



A SNAIL'S PACE

By Margaret Gillespie

Have you ever experienced time in the natural world evaporating into thin air? One exciting place to experience this phenomenon is an ocean tide pool. I remember exploring the rocky shore with my niece and nephew when they were eight and six. What proved to be the most abundant and accessible treasures? Hands down, it was snails. Later they advanced to swifter critters like side-stepping crabs and lurking lobsters but initially snails were the jackpot. On this day, they watched snails called periwinkles retract into their shells as the tide receded, each closing the "door" with its stiff operculum. Others moved at a "snail's pace" in tiny salt-water pools left behind in rocky depressions. You don't have to visit the sea to find snails. Pond snails may dwell in nearby wetlands but land snails could be available for close scrutiny right in your backyard.

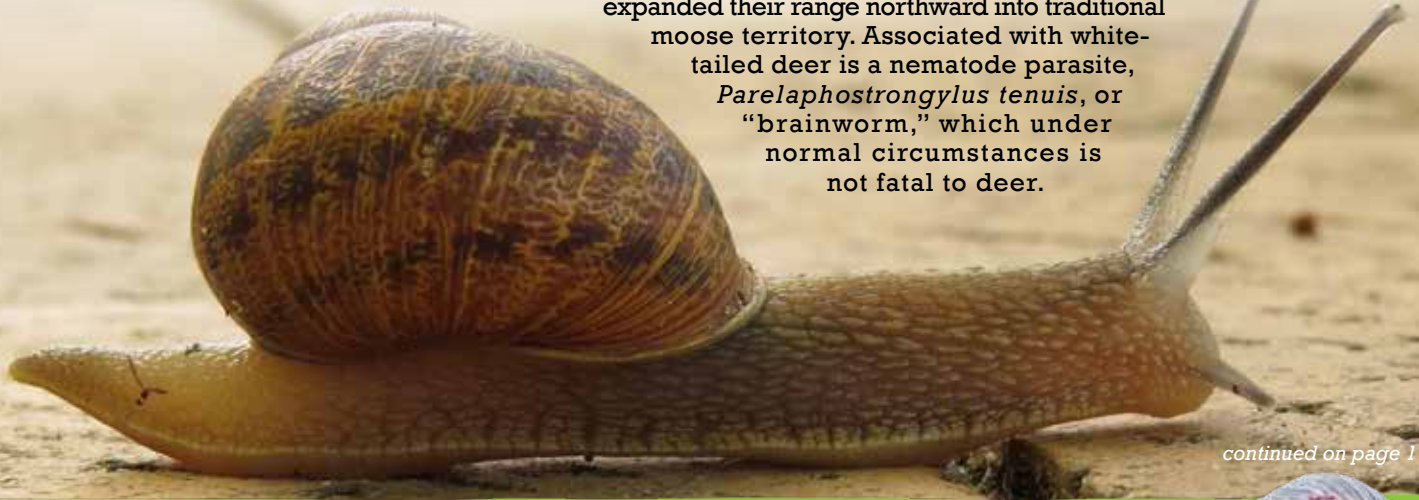
Snails are gastropods, a Greek name meaning "stomach-foot." The muscular foot, lubricated by a mucous gland, helps the snail propel itself forward, albeit at a rate measured in "feet per hour." The snail's body within the shell contains much more than a stomach. Referred to as the visceral hump, this space also holds vital organs such as the heart, lung, liver, and kidney. How does the shell grow? A mantle, located mostly inside the shell, grows new shell, which continues in the characteristic spiral shape.

Not to forget the head in this whole process, let's be officially introduced to a land snail. Two long upper tentacles are each topped by an eye, albeit eyes that detect mostly light and shadow. Below are two smaller tentacles, used mainly for smelling. All the tentacles are retractable. Beneath them is the mouth. Snails rasp their food using a radula, a tongue-like structure made of chitin and embedded with tiny teeth. A respiratory pore behind the tentacles draws in air. Wondering about a sense of hearing? It may appear that snails hear things approaching because they pull into their shells for protection. Not true as they have no way of sensing sound. In a snail's world, a shadow crossing its body stimulates a shadow reflex from cells sensitive to changes in light and the snail immediately retracts.

More snails? Most snails are hermaphrodites, meaning in reproduction they function as males and females. After they mate, both partners proceed to lay eggs. It is possible for garden snails to lay 80 eggs or more at a time. They then cover them with a soil mixture before leaving them to hatch in about two weeks of summer weather. It takes garden snails about a year to mature and they can live for several years. Predators? Toads, snakes, turtles, shrews, mice, squirrels, and birds, such as grouse and wild turkeys, are among the creatures ready to snatch snails.

On the topic of animals consuming snails, let me illuminate an intricate connection between snails, white-tailed deer, and the iconic

moose. With our warming climate, white-tailed deer have expanded their range northward into traditional moose territory. Associated with white-tailed deer is a nematode parasite, *Parelaphostrongylus tenuis*, or "brainworm," which under normal circumstances is not fatal to deer.



continued on page 11

IN THIS ISSUE...

- Page 2 The Dinosaurs Are Coming!
 - Page 3 Member Profile: Linda Hanson
 - Page 3 Bonus Member Benefits
 - Page 5 Kirkwood Gardens Plant Spotlight
 - Page 5 From the Heron's Nest
 - Page 6-7 Programs and Events
 - Page 8 Squam Lake Cruise Schedule
 - Page 11 Trail's End: Riding This Train
- And much more!

WHY IS THERE A DINOSAUR ON THE COVER?

See Forging Trails on page 2 for the answer.



FORGING TRAILS: THE DINOSAURS ARE COMING!



Did you think you would ever see or hear dinosaurs . . . in the Lakes Region? This summer you will.

We are delighted to announce there will be five dinosaurs visiting the Science Center from July 1 to September 30. They are: the *Acrocanthosaurus* - the largest terrestrial predator of North America during the Early Cretaceous; *Dilophosaurus* - a moderately sized ceratopsian with a four-fingered hand and a curious notch in its upper jaw; *Parasaurolophus* - a hadrosaurid distinguished by its hollow head crest; and *Deinonychus*, which belongs to a family of dinosaurs called dromaeosaurs. It has a killer claw on its hind foot to slash its prey and a stiff, straight tail to help balance its light bird-like body. And finally, the *Tyrannosaurus rex* - one of the largest dinosaurs that ever lived - our *Tyrannosaurus* will be a half-grown teenager.



Deinonychus

When I first shared with staff the idea of exhibiting dinosaurs, our Animal Care team was much relieved to learn that they didn't have to feed them . . . or clean up after them. Thankfully, these dinosaurs live on compressed air and electricity!


These spectacular gigantic, animatronic creatures not only look like the real thing, but move like them, sound like them - and one even spits! They will be placed along the trail in "natural" settings and are sure to thrill and surprise visitors of all ages.



Parasaurolophus

Of course, all dinosaurs died out millions of years ago, except in the movies. Accompanying interpretation will explain why and make the direct link between these huge creatures and our modern day "dinosaurs" - birds. The dinosaurs will also allow us to explore connections with evolution and climate change.

This is an exciting first for the Science Center, so spread the word and make your plans to visit.


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

BUSINESS SUPPORT

Is your business looking to support the Science Center? We have sponsorship options available for Dinosaurs Alive. Contact Development Officer Kim Beardwood Smith at kim.bsmith@nhnature.org or 603-968-7194 x 31 for more information.

**DINOSAURS
ALIVE!**

Dilophosaurus

SQUAM LAKES NATURAL SCIENCE CENTER

PO Box 173, 23 Science Center Road

Holderness, NH 03245

P: 603-968-7194 | F: 603-968-2229

info@nhnature.org | www.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 editors Janet Robertson and Amanda Gillen.

BOARD OF TRUSTEES,

Kenneth H. Evans, Jr., Chair

Lea A. Stewart, Vice Chair

Justin Van Etten, Treasurer

Mary Earick, Ph.D., Secretary

Sarah Brown

Margaret Conner

Tom Cowie

Martha Grant

Harriet R. Harris

Barbara Laverack

William F. Lee, Jr.

Carl Lehner

Anne Lovett

Susan Lynch

David F. Martin

Susan McKimens

Emily Preston

Richard L. Starbuck

Tony Wagner, Ed.D.

HONORARY TRUSTEES

George Carr

David W. Cote, D.V.M.

Bertha H. Fauver

Maurice Lafreniere

John McRae

Carol Thompson

Stephen G. Woodsum

STAFF

Kim Beardwood Smith, Development Officer

Dennis Capodestria, Facilities Assistant

Tim Curry, Facilities Director

Eric D'Aleo, Naturalist

Bob Donnelly, Facilities Assistant

Brian Eaton, Finance Director

Clare Eckert, Facilities Assistant

Audrey Eisenhauer, Education Director

Brenda Erler, Gardens and Exhibits Assistant

Dave Erler, Senior Naturalist

Jordan Fitzgerald, Blue Heron School Lead Teacher

Jordy Gianforte, Blue Heron School Lead Teacher

Amanda Gillen, Marketing Manager

Margaret Gillespie, Naturalist

Keith Hosking, Facilities Assistant

Corrie Kinder, Blue Heron School Associate Teacher

Tom Klein, Facilities Assistant

Caleb LaRocca, Animal Care Associate

Iain MacLeod, Executive Director

Laura Mammarelli, Blue Heron School Director

Lauren Moulis, Animal Care Manager

Mary Noyes, Administrative Assistant

Hannah O'Brien, Blue Heron School Associate Teacher

Dylan Parker, Blue Heron School Assistant Teacher

Jeremy Phillips, School Programs Coordinator/Naturalist

Carol Raymond, Volunteer Manager

Janet Robertson, Development and Communications Director

Liz Rowe, Human Resources Director

Kevin VanGorden, Animal Care Associate

Aubrey Voelker, Animal Care Associate

Sharon Wall, Visitor Services Manager

Sharon Warga, Operations Manager

ACCREDITED BY THE

**ASSOCIATION
OF ZOOS &
AQUARIUMS**

MEMBER PROFILE

LINDA HANSON



My mother always said that ever since I was a child and knew what a veterinarian was, that's what I wanted to be. While I was a student at the University of Pennsylvania, School of Veterinary Medicine in Philadelphia, I spent many enjoyable afternoons at the Philadelphia Zoo. Being a student, I did not have extra money to donate but knew that when I was working, I would find a place to support.

Upon graduation, I owned a clinic in Cumberland, Rhode Island and was able to support the Roger Williams Park Zoo in Providence.

Being a native of New Hampshire, I knew I would return here after retirement. Having previously visited the Squam Lakes Natural Science Center a number of times, I knew how well it was run and how well the animals were

cared for, so it was only natural that I would support the Science Center.

I continue to support the Science Center because, through the exhibits, it is following its mission statement to advance the understanding of ecology by exploring New Hampshire's natural world. The learning starts with the very young who attend the Blue Heron School where they learn about nature and the environment. Then there are the Water Matters and the energy exhibits and what I call the "rock garden" [the New Hampshire Geology Exhibit]. All are great learning experiences for young and old alike. There are also daily talks about the animals that live at the Science Center with chances to ask questions.

I like wandering through the animal exhibits and knowing that, even though they can't be released to the wild, the animals are well cared for in a natural environment. To go along with this, I like to travel to see the animals in their true natural environments. I have traveled to Africa and Antarctica and, of course, to New Mexico and Scotland on birding trips with Iain MacLeod and his small groups. These have all been very rewarding trips.

BONUS MEMBER BENEFITS

					
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. Visit the Membership section at nhnature.org for full details and website links where you may check organization hours and directions.

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.

NEWSBRIEFS

- Annual Fund contributions totaled more than \$391,000 in 2018! Thank you to all our wonderful donors!
- Naturalists Eric D'Aleo and Margaret Gillespie attended the Northern Woodlands Writers Conference in October held in Fairlee, Vermont. Through workshops, panel discussions, and presentations they learned tips and techniques from established nature writers.
- In November, veterinarian Ellyn Tighe presented training for staff and volunteers on zoonotic diseases (diseases which can be transferred from animals to humans) and how to prevent them.
- Staff members participated in anti-harassment training as part of the annual staff retreat in November. The training was facilitated by an adjunct professor from the University of New Hampshire. It was held at the U.S. Forest Service offices in Campton.
- In January, Lauren Moulis and Audrey Eisenhauer attended a three-day conference at the Denver Zoo on Animal Wellness, offered by the Association of Zoos and Aquariums. The meeting focused on tools to assess and document the care of our live animal collection.
- Planning is well underway for the "Summer Splash" on Sunday, July 21. It will feature dinner and dancing and will be held offsite due to construction at the Science Center. The Common Man's event facility, the Barn on the Pemi, is in Plymouth, next to the Italian Farmhouse Restaurant. Invitations will be mailed in June.
- Hidden Stories will open in the Mead Discovery Place, in the Webster Building Lobby. The exhibit will share the stories Naturalist Eric D'Aleo has uncovered through a new Trail Camera STEM (Science, Technology, Engineering, and Math) Project looking at how animals use the Science Center property. Special thanks to Science Center volunteers, the Davis Conservation Foundation, the Dorr Foundation, John Egolf, and Amy Reardon.

NATURALIST'S CORNER

WHY SO MANY SQUIRRELS AND SO FEW BLUE JAYS A BATTLE BETWEEN THE BLUE AND THE GRAY

By Dave Erler



Over the past eight months, you no doubt have seen an abundance of gray squirrels. I can honestly say I have never seen as many in my lifetime. Some authorities credit their population boom to the previous year's abundance of acorns. This year's much smaller acorn crop seems to have contributed to an explosion of gray squirrels in search of food, resulting in huge numbers of them getting killed on our highways this past autumn. If you have bird feeders in your yard, you have probably seen them become "squirrel feeders."

This year's extremely high number of gray squirrels got me wondering if they have had a major role in why so few Blue Jays are around this winter. I have always had a liking for Blue Jays. I'm not sure why. Maybe it's their brilliant blue plumage, or their plucky personalities, or the fact they are one of our most intelligent songbirds. This interest in Blue Jays led me to a three-year study several years ago with the help of many volunteers.

Blue Jays and gray squirrels have long been associated as being important in planting oak trees. Both are known as "scatter hoarders," or, in other words, they store mast (hard-shelled nuts) by "hiding" them in the ground. As consumers of acorns, Blue Jays and gray squirrels are in competition. If acorn abundance is high, in theory, both species should benefit and their populations should rise. If the acorn abundance declines, both populations should decline. The past eight months have shown just the opposite to be true. Gray squirrel populations exploded after two years of acorn abundance, but based on this past year's annual Christmas Bird Count conducted by Audubon Society volunteers, Blue Jay populations have declined by as much as 80% in the Lakes Region.



Could there be other connections to explain why squirrel and jay populations have gone in opposite directions? One possibility could be that gray squirrels themselves are impacting Blue Jays. We know squirrels are one of the top predators on Blue Jay nests, eating both eggs and nestlings. If the population of gray squirrels is extraordinarily high, could hungry squirrels be helping themselves to some eggs and baby jays? Remarkably, there has been little research.

Another factor to consider about the decline in Blue Jay populations is disease. Blue Jays and other Corvids like crows are known to be especially vulnerable to West Nile Virus. In the summer, West Nile Virus is carried by mosquitos, and both

adult jays and nestlings are subjected to mosquito bites.

Could it be that Blue Jays have been hit by a perfect storm? With high populations of gray squirrels competing for food and preying on nests, plus the impact of West Nile disease, Blue Jay populations faltered. At this point, it's just conjecture on my part. There may be other factors, but I am eager to see how this story unfolds over the next couple of years.



SAVE THE DATE

2019
Summer Splash
Sunday, July 21
at The Barn on the Pemi



New Day
New Location

WISH LIST

- For Tamworth Pavilion - small refrigerator*
- For Animal Care - large jet sled, natural sisal rope, electric golf cart*
- For the volunteer office - 2 or 4-drawer file cabinet*
- For Kirkwood Gardens - treasures for the sale such as tools, carts, garden art, and pots, wagons for moving plants*
- For Facilities - string lawn trimmer, loppers and pruners for invasive species removal*
- For the Intern Cottage - kitchen knife sharpener, toaster oven, fans*
- For Blue Heron School - pots and pans for the playground*

Support the Science Center while you shop at AmazonSmile.
<http://smile.amazon.com>

amazonsmile
You shop. Amazon gives.

KIRKWOOD GARDENS PLANT SPOTLIGHT

By Brenda Erler

Wild Hyacinth

Camassia scilloides

Culture: Easy to grow in moist, fertile, well-drained soil in full sun to part shade

Bloom: late April to May

Height: 1 to 3 feet depending on conditions

These native perennials can be started from seed (if you're patient) or bulbs. The bulbs once served as an important food for several different Native American tribes as well as early settlers and explorers of North America. Good for massing in wildflower meadows or borders. The foliage will become scruffy before the plant goes dormant mid-summer, so don't plant it in a prominent location.

Kirkwood locations: middle of lower garden on Route 3 side



Mountain Laurel

Kalmia latifolia 'Nipmuck'

Culture: Prefers partial shade with moist, acidic, well-drained, cool soil

Bloom: May to June

Height: 4 to 5 feet

Mountain Laurel is a lovely native shrub great for shady borders. When planted in mass, the flowers make a terrific show. This variety has intense red buds that open to light pink with dark pink corollas. It flowers best in full sun, but the foliage is better in partial shade, so look for a spot with morning sun and afternoon shade.

Kirkwood location: Lower garden next to compost bin path



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

FROM THE HERON'S NEST

By Laura Mammarelli

It is exciting to see construction underway for the new Early Childhood Education Center, Blue Heron School's future home.

The play area for the children was moved to a lawn near the picnic area. The Blue Heron School children lost no time making themselves at home in the new space. They are enjoying the different playing options available in the large open area, especially with all of the fresh, deep snow.

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.



Students enjoy the temporary play area near the picnic pavilion.



Construction as of February 14.


CALENDAR OF PROGRAMS & 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.

APRIL

<p>APRIL 1 TO 4 Daily, 8:30 a.m. to 4:30 p.m. For adults</p>	<p>Certified Interpretive Guide Training Interpreters are storytellers. They are tour guides, museum docents, zoo docents, park rangers, naturalists, and more. In this four-day course offered by Squam Lakes Natural Science Center and the National Association for Interpretation you will learn techniques to make connections with an audience, give meaningful and enjoyable presentations, and create thought provoking and relevant interpretive programs. Become a Certified Interpretive Guide through the National Association for Interpretation. Visit interpnet.com to register or contact Certified Interpretive Trainer Audrey Eisenhauer at audrey.eisenhauer@nhnature.org for details.</p>
<p>APRIL 4 THURSDAY 10:00 to 11:30 a.m. For ages 4 to 6</p>	<p>HOMESCHOOL SERIES: Using Our Five Senses - 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. An adult must participate with children at no additional cost. <i>Cost: \$9/member child; \$11/non-member child</i></p>
<p>APRIL 4 THURSDAY 10:00 to 11:30 a.m. For ages 7 to 10</p>	<p>HOMESCHOOL SERIES: Be A Scientist! - Entomology There are many different types of scientists – from Dendrologists to Ornithologists and don't forget Entomologists too. Become a scientist as you develop and test predictions, and participate in and conduct experiments. Learn how to use keys and books to identify living and nonliving ecosystem components that make New Hampshire unique. Investigate a different scientific field of study each month. An adult must participate with children at no additional cost. <i>Cost: \$9/member child; \$11/non-member child</i></p>
<p>APRIL 4 THURSDAY 7:00 p.m. For adults</p>	<p>Wild & Scenic Film Festival Squam Lakes Natural Science Center is partnering with Plymouth State University's Office of Environmental Sustainability to host the Wild & Scenic Film Festival at the Flying Monkey Movie House and Performance Center in Plymouth. This great night of independent films about adventure and activism will inspire you to enjoy and protect the natural world. <i>Tickets are available at flyingmonkeynh.com or at the door.</i> <i>Cost: \$10/person</i></p>
<p>APRIL 16 TUESDAY 6:00 to 8:00 p.m. <i>Presentation begins at 6:30 p.m.</i> For adults</p>	<p>Science Pub at Walter's Basin: Climate Change Solutions Climate change is affecting our human and natural environments. Hear from people taking action to mitigate climate change consequences at the individual and community levels. Take part in a lively discussion after the presentation to discuss solutions we can implement at home and in our communities. Visit nhnature.org for speaker details. Sponsored by Squam Lakes Natural Science Center, Squam Lakes Association, and Squam Lakes Conservation Society. <i>Cost: No charge to attend. Order and pay for individually food and drinks. Seating is lounge style. For dining with traditional seating, arrive early to eat in the dining room prior to the 6:30 p.m. presentation start time in the lounge.</i></p>
<p>APRIL 30 TUESDAY</p>	<p>Science Pub at Walter's Basin: Climate Change Solutions 6:00 to 8:00 p.m. (presentation begins at 6:30 p.m.) For adults <i>See description for April 16.</i></p>


MAY

<p>MAY 4 SATURDAY 9:30 a.m. to 5:00 p.m. For all ages</p>	<p>New Hampshire Day \$5 admission for New Hampshire residents. Live animal presentations at 11:00 a.m., 1:00 p.m., and 3:00 p.m. Sponsored by: </p>
<p>MAY 8 WEDNESDAY 10:00 to 11:30 a.m. For adults</p>	<p>Invasive Species Removal Work Day Learn to how to identify and remove invasive plant species. Begin with a brief introduction to an invasive species and then go onto the Science Center grounds to learn and practice techniques for removing that species from an area. Learn skills you can apply to removing invasive species from your own property. Refreshments provided to wrap up our work sessions. Wear long pants and sturdy shoes. Bring work gloves, water, insect repellent, and sunscreen. <i>Cost: No charge but reservations are required.</i></p>
<p>MAY 10 FRIDAY 7:00 to 10:00 a.m. For adults and children ages 14 and up</p>	<p>Spring Birding Join Squam Lakes Natural Science Center in partnership with Squam Lakes Conservation Society for these beginning bird ID programs. Under the guidance of Iain MacLeod, participants will seek out the huge variety of birds that fill our woods, meadows, and wetlands each spring. Explore a variety of habitats in the Lakes Region looking for birds as you learn identification by sight and sound. <i>Cost per program: \$12/SLNSC or SLCS member; \$15/non-member</i></p>

MAY CONTINUED

<p>MAY 11 SATURDAY 10:00 to 11:30 a.m. For adults and families with children ages 6 and up</p>	<p>Vernal Pool Exploration Spring is an exciting time to be out and about. It's the time when vernal pools are coming to life. Venture to two different vernal pools at the Science Center to learn about the animals dependent on these predator-free, ephemeral pools. Waterproof boots are highly recommended. This program requires walking off trail through uneven and rough terrain. <i>Cost: \$8/member; \$10/non-member</i></p>
<p>MAY 14 TUESDAY</p>	<p>Science Pub at Walter's Basin: Climate Change Solutions 6:00 to 8:00 p.m. (presentation begins at 6:30 p.m.) For adults <i>See description for April 16.</i></p>
<p>MAY 17 FRIDAY</p>	<p>Spring Birding 7:00 to 10:00 a.m. For adults and children ages 14 and up <i>See description for May 10.</i></p>
<p>MAY 18 SATURDAY</p>	<p>Vernal Pool Exploration 10:00 to 11:30 a.m. For adults and families with children ages 6 and up <i>See description for May 11.</i></p>
<p>MAY 23 THURSDAY</p>	<p>Invasive Species Removal Work Day 10:00 to 11:30 a.m. For adults <i>See description for May 8.</i></p>
<p>MAY 24 FRIDAY</p>	<p>Spring Birding 7:00 to 10:00 a.m. For adults and children ages 14 and up <i>See description for May 10.</i></p>
<p>MAY 31 FRIDAY</p>	<p>Spring Birding 7:00 to 10:00 a.m. For adults and children ages 14 and up <i>See description for May 10.</i></p>

JUNE

<p>JUNE 1 SATURDAY 9:00 a.m. to 12:00 p.m. For all ages</p>	<p>Kirkwood Gardens Day Gain inspiration from Kirkwood Gardens and find beautiful plants for your own. Purchase fine perennials from a prestigious New England nursery and knowledgeable local gardeners. Peruse the silent auction of desirable plants and garden items, browse craft vendors, and find treasures at the collectibles yard sale. Enjoy beverages and baked goods for sale. All proceeds benefit Kirkwood Gardens at Squam Lakes Natural Science Center, est. 1995. Kirkwood Gardens and parking are located on Route 3 in Holderness (north of Route 113). <i>Cost: free and open to the public.</i> Sponsored by: </p>
<p>JUNE 4 TUESDAY 7:00 p.m. For adults</p>	<p>Moose in New Hampshire How is New Hampshire's moose population doing? What is the deal with winter tick and moose? How is climate change affecting moose populations? Join New Hampshire Fish and Game Biologist and Moose Project Leader Kris Rines for answers to these questions and more as she shares her research on these largest members of the deer family. <i>Cost: No charge but reservations are required.</i></p>
<p>JUNE 7 FRIDAY</p>	<p>Spring Birding 7:00 to 10:00 a.m. For adults and children ages 14 and up <i>See description for May 10.</i></p>
<p>JUNE 8 SATURDAY For adults and families with children ages 12 and up</p>	<p>Annual Breeding Bird Census Session 1 - 5:30 to 8:00 a.m. Session 2 - 8:00 to 9:30 a.m. For over three decades Senior Naturalist Dave Erler has conducted a census in early June of bird species that nest on the Science Center campus. Done primarily by ear, listening for the territorial songs of male birds, indicating probable nesting. This is a great opportunity to hone your bird song identification skills. Session 1 involves canvassing two forested zones, including Mt. Fayal. Session 2, covers fields, exhibit areas, and Kirkwood Gardens. Binoculars are available or bring your own. <i>Cost: No charge but reservations are required.</i></p>
<p>JUNE 8 SATURDAY 9:00 to 11:30 a.m. For adults</p>	<p>Squam Climate Change Forum Bring your stories to share for this important conversation about taking action to mitigate climate change in the Squam Lake watershed. Hear from scientists and community leaders before engaging in discussion about moving forward together to create collective impact. Hosted by Squam Lakes Natural Science Center, Squam Lakes Association, and Squam Lakes Conservation Society. Space is limited. <i>Cost: No charge but reservations are required by calling the Squam Lakes Association at 603-968-7336.</i></p>
<p>JUNE 13 THURSDAY</p>	<p>Invasive Species Removal Work Day 10:00 to 11:30 a.m. For adults <i>See description for May 8.</i></p>

SQUAM LAKE CRUISES

New Hampshire is famous for its picturesque lakes and mountains and Squam Lake is a gem among many. See its amazingly clear water, rocky shores, celebrated islands, historic homes, scenic mountain views, and remarkable wildlife.

Purchase cruise tickets online at nhnature.org!

Bald Eagle Adventure

May 14 to June 18 - Tuesdays at 3:00 p.m.

Join a naturalist for a special Bald Eagle Adventure to view these magnificent birds in their natural habitat. The cruise focuses on the recovery of Bald Eagles as a nesting species in the state, with particular discussion about the Bald Eagles that have nested on Squam since 2003.



Discover Squam

May 18 to June 30 - Daily at 1:00 p.m.

July 1 to September 2 - Daily at 11:00 a.m., 1:00 p.m., 3:00 p.m.

September 3 to October 14

Tuesdays, Wednesdays, Thursdays at 11:00 a.m., 1:00 p.m.

Fridays through Mondays at 11:00 a.m., 1:00 p.m., 3:00 p.m.

This unforgettable guided tour has something to delight everyone. Learn about the natural history of the lake, the wildlife that makes Squam so special, and the people who have enjoyed these lakes for over 5,000 years. See the beautiful lake where *On Golden Pond* was filmed over 30 years ago. Watch for and observe Common Loons and Bald Eagles.

Loon Cruise

June 7, 14, 21 - Fridays at 3:00 p.m.

June 24 to August 30 - Mondays and Fridays at 3:00 p.m.

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

Cruise with a Naturalist

July 2 to August 29 - Tuesdays, Wednesdays, Thursdays at 3:30 p.m.

September 3 to October 10 - Tuesdays, Wednesdays, Thursdays at 3:00 p.m.

Uncover the rich natural history of Squam Lake with an experienced naturalist educator. Observe Loons and Bald Eagles and their nesting sites along with other wildlife. Learn how animals survive and adapt to their aquatic world. Gain an appreciation and deeper understanding of Squam Lake from mountain ranges, to island stories, to quiet spots, during this memorable lake experience.

Lake Explorers Family Cruise

July 23 - August 13 - Tuesdays at 10:00 a.m. | For ages 5+



Experience the excitement of Squam Lake as active explorers. This family-style cruise gives children an opportunity to use binoculars, search for Loons, collect microscopic life, watch live fish, participate in a scavenger hunt, and test their navigational abilities. Get on board for a cruise that could spark an interest to last a lifetime. *The Family Cruise is 2 hours in length.*

Squam Lake Cruise Rates:

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

Discounts available for combination trail and cruise tickets. Members receive a \$4 discount per person. Not recommended for children under age 3

Dinner and Sunset Cruise

Thursdays, July 18 and 25

Dinner at 5:00 p.m.

Cruise departs at 6:30 p.m.

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

Cost: \$55.00 per person; not recommended for children

Squam Lake Charters

Treat your visiting family or friends to a truly memorable experience in the Lakes Region. Host your own cocktail party or other unique gathering on Squam Lake. Transport wedding guests to Church Island. Any of these are possible by chartering a private cruise customized to fit your plans. Five canopied pontoon boats and experienced tour guides are ready to help with your special outing. Operations Manager Sharon Warga will personally arrange your charter for any occasion or celebration. Contact Sharon at 603-968-7194 x10 or sharon.warga@nhnature.org for reservations.



All Squam Lake Cruises depart on Route 113 across from the Science Center parking lots. Park in designated lots and walk to Lake Education Headquarters using pathway. Squam Lake Cruises are 90 minutes in length aboard canopied pontoon boats. Binoculars are available for wildlife viewing at no additional cost.

Space is limited on Squam Lake Cruises.

Make your reservation online at nhnature.org or call 603-968-7194 x 7.

GREEN TIP: PLANT A TREE

It's easy and is a powerful way for you to have a positive effect on the environment!

- Reduce energy bills to heat and cool your home. Trees provide shade from summer's sun and protection from winter's winds.
- Improve air quality. Trees absorb odors and pollutants such as ozone, ammonia, sulfur dioxide, and more. Tree can absorb nearly 10 pounds of polluted air and release 260 pounds of oxygen each year.
- Manage rainwater runoff. Leaf canopies buffer the rain while roots hold the soil together, allowing water to seep into the ground rather than run off.
- Combat global warming. Trees absorb carbon dioxide, which removes carbon from the air and stores it.
- Help wildlife. Trees provide nesting sites, food, and shelter for wildlife.
- Support your mental and physical health. Viewing trees has been shown to reduce stress and anxiety.
- Show your commitment to the environment. When you plant a tree, it can live beyond your own lifetime and symbolize your commitment to the natural world.

National Arbor Day is April 26, 2019. Visit the New Hampshire State Nursery website, <http://www.nhnursery.com/> to purchase seedlings and for tips on planting trees.



2019 GUIDED DISCOVERIES SUMMER YOUTH NATURE DAY CAMPS

View program descriptions, schedule, and register online at nhnature.org/programs/guided_discoveries.php



THE HOWLING COYOTE GIFT SHOP

Be sure to visit the Howling Coyote Gift Shop to see what's new for the 2019 season.

Eco Pals plush from Wildlife Artists features NO plastic eyes, noses, hangtags, or pellets, and is shipped in paper instead of plastic.



Members receive a 10% discount on all non-sale items. All proceeds from sales at the Howling Coyote Gift Shop benefit the mission of Squam Lakes Natural Science Center.

2019 VOLUNTEER TRAINING

Docent Training: June 17 to 21, 4:00 to 8:00 p.m.

First Guide Training: June 26 to 28, and July 1, times vary for day-long sessions

Check for details at nhnature.org/who/volunteer.php.

OPENING A WINDOW TO THE NATURAL WORLD

Have You Made A Plan?

Even if you plan to live to 150, you still need to make a plan. An estate plan, that is.

You can give the gift of wildlife to the next generation by including Squam Lakes Natural Science Center in your estate plans.

Simple ways to make a big impact:

- Gift through a will or living trust.
- Name the Science Center as a beneficiary of your IRA or other retirement plan
- Name the Science Center as a beneficiary of your life insurance policy.

Consult your attorney or financial advisor regarding your plans. Any size gift, large or small, is important and greatly appreciated.



Opening a Window to the Natural World is written by Development and Communications Director Janet Robertson. You may contact Janet at 603-968-7194 x 12 or janet.robertson@nhnature.org.

These generous donors made tribute gifts, which were received between October 1 and December 31, 2018:

*In memory of Nancy Breon
Susan Garcia
Kim Honig*

*In memory of Anne and Jim Alvord
DeHaven Family*

*In memory of Carol Foley
Joan Boland
Rachel Brown
Robert Falconi
Maureen and Gerald Gallagher
Norma and Joe Jacobs
NH Association for Middle Level Education*

*In memory of Natalie and Don Parsons
Priscilla and Wayne Fletcher
Donna and Nancy Parsons*

*In memory of Greg Smith
Ann and Rich Chalmers
James Talcott Fund of the New York Community Trust*

*In honor of Jean and Murray Swindell
Sue and Jim Penzotti*

*In honor of Lori Weast
Christopher Blood*

*In honor of Paul and Melissa Reynolds
Charles and Jacqueline Zaroulis*



Naturalist's Legacy Society

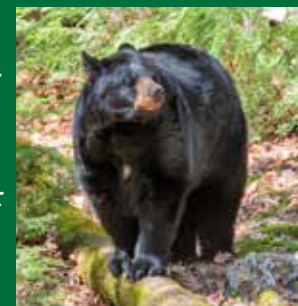
Your planned estate gift will help the Science Center continue to achieve its mission to teach about the natural world for generations to come.

Visit the Support Us section at nhnature.org.

DO SOMETHING WILD...SPONSOR A SPECIES!

The animals at Squam Lakes Natural Science Center serve as ambassadors for their species, here for the purpose of teaching about New Hampshire's natural world. The cost of caring for wildlife is considerable. You can help to provide food, health care, and housing for the animals - for your favorite feathered or furry species - through Sponsor A Species. It's a unique way to learn about a particular species and help us to care for our live animals.

See sponsorship levels and make your sponsorship online at www.nhnature.org/support/sponsor_species.php.



A Bequest from Philip S. Parsons In memory of Barbara S. "Ginger" Parsons

In February, we received a bequest from Philip S. Parsons in memory of his wife Barbara S. "Ginger" Parsons.

Phil and Ginger were longtime members and donors who lived in Center Sandwich. Phil passed away in 2018 at the age of 94. Ginger was a trustee from 1992 until her death in 2003. She was a retired science teacher and loved to volunteer and to share information with visitors about black bears. She was chair of the Education Committee from 1993 to 1998 and served on the strategic planning committee, which at the time included Ragged Island development. In retirement from his work as a textbook editor, Phil's hobby was lapidary and Ginger's was spinning exotic fibers, including bear and coyote fur collected here. Ginger noted in the spring 2002 *Tracks & Trails*, "I have served on a lot of boards and have never worked with as many people who are so enthusiastic and willing to work and give of their time as they are at the Science Center."

TRAIL'S END

RIDING THIS TRAIN



The phrase, “All aboard!” is at the same time an invitation, a question, and a directive. It reminds me an awful lot of our Board of Trustees. We invite good folks to become Trustees. We encourage them to question everything we do. And then we require them to climb on the train and direct the mission of the Science Center along the tracks to a bigger and brighter future. We speak volumes, and rightly so, about our great staff, members, volunteers and visitors, but there is a group of now twenty individuals that guides everything we do. They do it without fanfare, without compensation, without recognition, and with as much enthusiasm as anyone. As stated in *The Roles and Responsibilities of the Science Center Board*, “Governing is the Board’s primary responsibility – answering to all its stakeholders, making sure the organization is meeting its needs, and providing long range vision.” Pearl Zhu nailed it when she wrote, “A strategic Board has a view of looking ahead, an insight to look deeper, and competency to look beyond.”

At this writing, we have just completed our late January Board meeting. The agenda for this nearly three hour meeting included: 2018 financial performance, 2019 budget, 2018 investment performance, review of our five year strategic plan after two years, progress on our new Education Matters capital campaign, status of our building plans for the new Early Childhood Education facility, and annual evaluation of our Executive Director, along with several other items. This meeting was the culmination of many other Committee meetings in which our Trustees and non-Trustee volunteers do the work of the Science Center. Our Board meets with a full agenda four times a year and most Trustees serve on two or more of our six committees. I am delighted with our current Board of Trustees and humbled by their commitment to operate this train with me.

Carl Icahn said, “In life and business there are two cardinal sins, the first is to act precipitously without thought, and the second is to not act at all.” I can assure you that your Science Center Board acts thoughtfully with much dialogue on significant decisions and we act to move the mission forward. From our Strategic Plan, to our new Lake Education Headquarters, to the sale of the Holderness Inn, to our current Education Matters capital campaign, to our new exhibits for 2019 (you have to come to find out what is in store), this is hard work! And your Board is actively engaged in the process.

We are ordinary people who have come together with a common purpose. We don’t need thanks or recognition. Nicholas Sparks said, “Sometimes the most ordinary things could be made extraordinary simply by doing them with the right people.” I met in January with the right people who joined me on this train. I offer my sincere thanks to those Trustees who do extraordinary things every single day.

Trail's End is written by Ken Evans, Chair of Squam Lakes Natural Science Center's Board of Trustees.
You may contact Ken at evanmead139@gmail.com.

SNAIL'S *continued from page 1*

The larvae of the parasite are passed in the deer feces. Along come snails, which inadvertently ingest larvae while feeding on these feces. Later, as infected snails munch on leaves, browsing moose may accidentally consume them with the vegetation. Unlike white-tailed deer, moose have not developed a tolerance for the parasite. Once the larvae enter the moose’s digestive system, they migrate to the brain. There they cause symptoms such as tilting of the head and walking in circles, as well as lack of fear of humans, weakness, and loss of sight. Moose rarely recover.

Snails, in turn, are not immune to environmental challenges. In the current era of acid precipitation caused mainly by fossil fuel power plants, vehicles, and oil refineries, calcium is leached from soils. Less calcium in a snail’s diet affects shell formation and thus, the creature’s survival. The chain continues. Birds like wood thrushes, which prey upon snails, are impacted. With fewer snails, thrushes have less calcium in their diet, a detriment in the formation of strong eggshells.

As spring arrives, the emergence of snails doesn’t come with the notoriety of spring peepers or returning songbirds. Having hibernated in the soil over the snowy months, snails just resume their travels . . . at a snail’s pace. Maybe it’s a subtle message for us to slow down and take in the sights and sounds of the natural world at whatever level our perspective takes us.

SNAIL QUIZ

1. T or F? Different kinds of snails live on land, in freshwater, and in saltwater.
2. Which of the five senses do snails NOT have?
3. Snails are in a group called _____, meaning “stomach-foot.”
4. Snails can be carriers of a nematode parasite known as “brainworm,” which can be fatal to what large mammal?
5. T or F? Snails reproduce by laying eggs.

Answers:

1. True | 2. Smell | 3. Gastropods | 4. Moose | 5. True





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

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

Printed on 100% Post Consumer
recycled paper

This newsletter is generously underwritten by:



- HONORING THE SQUAM COMMITMENT TO NATURE -



MARK ASHLEY
BROKER
(603) 998-0780



BECKY FULLER
REALTOR®
(603) 491-5983

WWW.LAKEANDISLANDPROPERTIES.COM



66 RT 25 MEREDITH, NH 03253 * OFFICE (603) 569-HOME
Each Office Is Independently Owned and Operated.

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.