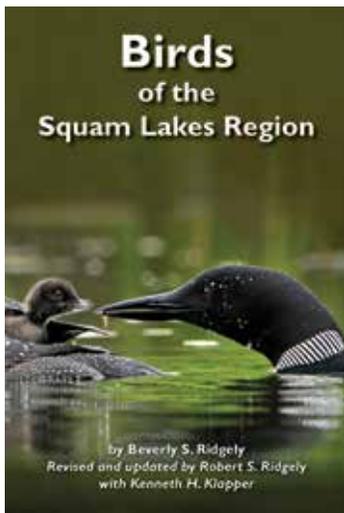
In early 2019, Bob convened a meeting here at the Science Center with me and another Squam area birder Ken Klapper, and we agreed to collaborate. Bob and Ken would work on revising the original bird accounts, writing new accounts for species that had been added to the area list since 1988, and sourcing photos. I would do the book design and layout and the Science Center would serve as fiscal agent and publisher.

Over the past three years, we have chipped away at this huge project and I am delighted to report that the completed books will arrive soon. The new *Birds of the Squam Lakes Region* is 400 pages packed with detailed information on the natural history and status of the more than 280 species of bird recorded here and illustrated with more than 200 color photos by some of the finest wildlife photographers in the region. It also includes a "Birds and Hiking" section highlighting the best locations to see birds in the region.

In the Preface of the new book, Bob writes "...Dad would go out on near-daily bird walks, or later drives, carefully recording the birds he'd seen. I've never seen so many notes! Toward the end they became scattershot, but the first few, many of them detailed, formed the basis for what became his *Guide to the Birds of the Squam Lakes Region*. Copies of that book, with its familiar green cover adorned by my friend John Gwynne's lovely drawing of a Common Loon and its chick,

became a familiar sight in many homes around the lake. That was just as he wanted it. He wanted everyone to know about, and to love, birds! As a professional ornithologist and conservationist, I do too. And I gradually realized that there was going to be no better way to honor Dad's memory than to republish his book, getting it back into circulation."

The book is available for ordering now at nhnature.org/books. All proceeds from the sale of the book support the Science Center.




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

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

Justin Van Etten, Chair
Sarah Brown, Vice Chair
Anne R. Lovett, Treasurer
Susan Lynch, Secretary

Lisa Aulet, Ed.D.
Kevin Barrett
Laurie Beeson
Lisa V. Bennett
Laurie Thomsen Burke
Cathy Denious
Kenneth H. Evans, Jr.
Diane Garfield Gross
Martha Grant
Barbara Nan Grossman
Carl Lehner
David Murphy
Emily Preston
Richard L. Starbuck
Geoffrey Stewart

HONORARY TRUSTEES

George Carr
David W. Cote, D.V.M.
Bertha H. Fauver
Maurice Lafreniere
John McRae
Tashia Morgridge
Carol Thompson
Stephen G. Woodsum

STAFF

Erick Amero, Operations Manager
Bonnie Baker, Human Resources and Finance Manager
Kim Beardwood Smith, Development Officer
Jennifer Byam, Blue Heron School Associate Teacher
Dennis Capodestria, Exhibits Assistant
Eric D'Aleo, Naturalist
Adam Donnelly, Facilities Assistant
Bob Donnelly, Facilities Assistant
Brian Eaton, Finance Director
Clare Eckert, Facilities Assistant
Audrey Eisenhauer, Education Director
Brenda Erler, Gardens and Exhibits Assistant
Emma Erler, Gardens and Exhibits Assistant
Genlyne Fiske-White, Animal Care Associate
Jordan Fitzgerald, Blue Heron School Lead Teacher
Jordy Gianforte, Blue Heron School Co-Lead Teacher
Amanda Gillen, Development and Communications Director
Margaret Gillespie, Naturalist
Phoebe Hartvigsen, Assistant Naturalist
Keith Hosking, Facilities Director
Joy Huke, Membership and Visitor Services Coordinator
Iain MacLeod, Executive Director
Laura Mammarelli, Blue Heron School Director
Lauren Moulis, Animal Care Director
Mary Noyes, Administrative Assistant
Morgan Goodrich-Osborne, Animal Care Associate
Dylan Parker, Blue Heron School Associate Teacher
Jeremy Phillips, Naturalist
Carol Raymond, Volunteer Manager
Liz Rowe, Finance Assistant
Kyle Salmons, Naturalist/ Guided Discoveries Instructor
Corrie Underwood, Blue Heron School Co-Lead Teacher
Kevin VanGorden, Lead Animal Care Associate
Sarah Wall, Visitor Services Manager
Dan Walsh, Facilities Assistant
Holly Williams, Animal Care Associate

ACCREDITED BY THE
**ASSOCIATION
OF ZOOS &
AQUARIUMS**

TRUSTEE PROFILE

KEN EVANS



Aristotle said, "Change in all things is sweet." Things have changed a lot since I first came to Squam Lake in 1972. My wife Jenny invited me to visit in 1972 during our summer break from college. Her family has been a fixture on the lake since the 1930s. I immediately fell in love with the place. That summer included my first water ski adventure, a hike up Rattlesnake Mountain,

bowling at what is now Walter's Basin, swimming, boating and, of course, a visit to the Science Center in what is now the historic Holderness Inn. I had no idea at the time that this history would lead many years later to a nine-year term on the Science Center Board and a life-long appreciation for the greatest gem in the state of New Hampshire.

The Science Center has changed during the years between then and now. But, so have I. My work required us to move frequently around the country, so change was the norm for our family. Our attitude was similar to what Heraclitus said, "There is nothing permanent except change." We always knew though, that when work was done, Squam Lake was where we would retire and give as much back to the community as we could. Within one year after our permanent arrival here, we were immersed in the workings of all things civic and non-profit.

During my time on the Board of Trustees we have completed two major capital campaigns, added many new buildings with significant educational exhibits, expanded our visitor count, experimented with visiting exhibits, and most importantly, increased our impact on the natural science world. I could not be more proud of my association with the staff, volunteers, and dedicated Trustees who make the Science Center as successful as it is. And, according to Winston Churchill, "To improve is to change, to be perfect is to change often." The pace of change at our Science Center has been remarkable.

Yet, some things never change and just don't need to be tinkered with. Henry Ford said, "If I'd asked my customers what they wanted, they'd say don't change a thing." The Science Center is a lot like that too. Some people visit to view the new exhibits. Others come to fulfill science requirements in their schools. Many take boat cruises to enjoy the beauty and serenity of Squam Lake. But I would suggest that most come because they quite simply must. This place is in their DNA. This is where they align with nature and feel alive with excitement and optimism. What better way to educate than in a surrounding like this? Nelson Mandela was not referring to our Science Center when he said this, but it is meaningful none the less, "Education is the most powerful weapon which you can use to change the world." I think that is what we do at the Science Center, and we have done it very well for a long time.

Ken resides in Holderness with his wife Jenny. Ken has been a trustee since 2013.

NEWSBRIEFS

• We have new staff to welcome including:

• Joy Huke as Membership and Visitor Services Coordinator. Joy has a background working for nonprofits and is excited to be joining the Science Center. Joy will handle all memberships for the Science Center. Contact her if you have any questions.

• Bonnie Baker as Human Resources and Finance Manager. Bonnie managed the College of Business Administration at Plymouth State University and has run her own small business.

• Erick Amero as Operations Manager. Erick worked at the Science Center in 2021 as a seasonal Visitor Services Associate and is excited to be joining the staff full time overseeing front-end operations, Squam Lake Cruises, and IT.

• Welcome Emma Erler as Gardens and Exhibits Assistant. Emma spent time as a horticulturalist at botanic gardens and recently at UNH Extension. And yes, the name is familiar because Emma practically grew up at the Science Center with her parents Brenda and Dave.

• Welcome Phoebe Hartvigsen as seasonal Assistant Naturalist. Phoebe will be assisting in all areas of education programming.

• We said goodbye to two staff members. Operations Director Sharon Warga left to join White Mountain College for Pets. You may still see Sharon volunteering for the summer event

or in other areas. Operations Manager Paul Brochu is heading to Japan to work in occupational health in a civilian role with the Navy.

• We are excited to welcome our 2022 summer interns:

• Volunteer Program: Abby Bailey - Abby is pursuing her JD at Vermont Law School with a joint degree in forestry at Yale School of the Environment. She feels passionate about environmental education because of the curiosity and joy it sparked in her at a young age.

• Marketing: Niamh King-Sanders - Niamh is studying Marketing and Digital Media at Edinburgh Napier University in Edinburgh, Scotland. She serves as the Media Manager for the Yoga Society at her university, and has spent a lot of time developing her skills in communication.

• Animal Care: Hope Kennedy - Hope graduated from Kent State University with a dual degree in Biology and Musical Theater. She completed an internship at a wildlife rehabilitation center where she learned rehabilitation techniques, provided educational tours of the wildlife center, and presented programs with ambassador animals.

• Education: Savannah Kearns - Savannah Kerns is a master's student at Antioch University. She has focused on research but has a passion to pursue outreach and education.

continued on page 4

NATURALIST'S CORNER

MOOSE TO MONARCHS

By Eric D'Aleo



Five years ago, Squam Lakes Natural Science Center started Hidden Stories, a project using trail cameras to discover the wildlife found on our property. The focus was on species like black bear, coyote, white-tailed deer, and red fox because of their size and the chance to catch an exciting glimpse into their lives. We were also curious about how many species the cameras might capture. What species would we see most often, least often, and why?

Thirty-five species have been repeatedly sighted each year, with 14 to 21 additional species sighted in one year but not others. It is interesting that the most commonly sighted species include large animals (red fox, white-tailed deer, coyote) and small animals (chipmunk, gray squirrel, mouse, red squirrel). Of the 80 species we have seen in four years, twenty-five small animals species had one to two sightings over that time, while only three larger animal species had similar low numbers. Why is that?

One reason for such low sightings may be difficulty by the cameras to detect small animals. Using heat or motion sensors, the cameras may not pick up the slow motion of an animal that is the same temperature as its surroundings. Some small, fast animals may already be out of the camera picture frame before the camera senses them. However, shooting a series of photo images or video has allowed us to capture these "tiny treasures" in their natural communities.

Examples of accidental sightings include, a video of a bright orange, red eft crawling across a log because a chipmunk triggered a camera as it scampered past; a blurred photograph of a monarch butterfly in a field on a summer day captured by a series of shots triggered by its movement; separate red backed vole and shrew videos taken by chance because a black bear "rearranged" a camera to focus on the forest floor; a video of numerous wood frogs lying motionless in a vernal pool, their eyes reflecting the infrared light from the camera, before a barred owl swoops in to catch one. These brief glimpses into the lives of overlooked neighbors are the stories behind the graphs and maps we create to monitor numbers and movements. Behaviors, identification, and interactions create a richer narrative of the natural world around us and our place in it.

Want to find your own Hidden Stories? Start small, plant native shrubs, wildflowers, and trees to provide food and shelter for insects, birds, and small animals in your yard. Place logs, rocks, or other natural features in the landscape. Once established, place a trail camera to see what visitors appear. Keep track of sightings and determine if there are daily, seasonal, or yearly changes. The area may be used for feeding, resting, or as part of an animal's territory. Once you start, you may find it is a never-ending story.

To learn more about Hidden Stories visit nhnature.org/hiddenstories, explore the Hidden Stories playlist at YouTube.com/nhnature, and investigate the Hidden Stories exhibit on the exhibit trail located in the Webster Building lobby.

NEWSBRIEFS *continued from page 3*

Realizing her love to share information she worked at the Ohio Wildlife Center where she took animal ambassadors on outreach programs.

- Education: Liz Jordan - Liz is a junior at the University of Rhode Island majoring in wildlife conservation biology. Her goal is to be a park ranger or a wildlife educator.
- Nature Day Camp Intern: Erika Newton

- Erika has been visiting the Science Center since she was a child. She is a junior at UNH studying Environmental Conservation and Sustainability, minoring in Forestry.

- The Science Center was named a New Hampshire Magazine "Best of NH 2022" for Best Summer Outdoor Attraction - Lakes Region. The winners are celebrated at the popular Best of NH Party in June.

WISH LIST

- For Animal Care:** newspapers; Little Tykes or Playskool jungle gym; heavy-duty storage tubs; gift cards to local hardware and grocery stores; bath towels; 36-quart hard sided cooler
- For Blue Heron School:** 10 x 10-foot tarp
- For Facilities:** chain saw vise
- For Kirkwood Gardens:** 1-quart, 2-quart, and gallon pots; orchard ladder
- For Offices:** four pairs of bookends; small folding or card table; push wheelchair



HOWLING COYOTE GIFT SHOP

All new eco-friendly and inspiring products!



KIRKWOOD GARDENS PLANT SPOTLIGHT

By Emma Erler

Black Snakeroot *Actea racemosa*

Culture: This native perennial thrives in woodland settings with rich, moist soils in partial shade, ideally receiving 2-3 hours of morning sun. Plant in a protected area to save stems from wind damage.

Bloom: July to August. Tall spires of white flowers atop long stems. A true showstopper in shady gardens.

Height: A large plant growing 3-6 feet tall; best for the back of perennial borders

Black snakeroot is a native New England woodland plant that can be found growing in select locations in NH. Though sometimes slow to establish, black snakeroot may spread readily by rhizomes, making it a great option for naturalizing. Hardy to zone 3, black snakeroot can be grown in any garden in the granite state with part shade and moist soil.

Kirkwood location: Around the old apple tree in the lower garden.



flickr/cultivar413 CC BY 2.0

Beauty Bush *Kolkwitzia amabilis*

Culture: Prefers moist, well-drained soil, though quite drought tolerant. For best bloom, plant in full sun (six hours of direct light daily).

Bloom: Late May to June. Pale pink, bell-shaped flowers at the tips of arching stems.

Height: 5-8 foot medium to large shrub

Beauty bush is an old-fashioned shrub most at home at the back borders of landscapes. A member of the honeysuckle family, beauty bush gets its name from its abundant pink flowers in late spring/early summer. Outside of bloom it has little ornamental appeal, though its peeling bark can provide visual interest in the winter garden.

Kirkwood location: Center of Rte. 3 side of lower garden



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



FROM THE HERON'S NEST

By Laura Mammarelli

Exploring the Science Center is always a favorite activity for the Blue Heron children. They love exploring along the Ecotone Trail, playing in the woods at the area they have named Three Bridges, and visiting the ponds and streams which is always an adventure.



Blue Heron School is a nature-based Montessori school for children ages three to six. For more information please visit nhnature.org/programs or contact Laura Mammarelli, Blue Heron School Director, at 603-968-7036 or blueheron@nhnature.org.

CALENDAR OF PROGRAMS & EVENTS

Programs have limited capacities. Tickets must be reserved and paid for in advance at nhnature.org.

JUNE

<p>JUNE 24 THROUGH SEPTEMBER 5 For all ages</p>	<p>StoryWalk™ Featuring <i>The Bugliest Bug</i> by Carol Diggory Shields and illustrated by Scott Nash Kickoff Reception, Friday, June 24, 10:00 to 11:30 a.m. Stroll along the channel as you read this fun story about the news of a big contest that has all of insect land abuzz, posted one page at a time along the trail. StoryWalk™ surrounds the Holderness Town Gazebo behind the Holderness Post Office at Curry Place. Presented in partnership with Holderness Library and Holderness Recreation Department. <i>Cost: No charge and no reservations required.</i> Sponsored by: </p>
--	--

JULY

<p>JULY 8 FRIDAY 9:00 to 10:30 a.m. For ages 5 and up</p>	<p>Insects Alive Guided Tour Go on a guided tour of the visiting giant insects exhibit with retired New Hampshire Fish and Game Biologist, Emily Preston. With a stop at each of the five giant, animatronic insect models, learn about where our native insects live, their fascinating adaptations, and what you can do to help them survive. Participate in an insect search in the field or pond to discover the diversity of insects around us. <i>Cost: \$9/member; \$11/non-member</i></p>
<p>JULY 12 TUESDAY 10:00 a.m. to 4:00 p.m. For all ages</p>	<p>Pollinator Party Buzz over to the Pollinator Party, a celebration of the life and work of bees, butterflies, and other pollinators! Bees and other pollinators play a major role in American agriculture by pollinating fruits, vegetables, nuts, and seeds. Pollinator Party brings together bees, beekeepers, flowers and more. Visit with local beekeepers and learn how to raise your own bees. See the bee houses in Kirkwood Gardens, learn about plants that attract pollinators, and find out about native bees. Make a wildflower seed bomb to start your own pollinator garden at home. <i>Cost: Included with trail admission</i></p>
<p>JULY 14 THURSDAY 6:30 to 7:30 p.m. For adults</p>	<p>Lecture Series: Dragons and Damsels of New Hampshire by Dr. Pamela Hunt, NH Audubon Senior Biologist Welcome to the fascinating world of the insect order Odonata! You may be familiar with the dragonflies buzzing over your yard in the summer, or the damselflies that land on your kayak, but what do you <i>really</i> know about these ancient insects? This program provides an overview of the biology and ecology of dragonflies and damselflies, from their amazing life cycle (content alert: some pretty crazy reproductive behavior is involved!) to their incredible diversity. It also highlights a few of NH's notable species and their stories, and closes with some results from the New Hampshire Dragonfly Survey, a five-year volunteer-based project that documented the distribution of these insects across the state. This is an in-person program held in our covered, outdoor classroom. Dress for the weather and bring bug spray. <i>Cost: No charge to attend. Advance registration is required.</i></p>
<p>JULY 18 MONDAY</p>	<p>Insects Alive Guided Tour 9:00 to 10:30 a.m. For ages 5 and up <i>Cost: \$9/member; \$11/non-member</i> <i>See description for July 8.</i></p>
<p>JULY 23 SATURDAY 5:00 to 8:00 p.m. For all ages</p>	<p>2022 Family Food Truck Picnic - A fundraiser for the Science Center We've created a brand new family-friendly event for our annual summer fundraiser. The Family Picnic will celebrate Giant Insects and feature animal programs, animal games, live music, and more in a fun, casual atmosphere. All food and drinks are included in the ticket price and include food from Gyro Spot, Cheese Louise, SubZero Nitrogen, Joye-ful Cookiery, and more. Open bar includes local beer, wine, signature cocktail, and non-alcoholic bug juice for the kids. Bring your friends and entire family to this fun event. Limited tickets are available. Look for your invitation via email in late June. <i>Tickets: \$75/ ages 21+; \$20/ ages 12-20; \$10/ages 6-11; Free for 5 and under.</i></p>

2022 VOLUNTEER TRAINING

- Docent Training: June 14 through 17 from 3:00 to 7:00 p.m., and June 18 from 9:30 a.m. to 1:30 p.m.
- First Guides Training: June 25 from 9:30 a.m. to 3:30 p.m., June 28 from 9:30 a.m. to 2:30 p.m., and June 29 through 30 from 9:30 a.m. to 1:30 p.m.

Learn more by emailing carol.raymond@nhnature.org.

AUGUST

<p>AUGUST 5 FRIDAY</p>	<p>Insects Alive Guided Tour 9:00 to 10:30 a.m. For ages 5 and up <i>Cost: \$9/member; \$11/non-member</i> <i>See description for July 8.</i></p>
<p>AUGUST 11 THURSDAY 6:30 to 7:30 p.m. For adults</p>	<p>Lecture Series: Eastern Box Turtles: Conserving NH's Rarest Turtle and other At-Risk Species by Josh Megyesy, NH Fish & Game Wildlife Biologist, Nongame and Endangered Wildlife New Hampshire Fish & Game's Josh Megyesy will discuss monitoring and conservation efforts for state endangered eastern box turtles (<i>Terrapene carolina carolina</i>). The presentation will cover habitats, biology/ecology, and threats to the species. Josh will also talk about other ongoing work for at-risk turtle species, such as Blanding's, wood, and spotted turtles, and how landowners can help protect NH's turtles. This is an in-person program held in our covered, outdoor classroom. Dress for the weather and bring bug spray. <i>Cost: No charge to attend. Advance registration is required.</i></p>
<p>AUGUST 13 SATURDAY 8:30 to 10:00 a.m. For members</p>	<p>Annual Meeting for Members Enjoy a complimentary continental breakfast before the business meeting starting at 9:00 a.m. Business includes electing officers and trustees, honoring retiring trustees, recognizing employee service, and presenting the Horizon Award. Election slate and biographies of nominees will be posted after July 1 to nhnature.org. <i>Cost: No charge to attend but reservations are requested.</i></p>
<p>AUGUST 18 THURSDAY 10:00 a.m. to 4:30 p.m. For all ages</p>	<p>The Ground Beneath Our Feet Soil Tent Traveling Exhibit Hosted by Olivia Fraser and Patrick Moran, US Forest Service Soil Scientists The Ground Beneath Our Feet is a partnership between the U.S. Forest Service, the Global Learning and Observations to Benefit the Environment (GLOBE) Program, the Arts Alliance of Northern New Hampshire, and the White Mountain National Forest. The Soil Tent, a traveling educational exhibit, evokes the striking visual experience of entering into the earth with its layers and creatures on display. Each ten-by-ten foot interior face of the Tent represents one of three different ecosystems: forest, meadow, and wetlands. Along with the Tent, a series of hands-on science activities offer visitors the opportunity to deepen their curiosity about and understanding of the soil, and to emerge with new tools for observing their soil environment, wherever they may find themselves. <i>Cost: Included with trail admission</i></p>
<p>AUGUST 25-27 THURSDAY - SATURDAY 9:30 a.m. to 4:30 p.m. For all ages</p>	<p>Caterpillars in Residence with The Caterpillar Lab Join us as The Caterpillar Lab takes over our Tamworth Pavilion for a three-day exhibit featuring a huge variety of New England caterpillar species with plenty to see and touch! Educators from The Caterpillar Lab will teach you all about metamorphosis and tell incredible but true stories about the creatures' strange and surprising adaptations. Some caterpillars are camouflaged to look like twigs or snakes. Some have stinging spines or brightly colored baubles. Check out these little-known native critters munching on their food plants right in front of you. You are sure to see and learn something new! Exhibit closed for a lunch break from 12:30 to 1:30 p.m. Find out more about The Caterpillar Lab at www.thecaterpillarlab.com. Generously sponsored by Belknap Landscape Company, Cottage Place, The Inn on Golden Pond <i>Cost: Included with trail admission</i></p>
<p>AUGUST 29 MONDAY</p>	<p>Insects Alive Guided Tour 9:00 to 10:30 a.m. For ages 5 and up <i>Cost: \$9/member; \$11/non-member</i> <i>See description for July 8.</i></p>

SEPTEMBER

<p>SEPTEMBER 17 SATURDAY 10:00 a.m. to 4:30 p.m. For all ages</p>	<p>Raptor Migration Celebration Fall is a season of transition and many animals are on the move to wintering grounds. Join us to see migratory raptors at Up Close to Animals presentations in the amphitheater throughout the day. Learn about where our raptor species go each winter, how long it takes them to get there, and why they bother to return. Do not miss the special Birds of Prey program at 11:00 a.m. or 12:30 p.m. by the Vermont Institute of Natural Science (VINS), featuring a flight demonstration with their raptor ambassadors. <i>Cost: Included with trail admission</i></p>
<p>SEPTEMBER 18 SUNDAY</p>	<p>Insects Alive Guided Tour 9:00 to 10:30 a.m. For ages 5 and up <i>Cost: \$9/member; \$11/non-member</i> <i>See description for July 8.</i></p>

ON THE TRAIL

-  **Turtle Talks** - Every Tuesday in July and August at 10:30 a.m. on the Bluestone Terrace of the Webster Education Building
-  **Up Close to Animals** - Daily in July and August at 11:00 a.m. and 2:00 p.m. at the Amphitheater

Visit the Calendar of Events at nhnature.org for a daily schedule, details, and program information.

SQUAM LAKE CRUISES

Bald Eagle Adventure

June 7 to June 28: Tuesdays at 3:00 p.m.

A naturalist discusses the recovery of Bald Eagles in New Hampshire and the route focuses on viewing the Bald Eagles that nest on Squam Lake.

Discover Squam

Now through June 30: Daily at 1:00 p.m.

July 1 to October 14: Daily at 11:00 a.m. and 1:00 p.m. | Wednesdays and Sundays also at 3:00 p.m.

Enjoy Squam Lake and learn about the natural history, wildlife, culture and people of the lake.

Loon Cruise

June 10 to 24: Fridays at 3:00 p.m.

June 27 to August 26: Mondays and Fridays at 3:00 p.m.

See Common Loons as a Science Center naturalist and Loon Preservation Committee biologist discuss loon conservation, biology, and monitoring. The cruise route maximizes loon observations and changes weekly.

Cruise with a Naturalist

July 5 to October 6: Tuesdays and Thursdays at 3:00 p.m.

See wildlife on every memorable trip with a Science Center naturalist. Cruise route changes to maximize wildlife observations.



Squam Lake Cruise Rates:

Adult: \$27; Senior (65+): \$25; Youth (up to age 15): \$23

Members receive a \$4 discount per person.

Not recommended for children under age 3.

Cruises may be cancelled if minimum attendance (4 passengers) is not met.

Conveniently purchase cruise tickets online at nhnature.org

Squam Lake Charters

Host your own cocktail party or other unique gathering on Squam Lake. Transport wedding guests to Church Island. Charter a private cruise customized to fit your occasion. Our canopied pontoon boats and experienced tour guides are ready to help with your special outing. Contact Erick Amero at 603-968-7194 x110 or erick.amero@nhnature.org for reservations. *Minimum 1.5 hours.*

\$250 per hour per boat



Giant animatronic insects immerse you in a world of invertebrates to learn about the important roles they play in preserving the balance of nature. *Included with trail admission. Open daily July 1 through September 30.*

Generously sponsored by:



FROM THE ARCHIVES

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



After 42 years, Brenda Erler is retiring from the Science Center. Brenda has held nearly every role at the Science Center from volunteer coordinator to office manager to naturalist and many other roles in between. She has been doing exhibit work since the mid 1990s and overseeing Kirkwood Gardens since 1997. Brenda is one big reason why the Science Center is what it is today.

We will miss her humor and stories but expect to see her volunteering at Kirkwood Gardens on Thursday mornings. Brenda - we wish you the absolute best for your retirement!

Photos clockwise from top left:

Brenda showing a Great Horned Owl to students in the 1980s

Brenda showing a snake to children in the 1980s.

Brenda at Kirkwood Gardens in 1999.

Brenda collecting insects in the 1980s.

GREEN TIP: ECO-FRIENDLY BIRDWATCHING

Birdwatching is generally eco-friendly due to the fact that you can do it anywhere and it's accessible to many. However, there are still things you can do to make sure you are an environmentally conscious birdwatcher:

- **Bird houses:** Choose wood instead of plastic.
- **Your yard:** Grow native plants, trees, and shrubs that naturally attract birds, and other wildlife, to your yard. Also, skip the insecticides and chemicals.
- **Place:** Watch but don't disturb birds. Don't litter and respect the place and all the animals that live there.
- **Travel:** You don't have to travel far to watch birds. Check out the birds in your backyard or at a local park or conservation area.
- **Social:** Encourage others to join you in your hobby as you learn.
- **Books:** Identification guides are a great help to learning the birds around you. Be sure you have an updated copy of *Birds of the Squam Lakes Region* to identify the birds in the Squam Lakes area. See page 2.

Remember that you are stewards of the birds and their habitats so everyone can enjoy seeing these feathered friends.



Baltimore Oriole by Iain MacLeod

OPENING A WINDOW TO THE NATURAL WORLD

Sensory Inclusive™ Certification



We are proud to announce that the Science Center is working with the international nonprofit organization, KultureCity to become certified as a Sensory Inclusive™ facility. Sensory needs and invisible disabilities can include autism, PTSD, dementia, Parkinson's disease, stroke, and more.

Becoming certified as Sensory Inclusive™ means that our staff is trained in sensory processing needs and is accepting and inclusive to all. Sensory bags and weighted blankets are now available at the Admissions window. The bags include noise-cancelling headphones, fidget toys, ID cards, and communications cards. A sensory map of the trail will be available at Admissions beginning in July. You may notice additional signs on the live animal exhibit trail indicating locations for headphones and quiet zones. See photo on right.

We look forward to continuing to provide the best possible visitor experience for all visitors. Please feel free to contact us with questions.



Opening a Window to the Natural World is written by Development and Communications Director Amanda Gillen. You may contact Amanda at 603-968-7194 x 134 or amanda.gillen@nhnature.org.

BONUS MEMBER BENEFITS

 MOUNT WASHINGTON OBSERVATORY mounthewashington.org	 CHILDREN'S MUSEUM of NEW HAMPSHIRE	 CURRIER MUSEUM of ART	 VERMONT INSTITUTE OF NATURAL SCIENCE VINS	 McAuliffe-Shepard Discovery Center We bring the universe to you
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. Visit the Membership section at nhnature.org for full details and website links where you may check organization hours and directions as well as any additional reservation or safety policies/protocols.

Remember as a Science Center member, you also receive discounted admission all year at participating AZA and ANCA organizations. Visit the Membership section of nhnature.org for details.

Give a gift to the animals at <https://amzn.to/3qhZDBN> or shop with Amazon Smile to support the Science Center with every purchase.



SPONSOR A SPECIES!

Your sponsorship helps provide food, health care, and housing for the animals. It's a unique way to learn about a particular species and help us to care for our live animals.

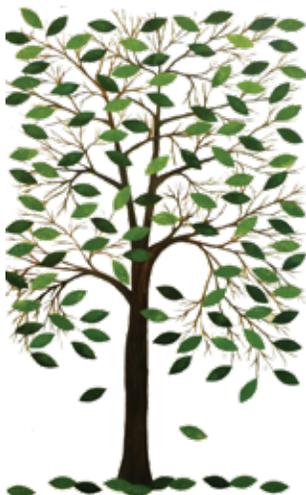
Visit www.nhnature.org/support

What Will Your Legacy Be?

Since 1966, Squam Lakes Natural Science Center has provided enriching natural experiences that plant priceless seeds of wonder. Most of us have memories of places and events in our childhood that created a lasting connection to the natural world. Do you have memories of enjoyable time well spent on the live animal trail with your family? Do you learn something new every time you visit that makes you think? Do you believe future generations need to love and understand the natural world in order to cherish and protect our heritage?

Your legacy gift will help Squam Lakes Natural Science Center to continue to achieve its mission to teach about the natural world for generations to come.

Become a member of the Naturalist's Legacy Society. Visit nhnature.org/support



These generous donors made tribute gifts, which were received between January 1 and March 31, 2021:

*In Honor of Ella McCleary
Barbara McCleary*

*In Honor of Janet Robertson
Susan and Tom Stepp*

*In Memory of Richard Davis Herrick
Terri Pollini*

*In Memory of Shirley Stockwell
Elizabeth Goodwin
Sean Murphy*

TRAIL'S END



If you have not already heard, Laura Mammarelli, Director of Blue Heron School and Horizon award recipient in 2018, is retiring.

Personally, I will forever be grateful to Laura for helping make Blue Heron School happen but I don't want this article to be about why Blue Heron was so great for our kids. If only because trying to tell you how transformative the school has been for my family would take up the whole newsletter!

When I think about why Blue Heron is so incredible it's not really about early childhood education. There are a number of wonderful preschools in the area. It's not about the benefits of Maria Montessori's education changing philosophy. There is another wonderful Montessori preschool right here in Holderness. What is amazing about Blue Heron School is summed up in the unofficial motto of the school which is "there is no bad weather only bad clothes."

Kids love to be outside. Children don't need encouragement to be outside, we just need to allow them to be outside even when grown-ups think the weather is dreadful. Blue Heron allows kids - during their most formative years - to be outside all the time. Just like kids love to be outside, they are also born loving animals and dirt and mud and bugs and everything else our natural environment has to offer. Blue Heron School, our educators, and our naturalists do everything they can to encourage that love for the natural environment. The school also gives children, and their families, the tools to start protecting and preserving the natural environment. There are few things more inspiring than classrooms full of very young children all dutifully composting their lunch leftovers.

At my first annual meeting as board chair, we were celebrating the new Blue Heron School building and I referred to the quote "The true meaning of life is to plant trees under whose shade you do not expect to sit." Originally, I thought of the school as the tree and the kids as the beneficiaries of its shade. What I am coming to realize however, is that it's our kids who are the trees and it's our natural environment that will benefit from the shade these kids provide.

What will it mean when we take a significant portion of the area's children and allow them to be continually outside during their most formative years? What will it mean that we have fostered their love for this area's animals, habitat and ecology? What will it mean that we have given these children the tools and the knowledge to protect our natural environment?

I think many of us only realize the value of conservation when we hit middle age and realize there are fewer wild places and fewer wild animals. In helping the children of the Lakes Region watershed appreciate just how precious and fragile this amazing ecosystem is, Laura and Blue Heron School are creating stewards who will help keep this area preserved for future generations. So while I appreciate Blue Heron's impact on my family, the most incredible part of the Blue Heron School is the impact it will have on our natural world.

Trail's End is written by Justin Van Etten, Chair of Squam Lakes Natural Science Center's Board of Trustees.
You may contact him at justin.vanetten@gmail.com.

INSECTS *continued from page 1*

What is so surprising or intriguing about our third insect, a grasshopper? Grasshoppers (*Family Acrididae*) seem to be everywhere in the summer, particularly in grassy fields, but can also be munching pests in gardens. Let's take a closer look at short-horned grasshoppers, frequent and familiar companions as opposed to the distinctly different and more elusive long-horned grasshoppers such as katydids. The "horns" in the names represent the length of their antennae; short-horned antennae are not longer than half the body. We know grasshoppers are excellent jumpers but if you follow the leap, a grasshopper can be airborne for a good distance, transported in flight with its wings. While in the air, they often make a startling snapping noise with their wings to deter predators. Another surprising grasshopper adaptation, is their transition from camouflaged, motionless creature in the grass to startling, colorful, soaring creature in the air. Their underwings are brightly colored and the instant surprise factor when these are revealed gives the grasshopper extra escape time. As soon as the insect lands, it seems to totally disappear.

Elusive or not, insects are waiting to share fascinating stories with you. Not all insects are perfect, not all are pests, but each is one in a million!



Grasshopper from Giant Insect Exhibit

INSECT QUIZ

1. T or F? The click beetle makes a clicking sound as it pops into the air, surprising predators.
2. What predator uses echolocation to catch a camouflaged insect called a walkingstick?
3. What is the function of the bright underwings of short horned grasshoppers?
4. Approximately how many insect species are there in the world?
a. 100,000 b. 500,000 c. 1,000,000
5. What insect's eggs resemble tiny seeds floating to the ground?

Answers:

1. True
2. Bat
3. Startles predators
4. C
5. Walkingstick



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

Printed on 100% Post Consumer recycled paper

This newsletter is generously underwritten by:



**LAKE
AND
ISLAND
PROPERTIES LLC**

- HONORING THE SQUAM COMMITMENT TO NATURE -



DISTINCTIVE, LUXURY, AND ISLAND PROPERTIES
OF THE LAKES REGION

WWW.LAKEANDISLANDPROPERTIES.COM
23 MAIN ST UNIT #2, MEREDITH, NH 03253 - (603) 677-7068

CHRISTOPHER P. WILLIAMS ARCHITECTS, PLLC

PO Box 703 • Meredith, NH 03253 • 603-279-6513
www.cpwarchitects.com



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