



MOSSES: MINIATURE SURVIVORS

By Margaret Gillespie

It might be easy to elaborate on what mosses do not have – no true roots or leaves, no vascular system, and no flowers or seeds. Exploring how well they fare with the tools they possess is an amazing trip to a miniature world where being small works and adapting to places hostile to other organisms is a road to success.

Mosses are bryophytes, a group which also includes liverworts and hornworts, “wort” meaning “plant.” Liverworts are formed of flattened sections resembling lobes of the liver while hornworts have hornlike projections which distribute spores. Mosses are tiny plants, clinging close to the substrates where they live – soil, rocks, tree trunks, and steep inclines. Their “low life” form is mandated by the lack of a vascular system to transport water, instead having miniature hair-like rhizoids which absorb small amounts of water. Reproduction is by way of spores carried to new locations by wind. Amazingly, mosses are found throughout the world, from the Arctic to deserts, to your backyard.

The best way to investigate mosses is to find moist spots – along a shady stone wall or woodland brook -- and kneel down for a close look. My dog is used to walks evolving into our own individual explorations, she with her nose, and me with my eyes. Recently we rediscovered a woodland brook frequented in the past. This day, vibrant green mosses were a magnet pulling me to examine them closely after a light rain overnight.

On the sloping woodland banks were two moss species people are most likely to spot. First was pincushion moss (*Leucobryum glaucum*), growing in small, manicured light green mounds next to trees and rocks. The green tops are formed by leaf edges rolling in to form what looks like thick, green needles packed side-by-side. Not to worry – this moss is pleasantly soft to the touch. Often you will see patches of pincushion moss close to each other. This proximity results from the major way they proliferate. When small sections break off and are displaced, they start a new life a short distance away. Mosses also reproduce sexually by spreading spores from tiny capsules atop stocks arising from the main body of the moss.

The second moss I discovered was common haircap moss (*Polytrichum commune*). It grows two to four inches tall and rises in clusters like a miniature pine forest. In spring, cube-shaped spore capsules stand up above the greenery. Although mosses are non-vascular plants, a trait which keeps mosses growing close to the ground, haircap moss has the ability to draw water to its upper leaves. Still, one finds it only in moist or shaded areas.

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Common haircap moss in the fall.



**GIANT
INSECTS**
JULY THROUGH
SEPTEMBER 2022

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And much more!

Program and event tickets available at nhnature.org.

FORGING TRAILS: WHAT WILL 2022 BRING?



We are all living through the collective upheaval of this pandemic and I assume, like me, you have that continuous inner monolog saying “it has to get better soon . . . right?” As we look towards the busy spring and summer season at the Science Center, we are cautiously optimistic that maybe the 2022 season will be more “normal.”

Over the past 24 months, we have made so many changes (large and small) to accommodate Covid. Some of those changes are obvious, but many are

invisible to our visitors. As we look towards the summer, we are thinking . . . can we go back to multiple Guided Discovery sessions? . . . If so, can we utilize indoor classroom spaces again? . . . If so, where do we arrange parent drop-off so it is convenient to the classrooms, rather than the “temporary” drop-off we used when everything was outdoors last summer? . . . If we can use indoor spaces, can we reclaim the picnic pavilion (which has served as a wonderful outdoor classroom for the last two summers) for its original intended us - visitor picnics?

Can we have two-way sections of trail again? Can we safely open the Gordon Children’s Center again? Can we present talks in the amphitheater again? Can we move the retail shop back inside (we have had to use outdoor kiosks under tents for the last two years). How many people can we put on our lake cruises? I am determined to go back to Scotland this spring to lead a trip that was originally scheduled for 2020. Everything is looking good . . . although it won’t be quite the same. Nothing is.

So many questions remain and all are interconnected. But . . . as I’ve said in the past, our staff is good at adaptation. We have to move forward with the best information we have today and have backup plans in place.

The giant animatronic insects, which were originally scheduled for 2020, ARE coming in 2022. Giant Insects will be here July through September this year. That’s a sign of our optimism for the upcoming season.

No matter what this year brings, I thank you all for your support of the Science Center over the last two crazy years and look forward to welcoming you this year.

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

BUSINESS SUPPORT

Join Meredith Village Savings Bank and Holderness School to sponsor Giant Insects. Many sponsorship opportunities are available. Contact Development Officer Kim Beardwood Smith at kim.bsmith@nhnature.org or 603-968-7194 x 131 for more information.



SQUAM LAKES NATURAL SCIENCE CENTER

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Squam Lakes Natural Science Center is a non-profit educational institution incorporated in 1966 as a charitable organization under statutes of the State of New Hampshire with its principal place of business in Holderness. 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.

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DONOR PROFILE

ROBERT "BOB" AND PEG RIDGELY

Bob's family has a long history in the Squam Lakes area. Bob's father, and then Bob himself, attended Camp Wachusett in Holderness, cementing their love of the Squam area. Bob's parents constructed a small family home on Rattlesnake Cove in 1969, and Bob's parents spent increasing amounts of time there as his father, Beverly, eased into retirement. Formerly a college French professor, Beverly had always been a serious birder (passing that passion on to son Bob), with that interest bearing fruit in 1975 with the publication of the *Birds of the Squam Lakes Region*. Originally, not much more than a pamphlet, Beverly expanded it in 1988 to a much more substantial book.

Bob's first post-military paid employment was a joint position in the summer of 1974 between the Science Center and NH Audubon. Bob studied the loon population on Squam Lake and obtained the first serious information about how loons were faring on the lake. The Loon Preservation Committee formed the following year, but by then Bob's growing interest in the birds of South and Central America became too great to resist and so commenced his career in the Ornithology Department at the Academy of Natural Sciences of Philadelphia.

But Bob's love of Squam remained strong, and visits to Squam and to see his parents remained frequent, by now with his wife Peg. Meanwhile Beverly followed Bob's career as closely as he could, and Bob even had the pleasure, multiple times, to show his father some of "his" birds in the tropics.

Bob's career was by now taking off, with many publications ensuing. In 1997 Bob and his team had the extraordinary good fortune to discover a new and very rare species of antpitta in the Andes of southern Ecuador. The bird was named the Jocotoco Antpitta (*Grallaria ridgelyi*), and is one of the most distinctive birds discovered in the past 50 years. This discovery pushed Bob to focus more on conservation work in Latin America, especially in Ecuador, and soon after he founded the Jocotoco Foundation to protect that country's rarest

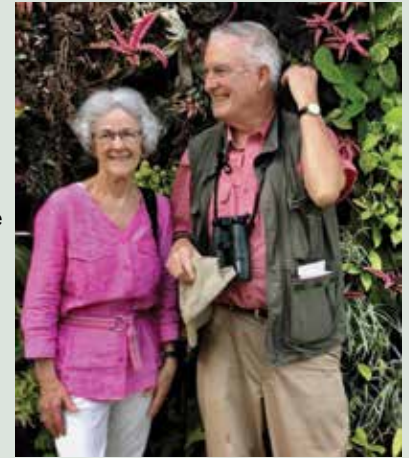
birds. He also helped to create Rainforest Trust, with a remit that encompassed all of the tropics. By then with the digital revolution, Peg and Bob realized their dream of returning to the Squam region, moving to Sandwich in 1999, where they have been since.

Beverly Ridgely died in 2017. Bob was anxious to keep his spirit alive and memorialize him by updating Beverly's *Birds of the Squam Lakes*

Region. Doing so would provide an opportunity to take advantage of improvements in digital photography and publishing, and Bob would write an "update" of how the status of various birds in the area has changed in the 40 intervening years. (There've been more changes than you'd think!) It became the perfect pandemic project. Bob couldn't travel to South America so he remained in Sandwich to research and write the book.

The new *Birds of the Squam Lakes Region* is published by the Science Center and will be available at the Howling Coyote Gift Shop this summer. The original text from the first version remains, with updates written by Bob; local birder Ken Klapper provided much technical help and also wrote the accounts for the 34 species newly recorded since 1988. Many beautiful color images have been included.

For Bob the full circle return back to the birds of Squam was serendipitous. He says, "It's great. You can see birds anywhere, that's one of the joys of birds. There are surprises all the time and even if there aren't, there's always something for you to look at. And then for you to take care of."



Bob and Peg in Singapore.

NEWSBRIEFS

- We welcomed two new Animal Care Associates this winter: Genlyne Fisk-White and Holly Williams. Genlyne Fiske-White has a Bachelor of Science in Wildlife Biology from Unity College and has worked for several seasons as a field ornithologist in various locations throughout the United States. Holly Williams has a doctorate in veterinary medicine from Tufts Cummings School of Veterinary Medicine and has previously worked as an associate veterinarian at a mixed animal practice. Holly's desire to switch her focus towards zoology and conservation led her to an internship at ZooTampa which she completed in November of 2021.
- Kyle Salmons is now Naturalist/Guided Discoveries Instructor a change from his previous position as Assistant Naturalist.
- Janet Robertson retired as Development and Communications Director at the end of December 2021 after 31 years with the Science Center. Many of our members,

donors, and other supporters formed lasting relationships with Janet over the years. Amanda Gillen, formerly Marketing Manager, has moved into the Director role and is looking forward to working with everyone.

- Mark your calendars: Giant Insects are coming July through September! Like Dinosaurs Alive in 2019, Giant Insects will feature 5 giant animatronic insects along the live animal exhibit trail. Business sponsorships are available for this special opportunity. Contact Kim Beardwood-Smith for details (kim.bsmyth@nhnature.org or 603-968-7194 x131).
- When you renew or purchase a membership this year you will receive a new membership card. Learn more on page 10.
- Your Science Center membership goes even further this season with reciprocal benefits at additional organizations in our area. See page 10 for details. This is in addition to reciprocal benefits you receive at other AZA and ANCA organizations.

NATURALIST'S CORNER

NEARER TO NATURE

By Kyle Salmons

As the memories of winter melt away like snow covering backyards, we look forward to spending time outside without layers of gear protecting us from the elements. It also means we are closer to planning summer getaways and vacations. Those look different for everyone, especially with how the past two summers have been. There remains, however, one constant: being outdoors and experiencing nature is important. As the summer Guided Discoveries Instructor at the Science Center, I see this firsthand every day. I am reminded of being outside as a child when I am with kids at camp, and they help me to view the natural world as new and exciting. It makes me thankful for the time I spent outdoors as a child.

As adults, we have all been given the vague instruction at some point to 'go outside and play'. We learned, through trial and error, what that actually means. I learned, for instance, that 'go outside and play' does not mean 'climb to the top of a tree, get scared, and cry for help'. There are many ways to allow a child to experience the outdoors in a safe way, without getting scared in a tree. Outdoor play has waned over the years, and I hear about how children today don't experience the world for themselves. This thought is based on a recent study published in *Environment and Behavior*¹, which looked at how our children are spending their time compared with previous generations. They found

that less time is spent outdoors and more time is spent with electronics. Our societies and technologies are evolving at a faster pace than the natural world, and it is natural for humans to adapt to the changing world. We do, however, need to be aware of the positive impact being outside and experiencing uninterrupted nature is for our children. Forming a relationship with the natural world has a plethora of beneficial effects for children and adults such as refined motor skills, generally improved cognitive function, and better sleep. The effects of being outdoors are especially powerful for children because they immerse themselves in nature differently than adults. They experience and view nature more viscerally and immediately than an adult. This relationship with nature can more easily form core memories that stay with a child throughout adulthood.

It might make future sense to get children acclimated to spreadsheets or computers before they start first grade, but we need to remember to take the time to get them, and ourselves, outside to embrace the benefits of experiencing the natural world firsthand.

¹ Larson, Lincoln R., et al. "Outdoor Time, Screen Time, and Connection to Nature: Troubling Trends Among Rural Youth?" *Environment and Behavior*, vol. 51, no. 8, Oct. 2019, pp. 966-991, doi:10.1177/0013916518806686.



What will your legacy be?

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



**HOWLING COYOTE
GIFT SHOP**

*Returning to indoor
shopping this season.
Opens May 1.*

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: milk crates, 10 x 10-foot tarp

For Facilities: chain saw vise, loppers and pruners for invasive species removal

For Kirkwood Gardens: garden wagons or carts, 1-quart, 2-quart, and gallon pots

For Offices: small folding or card table, push wheelchair

KIRKWOOD GARDENS PLANT SPOTLIGHT

By Brenda Erler

Green and Gold

Chrysogonum virginiana 'Superstar'

Culture: Prefers moist, rich, well-drained soil in part shade to full shade. Will tolerate sun if kept consistently moist.

Bloom: May to June

Height: 4 to 6 inches

This North American native forms an excellent ground cover with deep green leaves and profuse bright yellow flowers in spring, with a light rebloom in the fall. It spreads by rhizomes but is easily controlled. Green and Gold is lovely in a woodland garden, native plant garden, or in shaded border fronts. Attracts bees and butterflies.

Kirkwood location: under a crabapple on the Route 3 side of the lower garden.



flickr/peganum CC BY-SA 2.0

Columbine

Aquilegia vulgaris 'Clementine White'

Culture: Easily grown in average, medium moist, well-drained soil in full sun to part shade. Tolerates most soils except heavy, poorly drained ones.

Bloom: April to May

Height: 12 to 18 inches

This lovely variety of columbine has large white, spurless, double flowers that are attractive to many pollinators and loved by hummingbirds. The plants will seed themselves but may not seed "true to form" if allowed to cross-pollinate with neighboring columbine varieties. To prevent this, simply remove the spent flower stems.

Kirkwood location: under a crabapple on the Route 3 side of the lower garden.



Wikimedia/Jamain CC BY-SA 3.0



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



FROM THE HERON'S NEST

By Laura Mammarelli

Among the many wonderful activities in winter, finding and following animal tracks in the snow is a favorite at Blue Heron. With the naturalists, the children look for tracks in a field, on a frozen pond, or in the woods. Back in the classroom children look at track guidebooks, listen to picture books about animals and tracks, and make their own guides to animal tracks.



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.

MARCH See the calendar at nhnature.org/programs/calendar.php for March programs.



APRIL

<p>APRIL 7 AND 14 THURSDAY For ages 4 to 6 and 7 to 10</p>	<p>Homeschool Series Our homeschool series includes one-hour, in-person programs held outdoors, followed by a 30-minute virtual wrap-up the following week featuring a live animal.</p> <p style="padding-left: 20px;">In-person Outdoor Program: April 7 - 10:00 to 11:00 a.m. Virtual Wrap-up with Live Animal: April 14 - 10:00 to 10:30 a.m.</p> <p><i>Cost \$9/member child; \$11/non-member child</i> <i>An adult must participate with children at no additional cost. Each additional adult pays child fee.</i></p> <p>All About Series (Ages 4 to 6): April 7 and 14: Turtles Join us with your child to learn all about New Hampshire wildlife. Each month considers a different group of living things through activities, hands-on experiences, and a meeting with a live animal.</p> <p>Get HAPI! (Ages 7 to 10): April 7 and 14: Ecosystems Join us to increase your understanding of these four concepts of community ecology: Habitats, Adaptations, Populations, and Interrelationships (HAPI). Through activities and investigations, we will explore these topics in-depth.</p>
<p>APRIL 19 TUESDAY 6:30 to 7:30 p.m. For adults</p>	<p>Virtual Science Pub: New Hampshire Butterflies and Climate Change <i>Speaker: Heidi Holman, NH Fish and Game</i></p> <p>Learning about rare species that live in unique habitats gives us the opportunity to understand the potential impacts climate change may have on wildlife in our state. Heidi will introduce the White Mountain Fritillary, a butterfly that lives in the alpine zone of the Presidential Range and relate its story to the other hundred plus butterfly species present in New Hampshire.</p> <p><i>Cost: No charge to attend. Advance registration required.</i> <i>Zoom link is available at nhnature.org/programs/calendar.php</i></p>
<p>APRIL 21 THURSDAY 7:00 to 8:00 p.m. For ages 8 and up</p>	<p>Woodcock Watch – Dance of the Timberdoodle Every spring the American Woodcock performs a wonderful courtship display over the fields and woodland edges of New Hampshire. They start at dusk with their rasping calls (known as peenting), then head for the skies on whistling wings. Then comes the downward zig zag aerial flight accompanied by the strangest combination of whistles and chirps – think of someone spinning the dial on an old transistor radio... that's what it sounds like. Join Executive Director Iain Macleod for an evening of woodcock watching and learn about this fascinating little bird.</p> <p><i>Cost: \$9/person members; \$11/person non-members</i></p>

MAY

<p>MAY 1 SUNDAY 9:30 a.m. to 5:00 p.m. (last admission at 3:30 p.m.) For all ages</p>	<p>Trails Open! Join us for opening day of the 2022 trail season. The live animal exhibit trail and all hiking trails will be open to the public. See even more of the new Raptor Exhibit and updates to the Hidden Stories trail camera project. Check out the Know Before You Go section at nhnature.org for current updates. Advance purchase tickets recommended and available at nhnature.org.</p> <p><i>Cost: \$22/adult; \$20/seniors (65+); \$16/youth (ages 3-15); free/children 2 and under; free/members</i></p>
<p>MAY 7 SATURDAY 9:30 a.m. to 5:00 p.m. (last admission at 3:30 p.m.) For all ages</p>	<p>New Hampshire Day New Hampshire residents receive \$5 trail admission. Enjoy Up Close to Animals presentations at the Amphitheater at 11:00 a.m., 1:00 p.m., and 3:00 p.m. Advance tickets required and available at nhnature.org. Limited spaces available.</p> <p><i>Sponsored by:</i></p> <div style="text-align: center;">  </div>
<p>MAY 17 TUESDAY 6:30 to 7:30 p.m. For adults</p>	<p>Virtual Science Pub: The Gulf of Maine: Changing Climate and Changing Fisheries <i>Speaker: Graham Sherwood, Gulf of Maine Research Institute</i></p> <p><i>Cost: No charge to attend but advance registration is required. Zoom link is available at nhnature.org/programs/calendar.php</i></p>

JUNE

<p>BEGINNING JUNE 1 WEDNESDAY</p>	<p>Kirkwood Gardens Plant Sale Plants will be available until sold out. The Kirkwood Gardens Plant Sale will continue again this year after selling out for the last two years. Perennials will be available for sale on the Bluestone Terrace in the garden beginning in early June. Come stroll through Kirkwood Gardens for inspiration and find beautiful new plants for your own garden. <i>Sponsored by:</i> </p>
<p>JUNE 4 SATURDAY 5:30 to 9:30 a.m. For adults and teens</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 we have conducted a census in early June of bird species that nest on the Science Center campus. Done primarily by ear, we listen for the territorial songs of male birds, which indicates probable nesting. This is a great opportunity to hone your bird song identification skills. The early session (5:30 a.m.) involves canvassing two forested zones, including Mt. Fayal. The later session (8:00 a.m.) covers fields, exhibit areas, and Kirkwood Gardens. Binoculars are available or bring your own. <i>Cost: No charge to attend. Advance registration is required.</i></p>
<p>JUNE 7 TUESDAY 6:30 to 7:30 p.m. For adults</p>	<p>Lecture Series: Frogs of New Hampshire by Melissa Doperalski, Nongame and Endangered Wildlife Program Biologist, NH Fish and Game Join us to learn more about the frogs that inhabit the Granite State and the threats their populations face. Find out about becoming a frog survey volunteer and helping to track the status of some of our threatened frog species. This is an in-person program held in our outdoor classroom. <i>Cost: No charge to attend. Advance registration is required.</i></p>
<p>JUNE 24 THROUGH SEPTEMBER 5 For all ages</p>	<p>StoryWalk™ StoryWalk™ surrounds the Holderness Town Gazebo behind the Holderness Post Office at Curry Place. Stroll along the channel as you read a story about the natural world posted one page at a time on the trail. Presented in partnership with Holderness Library and Holderness Recreation Department. Open daily from June 24-September 5. <i>Cost: No charge and no reservations required.</i> <i>Sponsored by:</i> </p>

Save the Date: 2022 Summer Splash, Saturday, July 23
Join us for this family-friendly event featuring Giant Insects, entertainment, music, food trucks, and more. Details coming soon.

**Save the Date: 2022 Annual Meeting for Members
Saturday, August 13**



GIGANT INSECTS COMING JULY THROUGH SEPTEMBER 2022

Generously sponsored by:




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

May 21 to 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, Saturdays, and Sundays 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. Five canopied pontoon boats and experienced tour guides are ready to help with your special outing. Contact Paul Brochu at 603-968-7194 x110 or paul.brochu@nhnature.org for reservations.

\$250 per hour per boat

FROM THE ARCHIVES

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



An early conceptual drawing of a White-tailed Deer Exhibit from the 1960s.



Gilbert "Gib" Merrill, the Science Center's first Executive Director, holding a lizard in the 1960s. Merrill served as Executive Director from 1967-1975.

VOLUNTEER TRAINING DOCENTS AND FIRST GUIDES

The Science Center is very fortunate to have a talented and dedicated team of volunteers. Annually, we offer training sessions for new volunteers and established volunteers who would like to expand their skills. In 2022, the following volunteer training sessions are available:

- **Docent Training (18 years and older): 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.**
- **Docent Mentor Training (18 years and older): June 16 from 11 a.m. to 12 p.m. Prerequisite: currently a Docent**
- **First Guides Training (14 to 17 years old): June 25 from 9:30 a.m. to 3:30 p.m., June 28 from 9:30 a.m. to 2:30 p.m., June 29 and June 30 from 9:30 a.m. to 1:30 p.m.**
- **Greeter: individually scheduled**
- **School Group Greeter Training ongoing from April through June, individually scheduled**
- **Exhibit Window Washers (ground level, only): individually scheduled**

In addition, we have volunteer opportunities for gardening, cordwood preparation, occasional mailings, invasive species removal, and other tasks. For more information, please visit the Volunteer Page on our website at www.nhnature.org/who/volunteer.php, or contact Volunteer Manager Carol Raymond at carol.raymond@nhnature.org, 603-968-7194 x 122.



First Guide Emma Fullam shows raptor props to visitors.

GREEN TIP: SUSTAINABLE TOURISM

As the weather warms and we feel more comfortable planning for future travel, how can we make sure we are traveling sustainably and being responsible tourists?

Sustainable tourism takes into account the economic, social, and environmental impacts while ensuring quality tourism experiences and addressing the needs of host communities.

Here are some things to consider when you travel:

- Where are you going? Generally, the shorter the distance you are traveling the lower the carbon footprint. Exploring your local area and supporting your local communities is a great option. If you are traveling a distance, can you go by bus or train rather than plane?
- Avoid traveling to overcrowded destinations but if you are going somewhere very popular go during the off-season. You may also consider traveling to a destination that needs your support, maybe somewhere more off the beaten path.
- Continue to be sustainable while you travel. If you carry a reusable water bottle at home, bring it with you on vacation. If you are traveling somewhere with questionable water quality, bring water purification tablets. If you avoid single use plastic and paper at home, bring a reusable tote or towel when you travel.
- Find ways to give back. Can your trip be part of a service trip or volunteer group? There are resources available to help plan and execute these trips.
- Treat your destination like you would your own community. Respect natural places and cultures, read the signs, follow the rules, and make destinations want to invite you back.

Learn more from the UN World Tourism Association at unwto.org.

SCHOOL PROGRAMS - MAKE LEARNING COME ALIVE FOR ALL AGES!

Give your students the opportunity to connect to the natural world. Programs are available for preschool through high school.

- **Virtually Wild Programs**
- **In-person Outdoor Programs at the Science Center or at your school**

Learn more at nhnature.org/teachers



SUMMER GUIDED DISCOVERIES DAY CAMPS

Week-long outdoor natural adventure day camps for children ages 4 to 14.

Space is limited.

Register online at nhnature.org





OPENING A WINDOW TO THE NATURAL WORLD

Science Center Access for All

Squam Lakes Natural Science Center believes that nature benefits everyone and is committed to welcoming visitors from all backgrounds and experiences. The Science Center has programs available to make visiting more financially accessible to all. These programs are supported by donors and include:

- **Museums for All:** Visitors receiving food assistance (SNAP benefits) receive \$3 trail admission for up to four people. Show your SNAP/EBT benefit card when you arrive at Admissions.
- **Family Access Membership:** A \$25 Family Access Membership is for New Hampshire families receiving food assistance. It includes unlimited free admission to trails and exhibits for one named adult and up to five others (children 2 and under are free) from May 1 through November 1. New Hampshire residents may purchase a Family Access Membership by applying in-person at Admissions from May 1 through November 1. An eligible adult must provide their name, address, email, phone number, and show a current EBT card and ID. Family Access Memberships are not available online.
- **Library Membership Pass:** Check with your local library to see if they are members. Library Membership passes are valid for up to four \$10 trail admissions.

The Museums for All and Family Access Programs are generously sponsored by: Dead River Company, MLK & Company, and NH Electric Coop Foundation

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

					
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 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.

MEMBERSHIP CARDS HAVE A NEW LOOK

The Science Center is furthering sustainability efforts to reduce waste. Instead of printing new cards each year, we are using sturdier cards designed to last for many years. As you renew your membership in years to come, instead of new cards, you will receive stickers to place on your existing cards with new expiration dates.

Remember to bring your membership cards with you when you travel. Members receive discounted admission at participating zoos, aquariums, and nature centers through reciprocal admission programs with the Association of Zoos and Aquariums (AZA) and the Association of Nature Center Administrators (ANCA). Additionally Science Center members receive special benefits at various attractions throughout the season.

Please keep your cards in a safe place. Should you lose your cards, replacement cards can be issued at any time for \$5 each by contacting the membership office.

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

*In Memory of Anne and James Alvord
DeHaven Family*

*In Honor of Kim Beardwood-Smith
Lois Beardwood*

*In Memory of J. Wilcox Brown
Tom and Kris Brown*

*In Memory of Thomas Cowie
Ken and Jenny Evans*

*In Honor of Josh Flagg
Anonymous*

*In Honor of Sonja Guzman
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*In Honor of Allison Harrison
Deborah H. Harrison*

*In Memory of Parker T. Hart and Jane Hart
Mary Deal*

*In Honor of Deborah Kennedy-Coster
Matthew Fullerton*

*In Memory of Mildred S. Kopperl
Jane Kopperl*

*In Memory of Richard Melvin
Susan Ellis*

*Jeremy and Barbara Sawyer
Priscilla Chapter 51 Order of the
Eastern Star*

*In Memory of Natalie and Donald Parsons
Priscilla and Wayne Fletcher*

Nancy and Donna Parsons

*In Honor of Lee Petty
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*In Honor of Doris and Bill Phippen
Pamela Magrath*

*In Memory of Barbara Ridgely
Virginia Ridgely Howe*

*In Honor of Janet Robertson
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*Emily Preston
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Gail Smith and Frances Chalmers*

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*In Honor of Carol Thompson
Eric and Jane Philipp*

*In Memory of John G. Waters
Nancy Waters*

*In Memory of Larry Webster
Betsy and Bruce Whitmore*

*In Honor of Betsy and Bruce Whitmore
Joan and John Fauvre
Whitney and Kelli Rugg*

*In Memory of Beverly "Bebe" Wood
Christine Bird*

TRAIL'S END

SOLAR PROJECT AND STRATEGIC GOALS



The Science Center has a number of strategic goals, including better incorporating climate change into our exhibits and educational programs, evaluating options for investing our capital reserves in environmentally responsible green funds, and ensuring that at least 50% of our energy consumption comes from renewable sources by 2030.

Our solar project will help us achieve all three of these goals.

As you may see during your next visit, phase one of our solar project has been completed on the roof of the Blue Heron School which now has solar panels to generate approximately 23kW of electricity.

Beginning this spring and finishing this fall, we will be installing additional solar panels in between our two main parking lots.

Most of you are familiar with our GARN wood fired boilers, in large part because of the educational exhibit we have incorporated into our trail. Our GARNs not only allow us to reduce our dependency on fossil fuels but also help us educate our visitors on the benefits of sustainably harvested, locally sourced wood heat.

Our solar project will create additional educational opportunities to teach about sustainable, renewable energy that can help reduce our impact on climate change. In total, the 140kW solar array will eliminate 250,000 pounds of CO2 emissions annually and will save the Science Center over \$25,000 per year in electricity costs.

As our board evaluated environmentally responsible investment options it quickly became apparent that the best opportunity was quite literally in our front yard. So, in addition to the incredibly generous financial support we have so far received from our donors, we will also be investing a portion of our capital reserves into this project. We feel it truly is the most environmentally responsible investment decision we can make.

As you can tell, we are incredibly excited about this new addition to our campus and our educational offerings. That said, we still aren't quite finished with fundraising so if you have an interest in supporting our solar project please reach out to Amanda Gillen, Development and Communications Director at Amanda.gillen@nhnature.org or 603-968-7194 x134.

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.

MOSSES *continued from page 1*

Might you be looking for a "hero" of the moss world? Sphagnum moss could be the one, providing a unique habitat for other life forms. These amazing plants form a thick layer, spreading out onto the surfaces of swamps and bogs. The intertwined mat of moss makes it possible to walk on its surface, albeit in a careful, undulating way. Fascinating carnivorous plants like sundews and pitcher plants make their living amidst the moss, capturing unsuspecting insects and other small creatures, which find themselves trapped by sticky or slippery surfaces. Known for its antiseptic qualities, sphagnum moss was used as an absorbent wound dressing during World War II. In present times, bogs can be threatened by large scale collecting of peat (decomposed moss) for horticulture so even moss heroes can use a helping hand.

Once you turn your attention to mosses, you will see how amazing, abundant, and diverse they are, when you take a close look. The stonewalls you walk or drive along, the shady tree you park your car under, the woodland or mountain trail you hike, or the stream you follow showcase a multitude of these plants. Mosses can be surprising companions if we take time to meet and greet them.

MOSS QUIZ

1. T or F? Pin Cushion moss is painful to touch.
2. Instead of seeds, mosses have _____.
3. Mosses are:
A. Liverworts B. Lichens C. Bryophytes
4. What major kind of moss thrives in bogs?
5. T or F? Mosses reproduce by spores and by segments that break away.

Answers:

1. False
2. Spores
3. C
4. Sphagnum moss
5. T



Pincushion moss



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