



LICHENS: A LASTING BOND

By Margaret Gillespie

What would it be like to feel welcomed by lichen? Sound strange? When I have the good fortune to visit the rocky shores along the seacoast, my eyes scan the boulders and ledges for brightly colored orange lichens. Aptly named Maritime Sunburst Lichen, they hug the rocks well above the spray zone. Such encounters bring me back to magical times spent on Appledore Island off the coast of New Hampshire, immersed in tide pools and the rocky shore. Even from my mainland home, I'm comforted by the fact lichens are on their best behavior, especially on a rainy day walk. They display themselves as bright green ornaments on otherwise drab tree bark, decorate granite boulders in circular patterns, and peep through the grass like tiny British soldiers in red uniforms.

Lichens model a kind of cooperative lifestyle that is as intriguing as it is inspiring. Beatrix Potter (1886-1943), who is best known for her children's books featuring characters such as Peter Rabbit, also had an intense interest in fungi, and subsequently, lichens. At a time in the 1800s when women were not expected to be scientists, she was examining lichens under her microscope, recording them in detailed drawings, and germinating fungal spores from lichen. The exact relationship between the fungal and algal components remained a mystery. Swiss researcher, Simon Schwendener (1829-1919) proposed that the fungal component was parasitic on its algal companion, a much contested concept in his day. Eventually scientists recognized that both parties received benefits from their partnership.

How do lichen components become a team? The fungal partner of lichen forms the visible structure while the photosynthesizing portion is comprised of a green alga and/or cyanobacteria. Lichens visibly perk up after a rainstorm by turning green, a result of the food producing portion showing its true colors through a semi-transparent fungal coat. A common lichen joke relates to how these organisms are formed when a fungus and an alga took a "likin" to each other. In fact, it is rare for either of the partners to exist on its own.

If you are embarking on some lichen looking, here are several common forms you might see in this area. The first one, crustose, is common enough to be easily overlooked as part of the landscape. As its name suggests, crustose lichens form a crust-like structure on rock. Stone walls and field boulders often host these lichens. Secondly, foliose lichens appear to be constructed of tiny leaves forming a mat-like structure on trunks of trees or rocks. These are the greenish lichens which brighten drizzly days, dressing trees as if for a parade. Maritime Sunburst Lichen is another example of foliose lichen. Lastly, fruticose lichens consist of tufts with multiple tiny branches, an example being Old Man's Beard lichen, often hanging from pine branches. I would welcome anyone promoting a new common name for Old Man's Beard. These lichens



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Naturally Wild Halloween Saturday, October 31

Creatures of the Night Pop Up Animal Encounters, pumpkin treats for the exhibit animals, sweet treats for you to take home! Wear your costume.



Details on page 6.



FORGING TRAILS: THANKFUL FOR EMERGENCY RELIEF



As you can imagine, this year is proving to be challenging on many fronts for the Science Center. With in-person programming grinding to a halt in March and our trail season delayed by six weeks and then greatly impacted by capacity restrictions, we were looking at huge operation deficits in our \$2 million 2020 budget. We have been carefully monitoring cash flow to ensure that we can keep paying bills while planning week-to-week as the pandemic has taken hold of our lives and culture. Our wonderful donors have fast-tracked their annual giving, and in many cases, increased those gifts to help keep

the lights on (and the animals fed). I am hugely grateful for their support and generosity. It is reassuring to know that we are not in this alone.

Thankfully, federal aid has been forthcoming. We successfully applied for a first round of Payroll Protection Program forgivable loans, which allowed us to keep our staff intact. The initial rules gave us eight weeks of payroll coverage but with rule changes extending the coverage, we were able to stretch it out to 13 weeks. Once the trail opened on June 15, we at least began to see some “regular” revenue coming in.

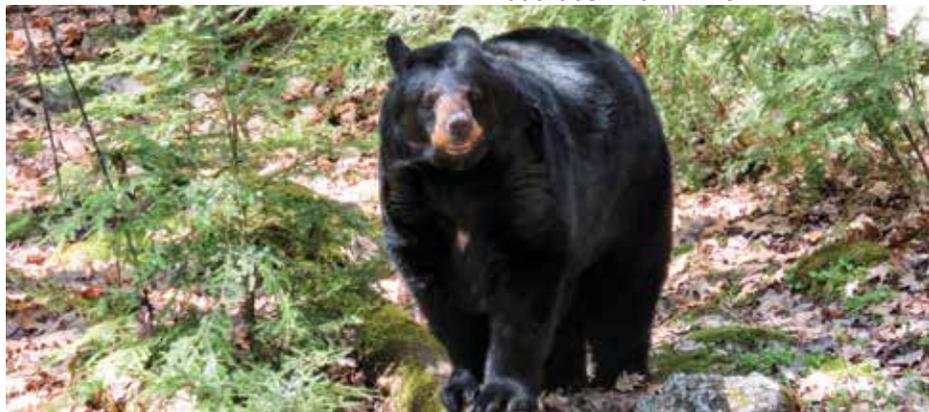
Thanks to our congressional delegation, a new New Hampshire Nonprofit Emergency Relief Fund was created that provided \$60 million for New Hampshire non-profits—much like the “Main Street Relief” program for for-profit businesses. We submitted our application and eagerly awaited news, not knowing what portion of the fund might come our way. We were also encouraged to apply for support through the Child Care Recovery and Stabilization Program (CCRSP) for our Blue Heron School.

In July, we received word that we were awarded \$19,000 in the first round of CCRSP funding. Then in mid-August, we were hugely relieved to learn we had received 75% of what we were able to apply for from the Nonprofit Emergency Fund. So far, the combined support from these federal programs is over \$700,000. On August 13, I was delighted to be able to thank Senator Jeanne Shaheen in person for all her efforts to secure these much-needed funds for New Hampshire businesses when she visited for a tour.

Although, these federal funds are hugely helpful and important, we are not out of the woods yet and we will still see a deficit . . . but thankfully not as deep a hole as we once feared.

Stay well, stay safe . . . and we’ll all see each other on the other side of this!

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Squam Lakes Natural Science Center is a non-profit educational institution incorporated in 1966 as a charitable organization under statutes of the State of New Hampshire with its principal place of business in Holderness. Its mission is to advance understanding of ecology by exploring New Hampshire’s natural world.

Tracks & Trails is a regular publication of Squam Lakes Natural Science Center distributed to members and contributors. Comments are welcomed by newsletter editors Janet Robertson and Amanda Gillen.

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VOLUNTEER PROFILE

MICHELLE JANOSA



When my family was relocating from Florida to New Hampshire, I knew there was little I was going to miss about Florida aside from the incredible smell of an orange grove in blossom, watching armadillos and alligators wander through the neighborhood, and being a docent at the zoo. Thankfully, fate brought me to the Science Center to continue my docent journey.

If you follow the news, it's easy to get discouraged about the future of the planet. You hear about deforestation, pollution, removal of environmental protections, climate change, animals nearing extinction, and you might think there is no hope of stopping the damage. But serving as a docent at the Science Center gives me hope. Every time I tell a child that it's their job to protect the environment and they emphatically agree, it gives me hope. Every time someone has an "AHA" moment when I've said something to make them look at human interactions with nature from an animal's perspective, it gives me hope. Every time I go on

an outreach and help the naturalists share information with people who otherwise may not be able to visit the Science Center, it gives me hope. Working on the trail camera project and raising awareness of the story of local wildlife gives me hope that the public will allow New Hampshire animals to thrive. Life didn't take me down the path of being a Jane Goodall and making a profound impact on nature, but being a docent allows me to do one small thing to try to protect the natural world. Imagine how awesome the Earth would be if everyone did just one small thing!

Being a docent is also an opportunity for me to give back to the animals who live at the Science Center. There's not much I'd rather do than take one of the raptors out for a walk in the off-season when there are no guests and allow them to enjoy sunshine. Every Saturday, I gleefully notify my husband that I'm off to see my "boyfriend" (no offense to the birds who may be female). His reply is always to not spend all day at the Science Center because he knows I would walk every one of those cool creatures if I could.

I consider myself fortunate to be a docent working with the wonderful, dedicated staff and surrounded by the beauty of nature. My wish is for everyone to find joy in doing something (environmentally friendly?!) they love in a place they love...like me at the Science Center.

Michelle lives in Ashland with her husband Chris, son Joshua, and mastiff puppy Luca. She looks forward to being able to visit her son Nicholas in Arizona and her family in western New York. She has a BA in Biology from SUNY Geneseo, an M.S. in Environmental Studies from University of Rochester School of Medicine, and a NYS teacher certification in Living Environment. She is employed by Bayer Pharmaceuticals in the Clinical Development Operations group.

NEWSBRIEFS

- After closing in March, Blue Heron School moved to online learning. Blue Heron School will reopen in September, with students split into four classrooms, to keep group size at 10 or fewer children with one teacher. Daily health screenings and many other precautions are in place. Two classes will return to the former classrooms in the lower level of the Trailhead Gallery and two will be in the new Early Childhood Education Center. Children will spend as much time outdoors as possible. After a year off, we welcome back Blue Heron School Assistant Teacher Dylan Parker.
- Welcome to new Animal Care Associate Alyssa Mika, who is a new graduate of Niagara County Community College with a degree in Zoo Animal Management. She interned at both the Aquarium of the Niagara and the Buffalo Zoo. Alyssa hails from Blasdell, NY where her interests include outdoor activities such as hiking.
- Beverly Heyduk, Finance Assistant since 2007, retired in June. We welcome former Human Resources Director Liz Rowe back into the position, a role she held when she first started with the Science Center 16 years ago.
- With school field trips cancelled statewide, education staff created Virtually Wild School Programs as a substitute via Zoom. They will also be offered for the 2020-21 school year. Many other virtual learning materials were created for students and families; see <https://www.nhnature.org/resources>.
- The summer *Tracks & Trails* newsletter was digital only, to save printing and mailing expenses. If you missed it, find it on the website, <https://www.nhnature.org/membership/newsletter.php>. The 2019 Annual Report is also in digital form only on the website, <https://www.nhnature.org/support>. Its Finance Report contains unaudited figures and will be updated once the annual audit is completed, later this fall.
- The live animal exhibit trail opened on June 15 with new guidelines designed to keep everyone safe, including limiting the number of people on the trail each day by asking visitors - members and non-members alike - to reserve tickets online for a specific time. Everyone must wear a mask and ensure physical distancing. There is a greeter station where required health-screening questions are posed to guests. The indoor gift shop is closed but an outdoor kiosk is set up every day, weather permitting, including a new line of crafts by local artisans.

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NATURALIST'S CORNER

FINDING APPRECIATION IN THE GARDEN

By Audrey Eisenhauer



I admit, I was not pleased to find giant, squishy, green hornworm caterpillars feasting on my tomato plants this summer. While I appreciated their size and their beauty, I didn't welcome the destruction they caused, and I was quick to remove them to save my tomatoes. I was later surprised while scrolling through Facebook to come across a video that changed my mind.

My colleague Sam Jaffe, founder and Executive Director of The Caterpillar Lab in Keene, and lover of all caterpillars, had made a video about these native pollinators, promoting their beneficial role and fascinating life history. His video made the case that hornworms are worth appreciating, and it inspired me to learn more about these creatures.

Tobacco hornworms, *Manduca sexta*, are the species commonly found on tomatoes and other Solanaceae family members (eggplant, potatoes, peppers, tobacco) in New Hampshire. Tomato hornworms, *Manduca quinquemaculata*, are rare in the state and are not the caterpillars we usually see munching away on tomato plants. The tobacco hornworm, over three inches long in its final stage, has diagonal white stripes along its body, edged with black on the upper side, and a curving reddish "horn" on the top of the rear end. The adult is the Carolina sphinx, a large moth with a nearly five-inch wingspan. It hovers over flowers like a hummingbird, using its incredibly long tongue to extract nectar. Its tongue is twice as long as its body! Carolina sphinx are an important native pollinator and visit a variety of trumpet-like flowers to feed on nectar. The adult also pollinates Solanaceae family flowers, helping to produce the seeds of the plants its larvae feed on, which means it also helps to produce your tomatoes!

If the size of the caterpillar and the beauty and importance of the moth as a pollinator doesn't have you admiring hornworms, maybe you will find the parasitoids that rely on the hornworm as a reason to appreciate this species. Leave it to nature to find an elegant way to keep a population in check. Braconid wasps lay their eggs inside the hornworm caterpillar using their

needlelike ovipositor. When the larvae hatch, they feed on the caterpillar from the inside. When they are ready to pupate, they emerge and spin little silk cocoons around themselves, attached to the back of the caterpillar (see photo below). After a week, the adult wasps emerge from the cocoons and fly off to find a new caterpillar host. The caterpillar does not survive this process. But, wait, there's more! Chalcidoid wasps are hyperparasitoids that lay their eggs in the braconid wasp larvae while they are in their cocoon. As Sam Jaffe says in his video, the larvae of the hyperparasitoid grow in the parasitoid larvae that grew in the caterpillar! You have to admit that is pretty cool.

Next summer, when you find a giant, squishy tobacco hornworm munching away on your tomatoes, I hope you will pause to appreciate this fascinating creature and the variety of life it supports in the natural world. If your appreciation for homegrown tomatoes wins out over the hornworm and the Carolina sphinx, consider finding alternate hosts for the caterpillars. Some people plant extra tomato plants in a corner of their yard for relocating the caterpillars. Hornworms also feed on wild members of the Solanaceae family, which may grow near your garden, such as climbing nightshade, datura or moonflower, and common bittersweet nightshade. Moving the caterpillars to those plants is another option. If you find a hornworm that is host to braconid wasp larvae, leave it in your garden to encourage nature's own population control program. At the least, next time you bite into one of your garden tomatoes, think about the hornworm and the Carolina sphinx and the role they play in our natural world.

See [@TheCaterpillarLab](#) to learn more about our native caterpillars. Watch their wonderful collection of videos including a video of the hornworm hyperparasitoids in action.



NEWSBRIEFS *continued from page 3*

- Up Close to Animals presentations in the amphitheater were cancelled, but educators and volunteers meet guests with live animals at Pop Up Animal Encounters along the trail.
- Two donated electric vehicle chargers were installed in June, thanks to grant funding through the New Hampshire Electric Co-op. Guests with electric vehicles are now able to top off their batteries while visiting. The chargers are located near the Welcome Center.
- In July, Citizens Bank announced the Science Center as its Champions in Action awardee for Environmental Stewardship in 2020. The award includes \$35,000 in unrestricted funds, volunteer support from the bank and *New Hampshire Union Leader*, public relations and promotional support from Citizens Bank, and coverage and advertising support from the *New Hampshire Union Leader*.

KIRKWOOD GARDENS PLANT SPOTLIGHT

By Brenda Erler

Tropical Milkweed

Asclepias curassavica 'Silky Gold'

Culture: This annual is easily grown from seed in light, rich, moist, well-drained soil in full sun. Plant seed directly in the garden after last frost, or start indoors 8 to 10 weeks before last frost for earlier flowering. Ripened seedpods may be collected and stored in a paper bag for the following season.

Bloom: Clusters of golden yellow flowers bloom from July to frost

Height: 3 to 4 feet tall and 1 foot wide

This is one of the best annuals for attracting butterflies (especially Monarchs), bees, and hummingbirds to your garden. Use in beds, borders, cottage, and butterfly gardens. Good cut flowers. It will not reseed in the garden, but it is easy to both save and start seeds annually.

Kirkwood location: Intermingled among perennials and other annuals around "Nancy's Girl" statue in lower garden and at base of stone wall at driveway entrance.



Japanese Stewartia

Stewartia pseudocamellia

Culture: Best grown in moist, humusy, well-drained sandy loam in full sun to part shade. Does not tolerate drought or heavy, clay soil. Slow to establish.

Bloom: July

Height: 20 to 30 feet tall and 20 to 30 foot spread

This is a wonderful, medium-sized landscape tree with four-season interest. Showy white flowers appear in July. The exfoliating bark makes patterns of gray, cinnamon, and olive. Fall colors range from yellow to red to dark reddish-purple.

Kirkwood location: center of lower garden on Route 3 side.



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



FROM THE HERON'S NEST

By Laura Mammarelli



Fourteen Blue Heron School children returned for two weeks for a mini summer camp in August. They enjoyed one another's company, played in the pine grove, explored in the woods, painted watercolors, and drew in their journals. Children and teachers practiced the new safety protocols and began to get accustomed to what it will be like to come to school in a pandemic. Wearing masks, physical distancing, and activities under tents outdoors are all practices we are incorporating into our days. Having lots of fun playing and exploring outside in nature is something that will never change at Blue Heron School.

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

CALENDAR OF PROGRAMS & EVENTS

Raptor Migration Celebration

Saturday, September 12

For all ages

9:30 a.m. to 4:00 p.m.; last admission at 2:30 p.m.

Fall is a season of transition and many animals are on the move to wintering grounds. Join us to see migratory raptors at Pop Up Animal Encounters along the trail 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.

Included with trail admission; timed tickets and advance reservations required.

Timed entry tickets must be reserved or purchased in advance at nhnature.org. Tickets are available two weeks before events.

New Hampshire Day

Sunday, September 20

9:30 a.m. to 4:00 p.m.; last admission at 2:30 p.m.

For all ages

For a special low fee, thanks to our sponsors, **New Hampshire residents** may tour the live animal exhibit trail and enjoy Pop Up Animal Encounters along the trail throughout the day.

\$5 admission for New Hampshire residents. Timed tickets and advance reservations required.

Sponsored by Dead River Company and New Hampshire Electric Co-op Foundation

Naturally Wild Halloween

Saturday, October 31

For all ages

9:30 a.m. to 4:00 p.m.; last admission at 2:30 p.m.

Join us on Halloween for Creatures of the Night Pop Up Animal Encounters along the trail throughout the day. See the coyote, river otters, bears, and all the animals along the trail enjoy a variety of pumpkin treats. Come in your favorite costume and take some sweet Halloween treats home with you.

Included with trail admission; timed tickets and advance reservations required.



Observe, Discover, and Explore: Virtual Homeschool Series

1st and 2nd Thursdays from November through April

November 5, 12, December 3, 10, January 7, 14, February 4, 11, March 4, 11, April 1, 8

10:00 to 10:45 a.m.

For children ages 4 to 10

Observe, discover, and explore phenomena in the natural world as a scientist does, through this monthly virtual series for homeschool students. The first Thursday of each month, a seasonal topic is introduced and students are given an outdoor investigation to complete at home. The investigations use materials readily available at home and are suitable for different age groups. On the second Thursday of each month, students share their observations and discoveries, and meet a live animal related to the topic. Students may complete monthly journal pages and explore additional resources on the homeschool series webpage. Each program will be recorded and available to view for a limited time after each program. An adult must participate with each child or children at no extra cost. The virtual sessions will be held via Zoom, with links provided upon registration.

Advance registration and payment required.

Cost: \$9/member child; \$11/non-member child per month; or \$18/member family; \$22/non-member family per month



Naturalist Josh Flagg shows the Turkey Vulture at a Pop Up Animal Encounter on the trail.

SQUAM LAKE CRUISES



Enjoy the changing colors of autumn on a relaxing cruise on beautiful Squam Lake. Reserve your tickets for a Discover Squam tour or consider a private charter with your family group on a personalized cruise.

Discover Squam

Daily at 11:00 a.m. and 1:00 p.m. through October 12

This unforgettable guided tour has something new to delight you on every trip. Learn about the natural history of Squam Lake, look for majestic Bald Eagles, and listen for the haunting call of Common Loons. Hear about the people who have lived on its rocky shores surrounded by scenic mountains for over 5,000 years. Cruise on this beautiful lake where *On Golden Pond* was filmed almost 40 years ago.



Cruise With a Naturalist

Fridays at 3:00 p.m., September 4 to October 9

Learn about the rich natural history of Squam Lake with an experienced naturalist. See Common Loons and Bald Eagles and view their nesting sites. Watch for other wildlife too - you never know what you might see amid Squam's scenic mountain ranges, charming islands, and quiet spots. The route is chosen to maximize wildlife observations; see something different on every memorable trip.

Cost: Adult \$27; Senior (65+) \$25; Youth (0-15) \$23; Members receive a \$4 per person discount.

Squam Lake Charters

Host your own unique gathering on Squam Lake. Charter a private cruise customized to fit your occasion. Our canopied pontoon boats and experienced tour guides are ready to help you with your special outing. Contact Operations Manager Paul Brochu at 603-968-7194 x 110 or paul.brochu@nhnature.org for reservations.

\$225 per hour per boat



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 gift online at www.nhnature.org/support/sponsor_species.php.



SUMMER SPLASH UN-GALA



“Thank you for your support!”

Rather than cancel a special summer event, the annual Summer Splash Un-Gala fundraiser was held as a Zoom webinar on July 25. To participate, donors purchased special dinners for the animals such as “Fruit and Vegetable Medley for the Black Bears,” “Blueberry and Lemon Tart for the Red Fox,” “Seared Filet Mignon for the Mountain Lions,” or other fun choices, representing a sampling of food for the almost 100 live animal ambassadors at the Science Center. Proceeds from the Un-Gala will help to support the care and feeding of the Science Center’s live animals, environmental education, and general operations. Guests enjoyed an hour learning about New Hampshire’s wildlife.

The Science Center is grateful for support from these Underwriters, Sponsors, and Donors: Sarah and Win Brown, The Common Man, Cormack Construction Management, Barbara Nan Grossman, Irwin Automotive Group, Lovett-Woodsum Foundation, Meredith Village Savings Bank, Tashia and John Morgridge, and Squam Boat Livery.

And a special thanks to our great team of volunteers: Nancy Barrett, Nancy Beck, Lisa Bennett, Cathy Crane, Cathy Denious, Andy Eaton, Liz Hager, Joan Martin, Lea A. Stewart, Kathy Weymouth, and Marcia Zahr.

VIRTUALLY WILD SCHOOL PROGRAMS

School is back in session and whether your students are in the classroom or learning remotely Science Center Naturalists can bring live animal programs to your classroom virtually.

Programs will:

- Connect to students via Zoom*
- Correlate to the Next Generation Science Standards
- Engage students for 45 minutes
- Feature two live animals
- Include interactivity between students and naturalist
- Include a post-visit activity that students can do at home

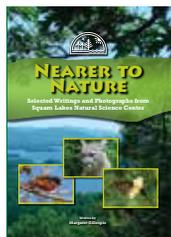
**This is a private program for your students using a unique, nonpublic link, utilizing all recommended Zoom security and privacy features. If your school is not able to use Zoom for security reasons we can make special accommodations for Google Meet.*

Cost:

\$150 per program (Limit one classroom per program to facilitate interactivity.)

\$25 discount per program when scheduling two or more programs for the same school.

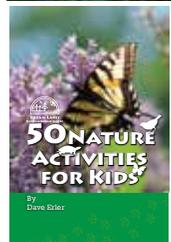
Visit nhnature.org/teachers to make your request and to learn more about the variety of school programs we offer.



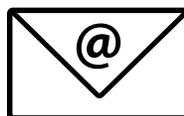
HOWLING COYOTE GIFT SHOP

The Science Center’s two published books, *Nearer to Nature* and *50 Nature Activities for Kids* are available for purchase online and in the Howling Coyote Gift Shop.

Purchase online at nhnature.org/programs/nearertonature.php and nhnature.org/programs/50natureactivities.php or visit the Howling Coyote Gift Shop.



Do we have your correct email address?



Thanks to the CARES Act grant, this issue is back to its usual print format, plus the digital version posted on our website. We hope to continue printing paper copies of *Tracks & Trails* in the future, but will revert to digital only if need be. If you missed the summer issue, which was digital only, you may find it on the website at nhnature.org/membership/newsletter.php. If we have to switch back to digital only, we will send the newsletter via email to members and donors, if we have current email addresses.

If you would like to receive emails, please send your updated email address to Development Officer Kim Beardwood-Smith at kim.bssmith@nhnature.org or visit <https://bit.ly/2QrpRBI>.

GREEN TIP: REDUCE, REUSE, AND RECYCLE TO PREVENT FOOD WASTE

Nearly a third of all food produced worldwide is thrown away - equivalent to about 1.3 billion tons every year. The average American generates over 220 pounds of food waste annually. This fritters money away, but also means that the food rots in landfills, where it produces methane, which contributes to climate change. Furthermore, the water used for agriculture to grow the food is also wasted.

Here are some tips to help you reduce food waste in your home.

Reduce: Shop smart by planning menus and using a list. Buy only what you intend to use. Plan for smaller portions if you routinely have too much left over. Make a point of using the food you purchase before buying more. Organize your refrigerator; store leftovers in clear reusable containers.

Reuse: Don't throw leftovers away. Save by carrying a homemade lunch of tasty leftovers. If you can't eat everything you prepared before it spoils, freeze small portions for future lunches. Designate a day to use accumulated leftovers for dinner or when you don't have time or energy to cook. Learn to preserve food by pickling, drying, canning, fermenting, or curing. Turn too many ripe apples into applesauce. Cut out spots in fruit and use the rest to make smoothies, along with the stems of greens like kale. Use citrus peels or wilted herbs to liven up your water or spritzers.

Recycle: Freeze vegetable scraps like tops, stalks, peels, and wilted greens (high in fiber, vitamins, and minerals). When you have enough, sauté and then simmer into broth. Combine excess herbs with olive oil and chopped garlic, then freeze in ice cube trays for an easy boost to gravy or other dishes. Simmer chicken skin and carcasses with veggies and herbs for homemade stock. Use coffee grounds as fertilizer. Compost the food scraps you can't use otherwise to make soil for your garden or houseplants.

What tips do you have to reduce food waste in your home?



2020 ANNUAL MEETING FOR MEMBERS SATURDAY, AUGUST 8, 8:30 TO 9:30 A.M.

For the first time in its history, the Science Center held its Annual Meeting virtually, via a Zoom webinar.

Board Chair Justin Van Etten welcomed attendees and called the meeting to order. The theme of the day was gratitude. Justin observed that people are finding reassurance in the natural world, which New Hampshire and the Science Center can provide. The Science Center's mission of education helps people connect with nature and its wonders. Justin expressed gratitude for the dedicated staff and volunteers, the generosity of our donors, and more. He concluded by acknowledging today's difficult circumstances, but expressed confidence that we will make it to the other side.

The 2019 Annual Meeting minutes were approved. Treasurer Anne R. Lovett presented the 2019 Finance Report. Due to the COVID circumstances, the 2019 audit was delayed; it will be posted later this fall on the Science Center website. The 2019 Annual Report is also on the website.

Justin Van Etten thanked three outgoing Trustees:

- Harriet Harris who gave support through her volunteerism and expertise;
- Bill Lee who was instrumental in the Nature Matters Capital Campaign and a wonderful champion of our Naturalist's Legacy Society;
- Lea A. Stewart who served both as Secretary and then as Vice Chair, plus is a volunteer and docent who helped with many successful Summer Splash galas.

Governance Chair Sarah Brown asked for approval to present and elect one slate of candidates in three parts. First, she asked for a vote on the re-election of Carl Lehner to serve a three-year term. She introduced three new Trustees: Lisa Aulet; Lisa Bennett; and Geoff Stewart, each for a three-year term. The final vote was for Officers for one-year terms: Justin Van Etten, Chair; Sarah Brown, Vice Chair; Anne R. Lovett, Treasurer; and Tom Cowie, Secretary. All three slates were approved unanimously.

Executive Director Iain Macleod presented the Horizon Award to Lea A. Stewart.

Iain then recognized eight staff for their combined 120 years of service:

- Bob Donnelly - Facilities Assistant - 5 years
- Jordy Gianforte - Blue Heron School Lead Teacher - 5 years
- Kevin VanGorden - Lead Animal Care Associate - 5 years
- Jordan Fitzgerald - Blue Heron School Lead Teacher - 10 years
- Laura Mammarelli - Blue Heron School Director - 10 years
- Clare Eckert - Facilities Assistant - 15 years
- Janet Robertson - Development and Communications Director - 30 years
- Brenda Erler - Gardens and Exhibits Assistant - 40 years

Find the recording of the meeting at [YouTube.com/nhnature](https://www.youtube.com/nhnature).



OPENING A WINDOW TO THE NATURAL WORLD

Double Your Donation!



We are grateful for the generosity of all our supporters. Individual donations are a major part of the Science Center's annual fundraising revenue. And you may be able to double your donation through a corporate matching gift. Many companies match donations their employees make to nonprofit organizations, which means your gift can help twice as much!

Check with your employer to see if they have a matching gift program and for the guidelines. Each company's application process differs, but it is usually easy to submit a matching gift form and double your donation.

We welcome and appreciate donations in any amount to help us to continue vital operations.

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 112 or janet.robertson@nhnature.org.

These generous donors made tribute gifts, which were received between April 1 and June 30, 2020:

In honor of Patricia Barker's 89th Birthday
Crystal, Rich, Erica Sky, Pippin, Speedy, Marigold and Tommy Schaaf

In memory of Anna Eaton
Brian and Lydia Eaton

In memory of Jakob M. Lange
Mary R. Deal

In memory of Kevin "Bud" McCarthy
Elissa Nystedt

In honor of Mary Osmer
Anonymous

In memory of William Phippen
Joseph Rountree and Susan Hight Rountree

In honor of Carol Thompson
Carol and Ian Raymond
Jessica and Mark Somol

In memory of Elizabeth Wood
Ellen Barth

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WISH LIST

**Garden producing more than you can put up or eat?
Donate your extra to animal care.**

For Visitor Services – cordless stick vacuum, dehumidifier

For Offices - fans, table or floor

For Animal Care - newspapers, Little Tykes or Playskool jungle gym, PVC pipe, heavy-duty storage tubs, limb cutters, gift cards to local hardware stores

For Facilities - chain saw vice, loppers and pruners for invasive species removal

For Blue Heron School – pocket digital camera, bird feeders, milk crates, baking pans, cookie sheets, cooling racks, microwave

For Kirkwood Gardens - garden wagons or carts, garden items for treasures sale such as decorative pots, garden art, tools

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. Perhaps it was finding a bird's nest in the backyard or playing in a leaf pile in the fall with a cherished friend. Perhaps it involved a fort in an old gnarled maple, a walk through a milkweed patch filled with Monarch Butterflies, or a visit to a local nature center.

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



TRAIL'S END

A DEBT TO NATURE



I think I understand a little better now what it felt like in Whoville when the Grinch failed to steal Christmas.

When I wrote my last newsletter article in early May, it was hard to imagine what the summer was going to look like for the Science Center. Heck, I think most of us were more than a little worried that the Grinch we call COVID was going to steal our summer.

Despite the masks and the social distancing and all the other craziness, summer in New Hampshire has been about as good as any of us could have hoped for. At the Science Center, we've been able to welcome visitors to our trails and educate them about our wonderful natural world, we had cruises on our boats, held our first Zoom Annual Meeting, and even hosted an Un-Gala to support our animals.

But this is about more than the Science Center having a good summer. Across New Hampshire, being out in nature has been an ideal place to be during this challenging time. If you spent any time outside, if you went swimming in a lake, or walking in the woods, if you watched a loon chick with its parents, or saw lightening bugs in your backyard, if you went kayaking or canoeing or camping, if you hiked a 4,000-footer or explored a waterfall, if you saw a bald eagle or a blue heron – if you got to do any of these things then you are remarkably fortunate. The little bits of normalcy nature has given us are an amazing and wonderful gift.

To paraphrase the Grinch, COVID hadn't stopped summer from coming.

Somehow or other [summer] came just the same.... It came without ribbons. It came without tags. It came without packages, boxes, or bags.... Maybe [nature], we thought, doesn't come from a store. Maybe [nature]... perhaps... means a little bit more!

And like the Grinch whose heart grew three sizes that day, we all need to remember the gift New Hampshire's natural world gave us in the years to come.

Remember how blessed you were this summer and do everything you can to help support this remarkable natural world that gave so much to so many. Help maintain those trails you enjoyed hiking on. Help protect the habitat of the wildlife that is so much fun to watch. Help preserve the water quality of the amazing lakes and streams that make a New Hampshire summer so special. Help ensure that New Hampshire's natural world is there for future generations.

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.

LICHEN *continued from page 1*

are delightful and often used by hummingbirds to camouflage their nests. Woven into the nest, they blend with similar lichens on surrounding tree branches.

How do lichens reproduce? It can be as simple as parts breaking off by wind or water and being carried to other locations where they continue growing. They also reproduce sexually, which can be explained best by looking closely at lichen like the British soldier lichen growing on rotting stumps or in infertile fields. The red caps, reminiscent of British red uniforms in the American Revolutionary War, hold spores. When released, these spores have the difficult job of landing in a suitable place where an algal cell of the correct species happens to be. Only then can the two organisms start a new life together.

Beyond being an amazing association of two organisms, lichens have lessons to teach us about how to better care for our planet. Have you ever noticed that lichens essentially do not exist in cities? These organisms have no filters for the air they absorb in the photosynthesis process. They simply cannot live in air with high levels of automobile exhaust. The clean air that lichens require is good for humans too! Check out some of the lichens living near you. These organisms cover approximately seven percent of the Earth's land surface, so the possibilities for lichen looking are available to lift your spirits and give you a healthy reason to smile.



Photo by Eric D'Aleo

LICHEN QUIZ

1. T or F? Lichens are capable of making their own food through photosynthesis.
2. Components of lichens are a _____, an _____, and/or a cyanobacteria.
3. T or F? Healthy lichens are indicators of good air quality.
4. Why do lichens appear greener during and after rain?
5. What children's author also was fascinated by lichens?

Answers:

1. True | 2. Fungus and alga | 3. True | 4. The green of the alga shows through the outer fungal layer | 5. Beatrix Potter



Photo by Eric D'Aleo



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