



WHITETAIL WAYS

By Margaret Gillespie

I recently spent an engaging wild weekend with my young niece. By wild I mean we experienced nocturnal activities of the wildlife kind. At the tranquil pond down through the woods from my house we talked to Barred Owls. We must have settled at the boundary between two territories because after our owl call renditions, owls from forest depths on either side of the pond responded with energetic hoots. We listened in rapt silence as the owls broadcast ownership of their space. Shortly the owls quieted, secure that the “intruders” were ousted. On returning to the house, I panned the headlights of my car over the lush hayfield. I wasn’t looking for owls now and we weren’t disappointed. At the far corner of the field, two small pairs of white lights shone back at us. Many nocturnal animals have a reflective tapetum in the rear of their eyes, which redirects images back through the retina, sharpening nighttime vision. Reflected light created the “eye shine,” pinpointing for us the location of two deer. If we observe deer through the seasons, they surprise us by looking and acting differently. Let’s explore the highlights of white-tailed deer, *Odocoileus virginianus*, in autumn.

covering off on branches and shrubs, leaving behind the smooth, light-colored bone. These tree scrapes have a more serious purpose, advertising a buck’s presence, strength, and availability to mate. Now bucks are ready for the rut – a season so busy with searching for receptive does that there is little time to eat. Mating season in New England runs from November through early December. By February, most bucks have shed their antlers and look similar to does.

A more subtle seasonal change than antlers is the transformation of a deer’s coat. The summer coat is a reddish brown while the winter coat is grayish brown. More significantly, hairs of winter coats are hollow and filled with air, providing enough insulation for deer to rest comfortably tucked into snow. Adults are not the only ones to transform their coat color. Fall fawns lose their blanket of white spots as winter fur grows in.



With changing seasons, deer alter their diet as well as their digestive assistants, the gut microorganisms. Spring is a time for fresh green grass, clover, and young leaves. By fall, acorns and beech nuts are staples. Moving into winter, deer become browsers, consuming buds and young branches of trees and shrubs. Their metabolism decreases in winter, helping deer survive on less food. Surprisingly, close to half their daily calories come from stored fat. They often congregate in “deer yards” – sheltered areas where hemlocks or pines catch snow in their branches. Deer make trails in the relatively shallow snow and venture out



We automatically associate antlers with deer, at least for males or bucks. These antlers are some of the fastest growing mammal bones on the planet, in ideal conditions adding about a quarter inch per day. Antlers begin growing in early spring as velvety buds and then develop a forward curve adorned with tines on mature, healthy deer. Once the deer is fully grown, the health of the animal, rather than age, determines the size of the rack. Velvet covers the antlers, feeding the bone with a rich blood supply, but by fall, the velvet’s job is complete. Males rub this furry

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HALLOWEEN HOOT ‘N HOWL SATURDAY, OCTOBER 14

6:00 to 8:00 p.m. | Rain or Shine

See page 7 for details.



FORGING TRAILS: A TALE OF TWO DUCKS - WOODIES AND HOODIES



One of my favorite displays at the Water Matters Pavilion is the Critter Cam exhibit. Four screens show live camera feeds from around the country. The development of rugged, compact, high definition cameras that can be strategically placed in remote locations allow us to see never-before-seen details at nests and dens and not only provide veritable soap opera viewing opportunities, but are also revealing previously undocumented behaviors and interactions. Across the country, huge numbers of people devote themselves to

watching these cameras and following the intimate life histories of Ospreys, Bald Eagles, Owls, Puffins, bears, whales, and more.

We have our own camera feeds here too. One is placed above the nest of a Phoebe on a light fixture in the back of the Welcome Center. This year the Phoebe pair successfully raised two broods of five chicks each, all under the 24-hour gaze of the camera and watched by the thousands of visitors to Water Matters. Another camera is placed overlooking the lower pond, where it is trained on a nesting box for Wood Ducks (or Hooded Mergansers).

This spring I was delighted to discover a pair of Wood Ducks had indeed taken up residence. The camera recorded their every coming and going through their incubation period of more than a month. Not long after recording started, we witnessed a fascinating encounter. A pair of Hooded Mergansers arrived on the pond on April 27 and decided they too wanted to claim the box. Mrs. Hoodie flew into the box (while Mrs. Woodie was in there sitting on her eggs) and based on the shaking of the box, there was a battle royal inside. After about twenty seconds, the Merganser exited. She returned twelve more times over the next few hours trying to enter the box again, but Mrs. Woodie was ready for her and “head-butted” her out each time.

Over the next 30-plus days, Mrs. Woodie sat tight, only leaving the box for a few minutes early in the morning (often before dawn) and again each evening. Finally on May 28, at 12:50 p.m. the big moment came and the freshly hatched chicks began to jump from the box. One, two, then three, and four leapt from the box, bouncing on the pond’s surface and swimming to join mom, who was calling nearby. Then came number five. This guy was different, a little darker with a larger head and when he hit the water he ran across the surface to the cover of the pond edge. This was a Hooded Merganser baby. So that few moments of tussling in the box between the two female ducks had resulted in Mrs. Hoodie depositing an egg under Mrs. Woodie, which she then incubated as if it were her own. Another six Woodie chicks emerged for a total family of eleven.

Although it’s been long known that Hooded Mergansers and Wood Ducks will “egg dump” in each other’s nests, it was really cool to witness and document it on our camera. We’ll see more of these soap operas with a new project using trail cameras positioned all over the grounds. Naturalist Eric D’Aleo has been leading this project over the past year. We are finding all kinds of natural dramas playing out around us. We look forward to sharing more about this project as it unfolds.

To see videos of the Hooded Merganser on Wood Duck encounter and the emergence of the chicks, visit YouTube.com/NHnature.

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

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.

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VOLUNTEER PROFILE

THE BOURRET FAMILY: CHARLIE, DAWN, AND CAITLYN



How did you first become involved with the Science Center?
 We first got involved in the fall of 2008, shortly after moving here from Rhode Island. We visited one day as a family. We've always had a love for nature and animals, so when we learned about the volunteer program it seemed like a natural fit for us. Dawn and Charlie initially started volunteering, Caitlyn followed on once she was old enough.

they are not out in the wild, but many of them cannot be released from captivity for a variety of reasons. People should know how well the animals are cared for by knowledgeable and compassionate staff. There are also many enrichment programs for the animals to encourage and stimulate their natural behaviors through sight, smell, taste, touch, and interaction.

What would you tell someone who is thinking about donating or volunteering?

Please do it! It is definitely a worthwhile organization for donating to and an incredible place to meet people with a love of the natural world.

What do you think will change here in the future?

We have been and continue to be excited about all the additions to the facilities that have been occurring over the last few years and can't wait to see what's next!

What do you do as a volunteer?

Dawn and Charlie started out working with animal care staff. Last year Dawn got trained as a Docent and Caitlyn became a First Guide. We also volunteer at many of the special events held throughout the year like Clean Up Day, New Hampshire Day, and Halloween Hoot 'N Howl.

What do you like most about volunteering?

Taking care of and learning about the animals, as well as meeting new people and making new friends.

What do you wish other people knew about the Science Center?

Some people might feel bad for the animals because

Charlie is a retired Sergeant from the Coventry Police department. He also retired as a Senior Master Sergeant after 25 years of service in RI National Guard. He currently is a truck driver for Fedex Freight. Dawn is originally from Swansea, Massachusetts and worked as a Radiologic Technologist for over 20 years at Memorial Hospital of Rhode Island. She currently works at both Lakes Region and Speare Memorial hospitals. Caitlyn just completed her freshman year at Plymouth Regional High School where she plays on the volleyball and tennis teams. She also plays the clarinet in the school band.

NEWSBRIEFS

- Blue Heron School teachers continued their professional development this year. Lead Teacher Jordan Fitzgerald completed her Montessori training and certification for the three to six year old level. Associate Teacher Jordy Gianforte added to her skills through additional training for three to six year olds at the Northeast Montessori Institute this summer.
- It's been a busy season for volunteers. Eleven docents and ten First Guides completed training and join many other volunteers on site helping in numerous ways.
- Education Director Audrey Eisenhauer and Naturalist Eric D'Aleo were accepted into the Sustainability in Science Museums Program through Arizona State University. In July they attended a three-day workshop about sustainability in science museums, hosted by Gulf of Maine Research Institute in Portland. Audrey and Eric

will be working together to implement a sustainability project here, which they developed at the workshop.

- Our first ever Pollinator Party on July 11 was a great success. We hosted The Caterpillar Lab for an exhibit of live caterpillars, which fascinated the 140 guests and Guided Discoveries campers who attended this special part of the day. Visitors made wildflower seed bombs to take home, learned about beekeeping from Pemi Valley Bee Keepers, viewed a jewelry making demonstration, and learned about native bees from volunteers in Kirkwood Gardens. The day finished with live music played in locations around the trail by musicians from the New Hampshire Music Festival. Belknap Landscape Company generously sponsored this event.
- Many thanks to the Pemi Baker Beekeepers Association for their help with our observation hive in the Black

Bear Exhibit. In 2014, their members generously donated materials and time to help us establish a honey bee hive, which is used to set up a smaller colony in the bear exhibit observation hive each summer. The beekeepers continue to be generous with their time and expertise, answering our questions and visiting frequently to help keep the bees happy and healthy. Current president Gerard Godville, members Harley Putnam, Dave and Sherry Boynton, and former member Bill Sharp have been especially helpful. We owe thanks to Ben Chadwick of Alton, a long-time beekeeper and former state bee inspector, for his help with the observation hive and his expertise as well.

- On July 25, almost 900 visitors attended Christmas in July for the Critters. While Animal Care staff members offer stimulating activities for all the wild animal ambassadors every day, this event showcased some

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NATURALIST'S CORNER

AUTUMN IN THE SUMMER

By Audrey Eisenhauer



Did you notice over the summer the White Pine trees seemed to be in the wrong season? Have you found yourself sweeping and raking up an abundance of pine needles over the past few summers? It wasn't because the trees are dying or that they were jumping the gun on fall; instead it is fungi responsible for the browning of needles during the summer.

Native to eastern North America (occurring from Newfoundland west to Minnesota and southeastern Manitoba, and south along the Appalachian Mountains to the extreme north of Georgia), White Pine trees feature needle-like leaves found in bundles of five, four to eight-inch cones on half-inch stalks, and furrowed bark. They grow up to 180 feet in height. While we consider them to be evergreen trees, pine trees do seasonally lose their leaves, just not all at once. Typically after two to three years, White Pine needles

naturally turn brown and fall off during the autumn months. Since new needles are added every year, there is always an overlap between green needles and the older, inner needles due to fall. This natural process is referred to as "inner needle drop" or "third year needle drop."

The needle drop we saw during the summer over the past few years, however, is not due to this natural seasonal process. Several fungi cause this summertime needle drop, referred to as needle cast. But it is the previous year's weather, which creates conditions favorable for the fungi. Heavy springtime precipitation contributes to the buildup of fungal spores. These spores infect the needles of White Pine trees as they are developing new shoots. These needles will turn brown and fall prematurely the following summer.

The infected trees are otherwise healthy and will shed the brown needles over a few weeks. The new, green needles left on the tree will expand, improving the tree's appearance. Trees can survive this needle cast event; however, the consequence of repeated defoliation by these fungi is unknown. Recent research has found a strong link between climate change and the increase in damage from needle cast fungi affecting White Pine trees. Using regional weather data, scientists have determined an increase in precipitation during May, June, and July – the months when needles are developing – is positively correlated with damage from needle cast fungi. For example, above average precipitation between May and July in 2017 would correlate to higher rates of needle cast in 2018.

This year's rainfall totals will determine how many pine needles you will be sweeping up next summer. Based on our above average rainfall totals for April and May of this year, you may be sweeping quite a few!



FROM THE HERON'S NEST

By Laura Mammarelli

In June nine children completed their kindergarten year. Parents, grandparents, teachers, and staff members joined together as the children walked around a candle representing the sun, once for each year of attendance. Teachers narrated the students' stories at Blue Heron School. The children sang *You've Got a Friend in Me* by Randy Newman and read from their books with photos and captions they wrote. Visitors and children shared a salad from the new Garden Tower and enjoyed visiting together. It was an exciting and moving day.

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.



KIRKWOOD GARDENS PLANT SPOTLIGHT

By Brenda Erler

Fringed Bleeding Heart

Dicentra eximia

Culture: Grow in average, medium-moisture, well-drained soil in sun or part shade

Bloom: May to August

Height: 12 to 18 inches

Native to the Eastern United States on forest floors and rocky ledges in the Appalachians. Its delicate, fern-like foliage and lovely heart-shaped blossoms make it a good choice for borders, woodland gardens, and naturalized areas. Long bloom period. Reseeds readily and easily grown.

Kirkwood location: Throughout both the upper and lower gardens



Showy Stonecrop

Sedum 'Autumn Joy'

Culture: Grow in full sun in nearly any well-drained soil. Will thrive in average, sandy, or gravelly soil, but may flop in overly fertile soil. Tolerates heat and drought.

Bloom: August to September

Height: 18 to 24 inches

This beautiful fall-blooming perennial is very easy to grow and needs little or no care. It can be propagated by dividing clumps or by pushing stem cuttings into the soil where they will readily root. It is very attractive to both bees and butterflies.

Kirkwood location: Lower garden



flickr/FDRichards



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

SEPTEMBER NEW MEMBER DRIVE

Help us spread the word about Science Center memberships! During September, every new membership received will last for 13 months instead of the usual one year. Share your love of learning about the natural world and tell your friends and family. Thanks!

Moving? Send us your new address.



MEMBER BONUS BENEFITS:

SEPTEMBER: Science Center members are invited for one free visit to the McAuliffe-Shepard Discovery Center (starhop.com) in Concord.

Be sure to take your membership card with you when you go. Check websites for information about hours and directions.



The Holderness Inn at Kirkwood Gardens

Squam Lakes Artisans Gallery

Open Friday thru Monday 10-5 Labor Day to Columbus Day

NEWSBRIEFS *continued from page 3*




techniques used to keep the animals engaged in their surroundings and allows them to lead the best lives possible in captivity. It was sponsored by Plymouth Animal Hospital.

- We received a grant in August from the Oleonda Jameson Trust to purchase two new mobility scooters. The current pair is worn out. We are happy to provide new scooters that will soon be available for patrons who need assistance to tour the live animal exhibit trail.
- Up Close to Animals presentations continue five times a day through September 4 and then twice a day every Saturday and Sunday from September 9 through October 9, with presentations at 12:00 and 2:00 p.m. River Otter Feeding continues through November 1 every Monday, Wednesday, and Friday at 11:30 a.m. Trails are open every day from 9:30 a.m. to 5:00 p.m.
- Halloween Hoot 'N Howl returns this year on October 14. Sign up by calling 603-968-7194 x 11.
- The 2016 Annual Report, Audited Financial Statements, and 990 Tax Return are available for review on our website at <http://www.nhnature.org/support>. Request paper copies by contacting Development and Communications Director Janet Robertson at 603-968-7194 x 12 or janet.robertson@nhnature.org.


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.

SEPTEMBER

<p>SEPTEMBER 7 THURSDAY 9:30 to 11:00 a.m. For adults</p>	<p>Invasive Species Removal Work Days Join a Science Center staff member or Master Gardener Liz Stevens to learn how to identify and remove invasive plant species. We will begin each session with a brief introduction to an invasive species and then go out 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. Snacks and lemonade will be 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 to attend but reservations are required.</i></p>
<p>SEPTEMBER 9 SATURDAY 9:30 a.m. to 5:00 p.m. For all ages</p> 	<p>Raptor Spectacular <i>Featuring Vermont Institute of Natural Science</i> Join us for a day-long special event about the wonderful birds known as raptors. <u>Project OspreyTrack - 11:00 a.m.</u> Executive Director Iain MacLeod will share stories and photos about Project OspreyTrack; a program that uses state-of-the-art GPS transmitters to track Ospreys as they migrate from their nests along the eastern seaboard including New Hampshire, Maryland, and Newfoundland to their winter homes in South America. Iain's presentation will include an up-close encounter with a live Osprey. <u>Raptor Encounter - 1:00 p.m.</u> Join a naturalist from the Vermont Institute of Natural Science (VINS) for an exciting Raptor Encounter where a variety of live falcons, hawks, and owls will be displayed. This first-hand program will show you just what defines a bird as a raptor and explain their adaptations for life as predators on the wing. A flight demonstration, touchable artifacts, and hands-on materials round out this special experience. <u>Up Close to Animals</u> These short presentations will feature up close live raptor ambassadors in engaging presentations with a naturalist. 12:00 p.m. – Broad-winged Hawk 2:00 p.m. – Red-tailed Hawk 3:00 p.m. – Saw-whet Owl Every year, Wings of Dawn Rehabilitation Center in Henniker receives injured or orphaned raptors that need special care and rehabilitation. If a raptor is ready to be released on September 9, visitors will be able to witness the release. Volunteer docents will rove the live animal exhibit trail with live birds throughout the day. <i>Cost: all Raptor Spectacular activities are included with trail admission</i></p>  
<p>SEPTEMBER 13 WEDNESDAY 11:00 a.m. to 12:00 pm. For ages 2 and 3</p>	<p>Nature Play Time Join us for some unstructured play in nature with your little one! We will set the stage for fun so you and your tot can laugh and explore the forests, fields, and ponds of the Science Center together. Programs are held outdoors; please dress for the weather. Adults get to play too! An adult must participate at no additional cost. <i>Cost: \$5/member child; \$7/non-member child</i></p>
<p>SEPTEMBER 15 FRIDAY</p>	<p>Invasive Species Removal Work Days 9:30 to 11:00 a.m. For adults <i>See description September 7.</i></p>
<p>SEPTEMBER 16 SATURDAY 8:00 to 9:30 a.m. For adults and children ages 14+</p>	<p>Yoga Walk Take your yoga outdoors! Alternate walking and yoga while exploring the Science Center's trails and quiet places before gates open to the public. Under the guidance of a certified yoga instructor, you will walk for 5 to 10 minutes and then stop for 15 to 20 minutes of gentle yoga at places like the Water Matters Pavilion deck, the Geology Exhibit, the Marsh Boardwalk, the Upper Pond, and along the Ecotone Trail. No yoga mat or experience is needed. Wear comfortable clothing and walking shoes. Minors must be accompanied by an adult. <i>Cost: \$12/member; \$15/non-member</i></p>
<p>SEPTEMBER 23 SATURDAY 10:00 to 11:30 a.m. For all ages</p>	<p>Upper Pond Adventure On the surface, the Upper Pond looks tranquil. But underwater is another story. Join us to learn about critters camouflaged and hiding, predators and prey, large and small. All equipment is provided to collect pond dwellers but your sharp eyes are needed to find them. We'll conclude with a visit from an aquatic animal. <i>Cost: \$7/member; \$9/non-member</i></p>
<p>SEPTEMBER 24 SUNDAY</p>	<p>Yoga Walk 8:00 to 9:30 a.m. For adults and children ages 14+ <i>See description September 16.</i></p>

OCTOBER

OCTOBER 5 THURSDAY	Invasive Species Removal Work Days 9:30 to 11:00 a.m. For adults <i>See description September 7.</i>
OCTOBER 7 SATURDAY 7:00 to 9:30 a.m. For adults	Fall Foliage Photo Cruise Picture a crisp morning cruise on Squam Lake surrounded by loons and the vibrant colors of fall. What could be better? Come aboard and set out to capture images of the brief, colorful foliage season on Squam Lake. You will photograph from the water as well as from different shore locations (weather permitting). Learn about lighting, composition, perspective, and subject matter (depending on comfort level and knowledge of participants). This trip is for beginning and amateur photographers alike. <i>Cost: \$23/member; \$27/non-member</i>
OCTOBER 11 WEDNESDAY	Nature Play Time 11:00 a.m. to 12:00 p.m. For ages 2 and 3 <i>See description September 13.</i>
OCTOBER 14 SATURDAY 6:00 to 8:30 p.m. For all ages Rain or shine 	Halloween Hoot 'N Howl Enjoy an eerily entertaining 40-minute guided tour around the grounds in the evening. Trail walks feature live skits with a seasonal theme and depart every 10 minutes from 6:00 to 7:30 p.m. Come in costume and dress suitably for outdoor weather. After your journey warm up with Halloween games and tasty treats! <i>Cost: \$8/member; \$11/non-member</i>
OCTOBER 28 SATURDAY	Yoga Walk 8:00 to 9:30 a.m. For adults and children ages 14+ <i>See description September 16.</i>
OCTOBER 28 SATURDAY	Upper Pond Adventure 10:00 to 11:30 a.m. For all ages <i>See description September 23.</i>



Homeschool Series

Earth Cycles

Thursdays, 10:00 to 11:30 a.m.

November 2, December 7, January 4, February 1, March 1, April 5

Two sessions available: Ages 4 to 6, Ages 7 to 10

This educational series is specifically for homeschooled students. Programs focus on the cycles you can observe in the natural world. Topics include rock cycle, water cycle, life cycles, and more! One adult must participate with children at no additional cost. Each additional adult pays child cost.

Cost: \$9/member child per session; \$11/non-member child per session

Reserve all six programs by November 2 for a \$1 discount per session.

ON THE TRAIL:

River Otter Feeding

Every Monday, Wednesday, and Friday at 11:30 a.m. at the River Otter Exhibit through November 1.

See our two playful river otters have an early lunch. Our expert volunteers will tell you all about otter biology and ecology, while also serving up a tasty treat or two.

Up Close to Animals

Saturday and Sunday at 12:00 p.m., and 2:00 p.m. at the Amphitheater (weather permitting) through October 9.

Meet live animals up close and learn from an experienced naturalist. These engaging talks feature a variety of animals, including birds, mammals, and reptiles.

Programs included with regular trail admission. Visit the calendar at nhnature.org for the latest schedule, details, and program information.

SQUAM LAKE CRUISES

Book your cruise online at nhnature.org!

BUY CRUISE
TICKETS

Explore Squam

September 1 to October 9

Tuesday, Wednesday, Thursday at 11:00 a.m., 1:00 p.m.

Friday through Monday at 11:00 a.m., 1:00 p.m., 3:00 p.m.



Dale Lary

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.

Nature of the Lakes

September 5 to October 5 - Tuesday, Wednesday, Thursday 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.

Squam Lake Cruise Rates:

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

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

Squam Lake Charters

Treat your visiting family or friends to a truly memorable experience. 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.

NATURE TOURS



Highlands and Hebrides

June 8 to 21, 2018

Join Iain MacLeod on this 13-day trip to explore the cultural and natural history of the spectacular Scottish

Highlands and Islands. Fly from Boston to Glasgow and then head to the Spey Valley to spend six nights at the Rowan Tree Hotel near Aviemore. Visit lochs and ancient forests and the shores of the Moray Firth, including a day trip to the Black Isle, Cromarty, Loch Ness and even Balmoral Castle. The second part of the trip is on the island of Mull in the Inner Hebrides. Stay five nights at Tiroran House Hotel (voted best Country House Hotel, 2013 and 2014). The spectacular loch-side setting and beautiful gardens make this a memorable location. Day trips will include a boat excursion to the Treshnish Isles for lunch among the Puffins and a chance to explore Fingal's Cave on Staffa. Visit the beautiful village of Tobermory and take a day trip to Iona and tour of the ancient Abbey. Wildlife highlights include White-tailed and Golden Eagles, Otters, Seals, and Red Deer.

Cost: \$5,850 (assumes double or twin occupancy room*) All-inclusive cost includes: round trip flight from Boston to Glasgow, Scotland ferries, van transportation, all accommodations, all meals, and admission fees. *There is an additional \$400 charge for a single room. Maximum group size: 12.



Land of Enchantment: Natural Wonders of New Mexico

November 6 to 16, 2018

Join Iain MacLeod for a spectacular, small group tour of New Mexico.

November is a special time to visit. The temperatures are comfortable; the light is fantastic and tens of thousands of cranes and snow geese have just arrived for the winter. In addition to wildlife and spectacular scenery, the trip includes visits to the Bandelier National Monument, the Valley of Fires lava beds, Carlsbad Caverns, Santa Fe National Forest and beautiful old town Santa Fe. Other highlights include the Bosque Del Apache National Wildlife Refuge and Bitter Lakes in the Pecos Valley. See Prong-horn Antelope, Prairie dogs, Road-runners, vast flocks of waterfowl, raptors galore, and incredible sunrise and sunset flights of Sandhill Cranes.

Cost: \$3,700 (assumes double or twin occupancy room*) All-inclusive cost includes: round-trip airfare from Boston to Albuquerque, ground transportation (15-passenger van), all accommodations, all meals, admission fees, and leaders' fees. *There is an additional \$400 charge for a single room. Maximum group size: 10.

View full itineraries at nhnature.org/programs/nature_tours.php. Contact Iain at 603-968-7194 x 23 or iain.macleod@nhnature.org for details or to book your place.

SCIENCE CENTER CELEBRATES LAKE EDUCATION SUMMER SPLASH ON JULY 22

The tent is down, the music is over, the crowd is gone, and all that remains of Summer Splash, are the good memories of an enjoyable community event. To showcase our Lake Education programs, a video was shown, which featured Inter-Lakes students taking part in a Lake Ecology program with Naturalist Eric D'Aleo. It's now available on our website at www.nhnature.org/teachers.

Our crew of volunteers – Nancy Beck, Andy Eaton, Barb Laverack, Lea A. Stewart, and Pam Stearns planned for months to make this a successful event. We received wonderful support from many businesses and individuals. Almost 300 guests enjoyed dinner and dancing to music by The Sweetbloods. Net proceeds are estimated to exceed \$25,000 to support education programs.

Major Underwriters included Barbara Nan Grossman, Anne Lovett and Steve Woodsum, Pam and Larry Tarica, Common Man Restaurant, and Meredith Village Savings Bank.

Table Sponsors included: Leslie and Austin Furst; Martha and Chris Grant; Squam Boat Livery; Jean and Murray Swindell; Carol and John Thompson; Bryant and Carolyn Tolles; Betsy and Bruce Whitmore; and Constance and Sankey Williams.

Grappone Automotive Group sponsored the invitation; Mill Falls at the Lake sponsored the bar; Wells Fargo Advisors and Matthew Lessard sponsored the band.

Cormack Construction Management; Dunkin Donuts of Plymouth; E.M. Heath; Lovering Volvo; Mid-State Health Center; Nobis Engineering; and Christopher P. Williams Architects, PLLC purchased ads in the event program.

Donations were given by: Anonymous (1); Priscilla T. Alvord; Edmund and Betsy Cabot Charitable Foundation; Cathy Denious; East Coast Foundation; Diane Garfield and Peter L. Gross, MD; Chris and Mark Goldstone; Liz and Tom Kelsey; Nuna MacDonald; Sandy and Louise McGinnes; Susan McKimms; Joseph and Victoria Prior; Penny Rodday; Sara Jayne Steen and Joseph Bourque; Davis Thurber; David and Stacy Trott; and Lisa Wardlaw.

Auction donations were contributed by: Carol and Marc Bard; Nancy and Paul Beck; Betsy Washburn Cabot; Ehlers Management Group; Experience Squam and Cindy O'Leary; Holderness Harbor; Orvis Company and Tiffany Teaford; Emily Preston; Barb and Sam Laverack; Sandra and Carl Lehner; Rockywold-Deephaven Camps; and Squam Lakes Association.

In kind donations were made by: The Common Man; Golden Pond Country Store/ E.M. Heath; Holderness Harbor; Lakes Region Tent & Event; Lisa Lovett; and Tuckerman Brewing Company.

And as always, we could not do so much without the time and dedication of volunteers and staff.



2017 ANNUAL MEETING

The 2017 Annual Meeting for members was held on Saturday, August 12. Members enjoyed a continental breakfast followed by the business meeting. Chair Ken Evans asked the quorum of members present to vote to approve the 2016 Annual Meeting minutes, which were accepted unanimously. Treasurer Justin Van Etten presented the 2016 Finance Report. Attendees received copies of the 2016 Annual Report, which is also available at www.nhnature.org/support.

Governance Committee Chair Sarah Brown led board elections. Trustees Harriet Harris, Bill Lee, Carl Lehner, and Lea A. Stewart were re-elected to serve three-year terms. Dr. Mary Earick was elected as a new trustee for a three-year term. Her biography is below. Officers Ken Evans, Chair; Lea A. Stewart, Vice Chair; Justin Van Etten, Treasurer; and Dave Martin, Secretary were re-elected to one-year terms. Trustee Sandy McGinnes retired and was thanked for his dedicated service.

Executive Director Iain MacLeod recognized Volunteer Manager Carol Raymond for 10 years of service.

Iain MacLeod presented the 2017 Horizon Award to Former Trustee Bruce Whitmore.



Horizon Award recipient Bruce Whitmore (l) with Board Chair Ken Evans.

Dr. Mary Earick currently directs "NG2: Personalized Inclusive Education Pathways" an Assessment for Learning Project, a partnership of the Center for Innovation in Education and Next Generation Learning Challenges supported by the William and Flora Hewlett Foundation and the Bill and Melinda Gates Foundation. Prior to this appointment, Mary worked as an Administrator for the New Hampshire Department of Education, an Associate Professor in the Department of Early Childhood Studies (ECS) at Plymouth State University and an Assistant Professor in the Department of Instruction and Teacher Education at the University of South Carolina. She holds a B.S. in Early Childhood Education, M.S. in Urban Education and PhD in Language Literacy and Socio-Cultural Studies.

OPENING A WINDOW TO THE NATURAL WORLD

A Bequest from Volunteer Clara B. Fowler

“It was always fun.”



One of the best things about working here is that I get to meet so many remarkable, inspiring, and just plain fun people. Volunteer Clara Fowler was one of them. I don't remember when we first met but in my mind's eye she always had a twinkle in her eye, a smile on her face, and something interesting to share.

Clara was a school teacher who continued teaching by volunteering here for many years. She and her husband Wade both passed away in 2016 and both are missed.

We received an unrestricted bequest from Clara Fowler's estate in June. Her daughter Anne Fowler Flaggs, wrote this about her mother's bequest, “She loved volunteering... and always looked forward to spending her time there and taking all the kids and grandkids for a visit. She enjoyed working with all the staff and volunteers and being able to continue educating everyone she met during her volunteer stints. Thank you for finding ways to allow her to volunteer even when her mobility issues wouldn't let her walk the trail....What a treat it was a few years ago when she discovered she could [use] a scooter and take to the

trail with her granddaughter. That was certainly a favored memory for them both. I'm sure you'll find a good use for this donation and I look forward to my next trip to the Science Center to enjoy my memories.”

At their July meeting, the Board of Trustees decided to use a portion of Clara's bequest to pay for four weeks of training for Associate Teacher Jordy Gianforte at the Northeast Montessori Institute. The remainder of the gift has been allocated to the Board Designated Reserve, which is a discretionary fund used to support operations and special projects, as well as to provide long term financial stability. The board may move part of the bequest to the Blue Heron Scholarship Fund at a later date.

As a member of our Naturalist's Legacy Society, I think Clara would be happy to know her bequest will continue supporting natural science education here in the years to come, as she did throughout her life.

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



W I S H L I S T

Golf cart
Large coolers
Underwater Rover
Dog crates

For Facilities: Air compressor, ladders, leaf blower, plow blade, shop tools, string trimmer, trailer, walk behind sand spreader, water tank, welder

These generous donors made tribute gifts, which were received between April 1 and June 30, 2017:

In memory of Alan T. English
Anne and Paul Babineau
Liz and Tom Kelsey

In honor of Ken Evans for Father's Day
Mike, Sara, and James Evans

In memory of Russ Orton
Ipas
Judy and John Ladd

In memory of Theresa Powers
Carol and Rick Carlson

In memory of Richard Sanderson
Anne Fosse

In memory of Greg Smith
Nancy and Louis Gaudreau
Holly and Tom Fulton

Naturalist's Legacy Society

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

Learn more at http://www.nhnature.org/support/planned_giving.php



GREEN TIP: HELP KEEP OUR WATERSHEDS HEALTHY



New England Aster, *Aster novae-angliae* 'Alma Pofschke'

Lawn maintenance practices can affect ponds and lakes so it's best to keep fertilizer and pesticide use to a minimum. Better yet, remove some lawn and create a rain garden like the Science Center is planning at the new Lake Cruise Headquarters. (It's not yet complete – native plants and perennials along with interpretive signs are still to come.)

Rain gardens help to reduce runoff by allowing storm water to soak into the ground instead of running off and causing erosion and water pollution. They can also improve water quality in nearby bodies of water and make rainwater available for plants as groundwater rather than being sent through storm water drains to lakes and ponds. Plus, the native plants recommended for rain gardens often require less water and fertilizer and show better resistance to pests and diseases.

Soak Up the Rain New Hampshire, a program through NH Department of Environmental Services, along with UNH Cooperative Extension Service are lending their expertise and resources to the selection and planting of native plants in our rain garden this fall. You can learn about planting rain gardens, using rain barrels, planting trees, and finding other ways to Soak Up the Rain to protect and restore clean water in our local lakes, streams, and estuaries by exploring their websites:

<http://soaknh.org/>

<https://extension.unh.edu/Sustainable-Landscapes-and-Turf/Rain-Gardens>

TRAIL'S END

FAMILY



As I write this fall edition of our newsletter, I am reflecting on the importance of family in our lives. For the last two weeks, Jenny and I hosted our extended family of twenty adults and eight children under the age of seven (not quite all at once for both weeks). The experience was exhilarating, exhausting, ear-shattering, head-turning, frustrating, and immensely satisfying. All at the same time! As everyone left to return to various states and country of residence, I am reminded of a quote from George Burns who said, "Happiness is having a large, loving, caring, close-knit family in another city." Perhaps Lee Iacocca was a little more serious when he said, "The only rock I know that stays steady, the only institution I know that works, is the family."

When I think of our Science Center I think about the reasons we are so successful in binding relationships with members, staff, volunteers, and visitors. It is because we are a family! A family that comes together from all walks of life, all geographies, all ages, and all histories to celebrate the science that surrounds our natural world. Helene Iswolsky said it better than I can, "I believe that we are always attracted to what we need most, an instinct leading us towards the persons who are to open new vistas in our lives and fill them with new knowledge." Think about it, last year we touched nearly 100,000 visitors, school children, cruise participants, and program attendees. I would say that is quite an extended family. And the Science Center is the home we all choose to love.

"Having a place to go is home. Having someone to love is family. Having both is a Blessing." (Donna Hodges).

So as this newsletter hits your mailbox or computer, our summer is over and we prepare to resume our fall and winter routines. But I think the Science Center will never be far from your thinking. As expressed by Frederick Buechner, "You can kiss your family and friends goodbye and put miles between you, but at the same time you carry them with you in your heart, your mind, your stomach, because you do not just live in a world but a world lives in you." Squam Lakes Natural Science Center is your family and will be with you until we see you again.

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.

WHITETAIL WAYS *continued from page 1*

for browse when the calorie intake exceeds the energy it takes for the trip. Well-meaning folks might be tempted to feed deer hay to get them through the winter. This "help" can be a death sentence. Without the proper microorganisms to digest this out of season food, deer can starve even with a full stomach. It costs deer energy and time – about two weeks – to transition from one kind of food to another.

The white-tailed deer is New Hampshire's state animal, an honor conferred in 1983. Its popularity is shared by 10 other states, which have also designated this amazing mammal as their state animal. What is the easiest way to spot one? As a crepuscular creature, deer are most active at dawn and dusk. Those are excellent times to check field edges. Sometimes you may hear a stomp or snort as they warn their companions of your presence. Their classic warning signal gives them their name. A white-tailed deer's tail is camouflaged when down. With danger close, its tail springs up, flashing white and waving back and forth as the deer melts over the nearest stone wall and into the woods. Startling? Yes. Classical New England? Yes.



WHITETAIL QUIZ

1. True or False? Fawns keep their white spots for the first year.
2. The _____ is the reflective layer in the eyes of many nocturnal animals, which gives them enhanced night vision.
3. Which mammal bone is one of the fastest growing bones on Earth?
4. What changes in a deer's digestive system to adjust to different seasonal foods?
5. Which aspect of a whitetail's winter coat is key to deer staying warm?

Answers:

1. False | 2. Tapetum | 3. Antlers | 4. Microorganisms | 5. Hollow hairs filled with air




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THE HOWLING COYOTE GIFT SHOP

MAKE TRACKS TO THE

**MEMBERS ONLY
SALE**

Why not do some holiday shopping while
supporting the Science Center?
Plan ahead and take advantage of our
special members only sales.

October 7 through October 31

**Members receive a 20% discount at
the Howling Coyote Gift Shop.**

(Regular discount is 10%. Discount on non-sale items.)

Open daily 9:30 a.m. to 5:00 p.m.

All proceeds from sales at the Howling Coyote Gift Shop benefit
the mission of Squam Lakes Natural Science Center:
*to advance understanding of ecology by exploring New
Hampshire's natural world.*

KIDS ACTIVITY: BARK RUBBINGS



Bark rubbings are
a fun way to learn
and record how
various types of
trees have different
textures and
patterns. All you
need is plain paper
and unwrapped
crayons. Hold the
paper against
a tree. Use the
long, flat side of
the crayon to rub

against the paper. You can make your finished
product into a colorful art display or identify
and label the bark rubbings to make your own
guide to tree bark. Making bark rubbings is a
great activity for any season of the year.

*This activity is from 50 Nature Activities for Kids by
Science Center Senior Naturalist Dave Erler.
Available in the Howling Coyote Gift Shop for \$14.95*