



LIFE IN THE DEPTHS

By Margaret Gillespie



What fish's lifestyle do you think would resonate best with Frank Sinatra's song lyric, "I did it my way?" I nominate the burbot (*Lota lota*), a freshwater fish native to New Hampshire, also known as the freshwater cusk or cod, lawyer, and eelpout, among other common names. To say they have an interesting lifestyle is an understatement. Since burbot are native bottom-dwelling residents of cool freshwater lakes, including Squam Lake, they are sometimes "out of sight, out of mind." Join me in a deep dive, investigating this fish for its adaptations to this benthic existence.

My first encounter with the elusive burbot was during one of the Science Center's educational ice fishing outings. Since this fish is nocturnal, traps had been set out overnight in the hope of us pulling up a catch early the next morning. We were not disappointed! I was excited to be introduced to this strange fish. Although in the same family, Gadidae, as cod, a familiar saltwater fish, burbot are the only freshwater fish in this group. The image of this fish emerging from the water will reside in my memory bank for the foreseeable future. What features make this creature so unique?

Burbot, on average, reach a length of 16 inches but can grow significantly larger. Although this fish superficially resembles an eel with its long, slender body, the fins indicate otherwise. It sports two low dorsal fins with one following the other, appearing to be almost connected. Additionally, it has a long ventral fin. Small triangular pectoral fins provide stabilization on the substrate beneath the fish. A rounded caudal fin helps with changing direction. Burbot also possess tiny scales that appear to be part of the skin, giving the fish a smooth feel. One fascinating characteristic of burbot is its single barbel, a sensory structure resembling a thick, extended whisker. It descends from the center of the lower jaw and is about an inch long. With its aid, these fish can feel potential food items which they would not see on the substrate of the dark bottom waters. An adult burbot's diet includes a variety of fish such as suckers and perch along with aquatic insects, small crayfish, and frogs. Aided by a large mouth and a multitude of backward slanting teeth, the burbot is a formidable predator.

We usually "think spring" when we hear about fish spawning. Burbot, however, run on their own particular schedule. Surprisingly, they spawn in winter – late February into the beginning of March - beneath the ice! Theirs is a nocturnal group event with gatherings in shallow, sandy, or gravelly spots along lake shores or up tributary streams. One could say these fish don't wait patiently in line. It is an aquatic rough and tumble time as each individual struggles toward the center of a circular mass of fish, exuding eggs or sperm. Finally, procreation is complete as the eggs settle to the lake or stream bottom. Each female may have deposited more than a million eggs! The eggs themselves, one millimeter in diameter, will hatch with the warming spring waters. The tiny burbot's first priority is to catch food that matches their abilities – zooplankton and small aquatic insects, moving on to young crayfish and larger prey over the rest of their lives. As our climate warms, burbot, given their need for colder waters, are the kind of fish which could be especially impacted by our warming Earth.

continued on page 11

IN THIS ISSUE...

- Page 2 Forging Trails: Going Solar
 - Page 3 Announcing New Mountain Lions
 - Page 4 Budding Trees
 - Page 6 Belknap Landscape Company
 - Page 8 Volunteer Training Opportunities
 - Page 9 Membership Updates
 - Page 10 Sponsor A Species
 - Page 11 Trail's End: Strategic Planning
- And much more!

TRAILS OPEN
MONDAY, MAY 1
 Meet our newest animal
 ambassadors!



Program and event tickets available at nhnature.org.

FORGING TRAILS: GOING SOLAR!



When you next visit the Science Center, you won't be able to miss some major changes in and around the parking lots. We have gone solar in a big way!

In our last strategic plan, we made a "50 by 30" pledge - to have 50% of our energy come from renewable resources by 2030. We made huge strides when we installed our cord-wood heating plant in 2015, cutting our use of propane and oil throughout the campus, but we knew that our electric use was the big nut to crack.

We first started the conversation about a solar array four or five years ago when we were starting to plan for the Early Childhood Education Center (Blue Heron School). Right out of the gate, we worked with Ted Vansant at New England Commercial Solar Services, based locally in Holderness. Ted helped us size the array to meet our needs and maximize our impact.

In 2021, we worked with the crew at Plymouth Area Renewable Energy Initiative (PAREI) to install 68 panels (approximately 25 kW) on the roof of the school... but that was just the start. Now we have installed 240 more panels (approximately 117 kW) on ground-mounted arrays between the parking areas where we already had excellent exposure.

Those combined 308 panels (142 kW) are projected to offset close to 100% of our energy usage and save over 80 tons of CO2 emissions annually. CO2 accounts for about 76 percent of total greenhouse gas emissions and is the biggest contributor to human-caused global warming and rapid climate change. We all know the consequences of climate change now include intense droughts, water scarcity, severe fires, rising sea levels, flooding, melting polar ice, catastrophic storms, and declining biodiversity.

We all need to do our part to reduce greenhouse gas emissions and slow the rate of global warming. That's why we went solar... and you can too!

<https://www.epa.gov/climate-change/what-you-can-do-about-climate-change>



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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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OPENING A WINDOW TO THE NATURAL WORLD

By Amanda Gillen, Development and Communications Director

Compost, black gold, kitchen midden. Whatever you call it compost is hot and beneficial to a diverse ecosystem. We compost a lot of material at the Science Center; from lawn clippings, leaf debris and other organic matter at Kirkwood Gardens to animal waste, food waste, and animal bedding around our campus. We compost for a variety of reasons, as many of you probably do too. Yes, it's good to throw away less, but compost also helps grow healthy, disease resistant plants that are good for pollinators.

We're putting a renewed focus on pollinators this season. Over the past few years we have added signage for nearly all of the plants at Kirkwood Gardens to show the animals supported by specific plants like birds or butterflies. Check it out the next time you visit. We are also increasing pollinator-friendly plants around our campus. You can see this at the Bird Feeding Station, the Welcome Center, Lake Cruise Headquarters, and in and around the Raptor Exhibit.

Pollinators are also our theme for this year's Family Picnic in July. Last year's event proved to be a great success with fun for all ages. We're excited for its return this season and look forward to making this an annual event.

You can help support the Pollinator Party by sponsoring the event. For information please contact Development Officer, Kim Beardwood Smith at kim.bsmyth@nhnature.org or see the family picnic web page at nhnature.org/picnic.



Save the Date: Family Picnic, Saturday, July 22, 2023
Sponsorship Details at nhnature.org/picnic

ANIMAL CARE: ANNOUNCING NEW MOUNTAIN LIONS

by Lauren Moulis, Animal Care Director

Animal Care is pleased to announce the arrival of two new mountain lions. The pair, two males, were transferred mid-January from Washington Department of Fish and Wildlife to New Hampshire. They were both orphaned and surrendered to the Fish and Wildlife office. At roughly 4 months of age, they are shy yet inquisitive with the staff in animal care. On arrival, they entered a 30-day quarantine period behind the scenes, required for all new acquisitions. During this time, the animal care staff worked on socializing and basic shifting behaviors with them in preparation for advanced training further down the line once they move into their permanent home at the Mountain Lion Exhibit on the live animal exhibit trail. Our facilities department has been working hard on making needed repairs and enhancements to the Mountain Lion Exhibit, which housed our previous pair of cats for 20 years. We hope that in the coming weeks these two boys will begin learning about and exploring their new space.



NATURALIST'S CORNER

BUDDING TREES

By Kyle Salmons

"I'm done with winter. When will everything turn green again?"

If you have said this phrase, or have heard something like it, you are not alone. I hear something similar near the end of every winter season in New Hampshire. Unfortunately, you cannot circle a date on your calendar for when a tree will start its budbreak and leaf growing. So, what starts this process? It's a bit more complex than you might think.

The process begins in fall as a response to two main triggers: night length and temperature change. Longer nights in the fall help our deciduous trees, trees that lose their leaves like maple and birch, know that it's time for winter dormancy. Lower temperatures work together with night lengths to tell the tree that it is indeed that time of the year again. The leaves that will pop out in spring are already forming during late summer and fall in the form of a winter tree bud. This bud is dormant during winter conditions so that it can begin its journey into a leaf immediately once spring conditions are met. Now that we know that these winter buds are just waiting, what triggers them to go from bud to leaf?

Our deciduous trees have a sort of internal checklist that needs to be completed in sequence before the buds burst in spring. The first

requirement on the tree's list: has the temperature been cold enough for long enough? If this step is fulfilled the tree can move to its second requirement: has the temperature warmed up enough? If the tree can fulfill its checklist, we will get to see that green color of spring begin to return. Sounds easy, right? The actual mechanisms are much more complicated and vary from species to species. As our climate changes, those checklists may not be met in the way the tree needs for optimal growth. For instance, if a certain fall season was warmer for much longer than normal, our trees might get long enough nights to signal entering dormancy, but it might not meet the necessary number of cold days to fulfill the first requirement of its checklist to exit dormancy. While trees are very capable of adapting to environmental changes the process is slow and our trees are susceptible to dramatic changes due to climate change.



flickr/ Liz West CC BY 2.0

Despite my interest in how trees, that give us vibrant fall foliage and lush spring canopies, will adapt to a changing climate, a tree's life cycle is a fascinating process that brings me joy in every season. Spring is a time of regrowth and nothing makes it more apparent than the first buds breaking on a familiar tree.



FROM THE HERON'S NEST

The Blue Heron students *and* teachers were thrilled to finally have some snow to play in. Many hours were spent making snow angels, building snowpeople, sliding down the big hills, and learning about animal tracks with the naturalists. We also focused on how animals find food in winter and how they adapt to the changing environment with camouflage.



Blue Heron School is a nature-based Montessori school for children ages three to six.

For information please visit nhnature.org/programs or contact Blue Heron School Co-Directors Jordan Fitzgerald or Jordy Gianforte at 603-968-7036 or blueheron@nhnature.org.

KIRKWOOD GARDENS

By Emma Erler

MOLES OR VOLES

Q: Now that the snow is starting to melt, I'm noticing lots of tunnels in my lawn. Are moles or voles to blame?

A: Once the snow melts, you may be dismayed to find damage to your lawn. While it may be clear that some sort of animal was to blame, which was it? Winter lawn and landscape plant damage is usually due to the activity of moles and meadow voles, both of which are active year-round.

Meadow voles are one of the most significant winter rodent pests in the garden. They tend to spend most of their time above ground, forming round tunnels on the surface of the lawn. Though the tunnels themselves may look unsightly, don't worry about them too much. They will often become less noticeable once the grass begins to grow again. Meadow voles generally do more lasting damage to woody landscape plants than lawns. If you see lots of vole tunnels in your lawn, take a close look at the base of your trees and shrubs.

Meadow voles feed on bark in the winter when live grass and herbaceous plants are unavailable. Vole feeding often girdles branches, trunks, and roots, which can kill trees and shrubs if the damage is extensive.

Unlike voles, moles are insect eaters. They do not feed on landscape plants or lawns, but rather on insect larva and earthworms. When moles feed, they create hills and tunnels in the lawn by pushing up the soil. Mole activity often looks more serious and damaging than it truly is. The easiest way to fix this problem is to tamp down or rake out the tunnels. If the moles continue to be an issue throughout the summer, you may want to consider treating your lawn for grubs – but check first to make sure you have them in your lawn! Though their hills and tunnels can be annoying, moles do a great job of aerating the soil; an important task by a creature that is hardly ever seen aboveground.

PLANT SPOTLIGHT

Double Daffodil *Narcissus* 'Tahiti'

Culture: Grows best in average, moist, well-drained soils in full sun to part shade. Tolerant of a wide variety of soils with good drainage.

Bloom: 'Tahiti' is a double daffodil with flowers that have bright yellow petals and orange interior markings. Flowers mid-spring.

Height: 12 to 16 inches

'Tahiti' is a classic, much-loved double daffodil variety that is very easy to grow and is particularly spectacular in groups or mass plantings. Plant in mid to late October or early November once the soil temperature has cooled to 40°F. Like most daffodils, 'Tahiti' is drought tolerant and avoided by deer.

Kirkwood location: Upper garden in the beds along Route 3



Photo by Susan Gurney

Rhododendron *Rhododendron* 'Nova Zembla'

Culture: Prefers acidic, organically rich, moist, well-drained soil in part shade to shade. Plant in a location protected from strong winds. Hardy to zone 4.

Bloom: Flowers are bright reddish-pink with darker spots, held in clusters. Peak bloom in May.

Height: 5-8 feet

'Nova Zembla' is considered one of the "iron-clad" rhododendrons, an informal designation which means the variety is easy to grow and hardy in cold climates. It is noteworthy for its deep green, glossy, evergreen foliage, and large trusses of reddish-pink flowers held at the tips of branches. The Genus name *Rhododendron* comes from the Greek *rhodo* for rose and *dendron* for tree. Very useful in native and woodland gardens or in shrub borders.

Kirkwood location: Upper garden on driveway side



Photo by Susan Gurney



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

BUSINESS PARTNER PROFILE

RUTH AND HAYDEN MCLAUGHLIN

BELKNAP LANDSCAPE COMPANY

The McLaughlins, Hayden and Ruth, grew up in New Hampshire and have always loved the Lakes Region. Family, skiing, and sailing were powerful pulls for them to return to the area as young adults to grow roots and start a family. Settling in Gilford, raising a family, and owning a business took a lot of time and attention, but they still found ways to support their community.

In the Lakes Region, there are countless ways to volunteer, give, and be involved with numerous causes. Like many, the McLaughlins found the Science Center, and have been involved since.

Hayden and Ruth have a hard time pinpointing when they first decided to support Squam Lakes Natural Science Center. Perhaps it was inspired during one of their trips to the Center with their children Catherine, Daniel, and Grace. Or maybe a conversation at a community event or donation letter mailed to their business, Belknap Landscape Company. Something planted that seed, and for nearly 30 years, their support has grown.

Hayden recalls the beginnings of Kirkwood Gardens in 1996, reviewing Grace Kirkwood's plans for the space and scouring nurseries throughout Maine, New Hampshire, and Vermont to source the perfect plant specimens. He remembers working with the New Hampshire Landscape Association to rally two dozen professional volunteers who descended on Holderness one day that summer to install plants and features to bring Grace's vision to life. Since then, Hayden has continued supporting the gardens as a sponsor and lending professional support through Belknap Landscape Company.

Ruth has happy memories of trips to the Science Center. While chaperoning the occasional school trip and weekend family outings, her appreciation grew. She loved the interactive learning programs and how they made curiosity come alive in her kids. Something special happens when learning and excitement come together, and those trips made Ruth a believer. Now Ruth lends support through Belknap Landscape for programs like the Pollinator Party or the Caterpillar Lab and their interactive learning opportunities.

Today, their children are grown, their business is flourishing, and the ski slopes and waterways still beckon them. Belknap Landscape continues to provide specialized services to Kirkwood Gardens with the next season and sponsorship on the horizon. Hayden and Ruth are still committed to and support Squam Lakes Natural Science Center in both action and spirit.



Learn about Business Sponsorships at
nhnature.org/support/corporate_gifts.php



VOLUNTEER OPPORTUNITIES AND TRAINING

The Science Center welcomes volunteers for varied services with some requiring formal training.

- **Lake Education Assistant, May 11, 3:00 to 4:00 p.m.:** Lake Education Assistant volunteers assist school groups with several lake testing activities. Most shifts are on weekdays for 2 hours. Volunteers self-schedule according to their availability. Volunteers are at least 18 years old, enjoy interacting with students of varied ages, and can help hoist an anchor out of the water.
- **Docent Training, June 20 through 23, 3:00 to 8:00 p.m., and June 24, 9:30 a.m. to 12:30 p.m.:** Volunteers interested in being outdoors on the exhibit trail interacting with visitors and sharing information about animals and ecology will fit well in this position. Docents may assist naturalists on off-site programs, with Animal Care tasks, and give public presentations.
- **First Guides Junior Docent Training, June 28 through June 30, 9:30 a.m. to 3:30 p.m.:** First Guides are teen volunteers between the ages of 14 and 17 on July 1, 2023. They engage the public in discussions about animals and ecology and join adult docent mentors who often have live animals to demonstrate.

Individual training sessions are offered for animal care, exhibit window washers, greeters, wood preparation crew, and more. For more information about the volunteer program and to apply to become a volunteer, visit the Volunteer page at nhnature.org or contact Volunteer Manager Carol Raymond at 603-968-7194 x 122 or carol.raymond@nhnature.org.

UPCOMING 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 6 THURSDAY 10:00 to 11:00 a.m. For ages 4 to 6 or 7 to 10</p>	<p>Homeschool Series - Earth Cycles 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! The program includes a series of monthly one-hour, in-person programs held outdoors, with a 30-minute virtual wrap-up the following week featuring a live animal. In-person Outdoor Program: April 6, 10:00 to 11:00 a.m. Virtual Wrap-up with Live Animal: April 13, 10:00 to 10:30 a.m. Cost per session: \$9/member child; \$11/non-member child An adult must participate with children at no additional cost. Each additional adult pays child fee.</p>
<p>APRIL 18 TUESDAY 5:30 to 7:00 p.m. For adults</p>	<p>Science Pub LIVE: Communicating Conservation Through Art At Walter's Basin Restaurant: Doors open at 5:30 p.m., Presentation starts at 6:00 p.m. <i>Art for Water by Christine Destremes</i> In 2008, after learning that more than five million people die every day from preventable water-related diseases, Christine Destremes started Art for Water, a public-participation arts program to raise awareness of the shrinking availability of clean water. Over the next ten years, she created eight monumental programs engaging thousands of people through dialogue and art making. Christine will share information about the issues that inspired her, the work she created in response, and actions you can take to have a positive impact. Cost: No charge to attend but space is limited to 30. Advance registration is required.</p>

MAY

<p>MAY 1 MONDAY 9:30 a.m. to 5:00 p.m. For all ages</p>	<p>Trails Open! Join us for opening day of the 2023 trail season. The live animal exhibit trail and all hiking trails will be open to the public. Visit our new male black bear and our two new young mountain lions. See full details at nhnature.org Cost: \$24/adult; \$22/seniors (65+); \$18/youth (ages 3-15); free/children 2 and under; free/members</p>
<p>MAY 6 SATURDAY 9:30 a.m. to 5:00 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. Sponsored by: </p>

JUNE

<p>BEGINNING JUNE 1 THURSDAY</p>	<p>Kirkwood Gardens Plant Sale Plants will be available until sold out. The Kirkwood Gardens Plant Sale continues with perennials available for sale on the Bluestone Terrace of the garden. Come stroll through Kirkwood Gardens for inspiration and find beautiful new plants for your own garden. Sponsored by: </p>
<p>JUNE 3 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. Join Iain MacLeod to help with this year's survey, done primarily by ear, listening for the territorial songs of male birds, indicating probable nesting. This is a great opportunity to hone your bird song identification skills. 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. Cost: No charge to attend. Advance registration is required.</p>
<p>JUNE 23 FRIDAY 10:00 to 11:30 a.m. For all ages</p>	<p>StoryWalk™ Kickoff Reception <i>StoryWalk™ surrounds the Holderness Town Gazebo behind the Holderness Post Office at Curry Place.</i> Stroll along the channel as you read a fun nature inspired story posted one page at a time along the trail. Children can participate in a craft and enjoy a snack connected to the story at the Kickoff Reception. Presented in partnership with Holderness Library, Squam Lakes Association, and Holderness Recreation Department. StoryWalk™ is open daily from June 3-September 4. Cost: No charge and no reservations required. Sponsored by: </p>

SQUAM LAKE CRUISES

Bald Eagle Adventure Cruise

June 6 to June 27: 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 Cruise

May 20 to June 30: Daily at 1:00 p.m.

July 1 to October 13: Daily at 11:00 a.m. and 1:00 p.m. | Wednesdays, Saturdays, and Sundays also at 3:00 p.m.

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

Loon Cruise

June 9 to 23: Fridays at 3:00 p.m.

June 26 to August 25: 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 changes to maximize loon observations.

Cruise with a Naturalist

July 4 to October 5: 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 \$30; Senior (65+) \$28; Youth (up to age 15) \$26 - Not recommended for children under age 3.

Cruises may be cancelled if minimum attendance (4 passengers) is not met or for severe weather.

Members receive a \$4 discount per person.

Conveniently purchase cruise tickets online at nhnature.org

Squam Lake Charters

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

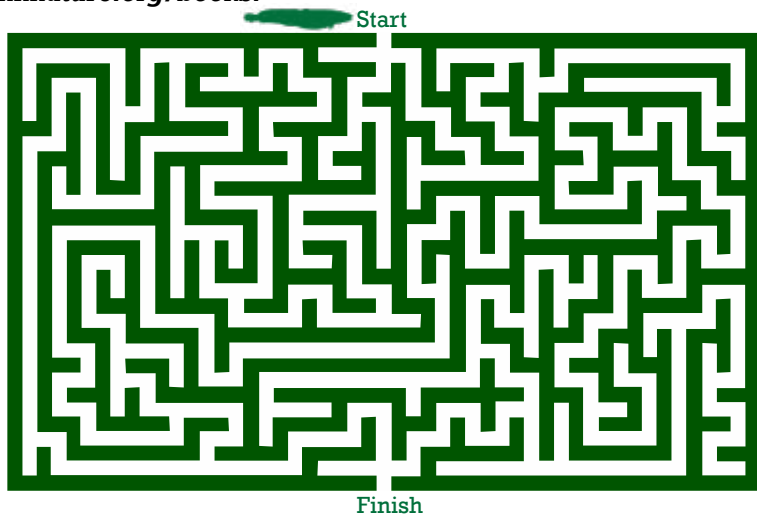
\$275 per hour per boat

KIDS ACTIVITIES

BARK RUBBINGS

Bark rubbings are a fun way to learn and record how different trees have different textures and patterns. All you need is plain white paper and unwrapped crayons. You can make your finished product into a colorful art display or identify and label the tree rubbings to make your own guide to tree bark. The great thing about making tree rubbings is it can be done in any season of the year.

This activity is from *50 Nature Activities for Kids* by Dave Erler, available in *The Howling Coyote Gift Shop* and at nhnature.org/books.



S	P	O	N	S	O	R	A	S	P	E	C	I	E	S
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Barbel

Burbot

Deciduous

Daffodil

Dormant

Membership

Mountain Lion

Solar

Sponsor A Species
Strategic Plan

MEMBERSHIP UPDATES

Membership Rate Increase

Buy or Renew your Membership by March 31, 2023 to lock in your 2022 rate! When you become a member at the Science Center you receive discounts on trail tickets, lake cruises, programs, and function room rentals. You'll also be the first to know about special Happenings at the Science Center. Be sure to take advantage of reciprocal admissions to hundreds of ANCA locations around the country and a few Bonus admissions right in New Hampshire and Vermont!

New membership rates effect April 2:

One-Person	\$60	Wetlands	\$250
Two-Person	\$75	Field	\$500
Four-Person	\$120	Forest	\$750
Six-Person	\$150	Mt. Fayal	\$1,000
Eight-Person	\$180		

Renew your membership at nhnature.org/membership

Family Access Membership

A 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 for \$25 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 for sale online.

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. Check with specific organizations for hours, directions, and any additional policies.

Remember as a Science Center member, you also receive discounted admission all year at participating ANCA organizations like VINS in Quechee, VT and Seacoast Science Center in Rye, NH. Visit nhnature.org/membership for details.

WEDDINGS AND PRIVATE EVENTS

Squam Lakes Natural Science Center opens its doors to the public as an outdoor venue to host weddings, engagement parties, rehearsal dinners, bridal showers, and other celebrations at two locations on our campus: Kirkwood Gardens and Fox Meadow (field located behind NH Fish & Game parking lot on Route 113).

“Kirkwood Garden provides the perfect backdrop for couples to exchange nuptials under the pergola and capture beautiful wedding photos,” said Joy Huke, Membership and Special Events Coordinator. “It also gives couples an opportunity to have a one-of-a-kind eco-friendly wedding while also supporting the animals and environmental education programs at the Science Center.”

Find us on the Wedding Wire and The Knot to learn more!



Photos by John Sabino Photography
@johnsabinophotography



Photos by Clark Brewer Photography, clarkbrewerphotography.com



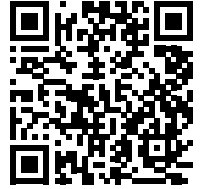
SPONSOR A SPECIES

Show your support for the animals at the Science Center by Sponsoring a Species! Our Sponsor A Species program has been completely updated to better reflect the animals and sponsorship goals of our supporters.

Animals available to sponsor include: Bald Eagle, black bear, bobcat, pollinators (butterfly), coyote, mountain lion, owl, and river otter. New this year is an e-sponsorship level for \$50 and live animal trail admission passes starting at the \$100 level.

“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,” said Executive Director Iain MacLeod. “The cost of caring for wildlife is considerable. All the animals need specialized diets, daily care, and creature comforts. When you Sponsor A Species your dollars go toward providing food, health care, housing, and enrichment for the animals.”

To see all the benefits of sponsoring your favorite animal visit nhnature.org/support or scan the QR code.



Visit the Howling Coyote Gift Shop when you are at the Science Center for a gift-ready Sponsor A Species package. Only available at the Howling Coyote Gift Shop at the Science Center while supplies last. Featured animals are black bear, mountain lion and pollinator and include original artwork from New Hampshire artist Hannah Ellington, plush animal, and trail tickets.

\$50 E-sponsorship Benefits

This all-digital sponsorship the most sustainable and includes:

- Digital thank you and photo
- Digital animal fact sheet
- Digital sponsorship certificate
- E-subscription to quarterly newsletter and monthly Happenings
- Recognition on signage on the live animal exhibit trail

\$100 Sponsorship Benefits

- Hard copies of all items in the \$50 sponsorship, newsletter subscriptions, *PLUS*
- Plush toy of sponsored species
- Two transferrable live animal exhibit trail admission passes

\$250 Sponsorship Benefits

- \$100 sponsorship *PLUS*
- *Nearer to Nature* book by Naturalist Margaret Gillespie
- Four transferrable live animal exhibit trail admission passes

\$500 Sponsorship Benefits

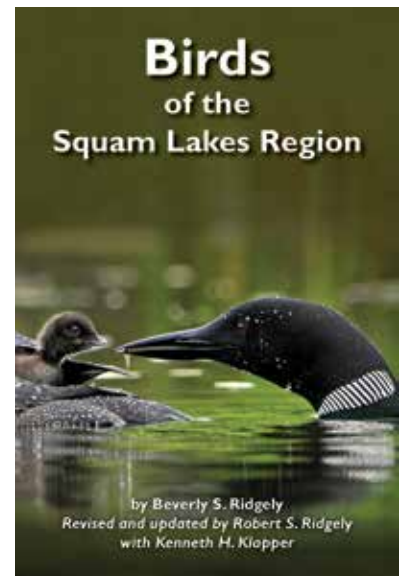
- \$250 Sponsorship *PLUS*
- *Birds of the Squam Lakes Region* book by Beverly S. Ridgely, Roberts S. Ridgely, and Kenneth H. Klapper



FROM THE ARCHIVES:

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

Naturalist Margaret Gillespie with students on the Marsh Boardwalk in the 1980s.



Be prepared for spring birding season with your own copy of *Birds of the Squam Lakes Region*.

Available at nhnature.org/books or in the Howling Coyote Gift Shop.

All proceeds benefit the Science Center.

TRAIL'S END

STRATEGIC PLANNING



Our new strategic plan for the Science Center is now in final form and as you may recall from previous columns, one of our most important priorities for the next several years is being top-notch caretakers of our animal collection. Our goal in this area is to showcase local species in engaging ways that increase understanding of their behavior and habitats, and teach about ways to ensure their well-being. In so doing, we want to exemplify humane, state-of-the-art animal care, enrichment and stewardship. These goals reflect the fact that the vast majority of our animal collection is comprised of creatures who for a variety of reasons (injury, orphaned) are not able to survive in the wild on their own.

As I think about this important area, I realize what a debt we owe to a number of ethologists – that is, the scientists who study and teach us about the lives, behavior, and worlds of our fellow animals. While still in college (which was MANY years ago), I learned about Jane Goodall – the pioneering observer of chimps in East Africa and now an internationally famous advocate for the natural world. That led me to learn about Dian Fossey (the gorilla expert) and many others in time,

including the wonderful E.O. Wilson whose research and writing about ants and related species is known and loved worldwide.

In various ways, the Science Center showcases many of the concepts that these and countless others have taught us – that animals have rich and complex emotional lives, that their capacity to communicate and work with each other is truly remarkable, and that as their stewards we owe them habitats and daily lives that are rich in experiences and opportunities to be themselves.

Thank you all for helping us in this overall effort. We are grateful to our visitors, members, and supporters every day.

Trail's End is written by Sarah Brown, Chair of Squam Lakes Natural Science Center's Board of Trustees.
You may contact her at sarahbrown1948@gmail.com.

LIFE IN THE DEPTHS *continued from page 1*

Knowing burbot and cod are in the same family, I was curious about their similarities, given the major difference of fresh versus salt water habitats. Looking at a cod fish, I immediately spotted the barbel on its lower jaw, pointing to the fact that cod are also bottom dwellers, feeling their way along the dark substrate in search of prey. Cod's spawning activity also takes place in winter and early spring when these fish lay an amazing number of eggs – up to five million. As with the burbot, many cod eggs go to support the aquatic food chain. Both fishes are formidable predators as well as being delicious entrées on a dinner plate.

On your next visit to a lake, take a moment to contemplate the world you are entering. It's a changing, inspiring place where creatures spend their whole lives or maybe just a season, a day, or a brief moment. There is always something new under the surface!



LIFE IN THE DEPTHS QUIZ

1. T or F? Burbot can live in fresh or salt water.
2. Burbot are closely related to: A. Eels B. Cod C. Perch
3. What structure on the burbot's lower jaw helps it feel items on the lake bottom?
4. In what season do burbot spawn?
5. How many eggs can burbot lay? A. 100 B. 1,000 C. 1,000,000

Answers:

1. False. Fresh water only. | 2. B | 3. Barbel | 4. Winter | 5. C

WISH LIST

For Exhibits: Genuine black bear rug

For Kirkwood Gardens: 1-gallon size or smaller plant pots; six to eight foot orchard ladder

For Lake Cruises: Waterproof flashlights (4)

For Animal Care: Gift cards to local hardware and grocery stores; gently used bath towels; natural material push broom heads; PVC pipe sections, connectors, elbows

For Operations: Forks and spoons for office kitchen; paring knives

For Intern Cottage: Working small or compact refrigerator; silverware; sharp knives

For Staff: Airline miles to attend professional development experiences



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