



MUSHROOM MYSTERIES

By Margaret Gillespie, Illustration by Cheryl Johnson

This mushroom story still makes me smile even years later. While at Cornell University, I lived with two other graduate students in an apartment downhill from campus. Each day on our walk home we passed a fraternity that I barely noticed. My roommate Cathy, however, spotted shaggy mane mushrooms on the broad lawn and during the fall she picked a crop daily, turning them into mushroom delicacies in our kitchen. One afternoon a fraternity brother sauntered out while she was harvesting and asked a simple question. With a sweep of his hand across the lawn he queried, "Are all these mushrooms edible?" Cathy replied slowly, "Some of them are," thus securing our mushroom supply for the remainder of our stay in Ithaca!

Shaggy mane mushrooms resemble the widespread perception of a typical mushroom - one with a cap and stem. In reality, mushrooms are fungi that grow in a variety of shapes including round, club-shaped or bracket-like to those resembling coral or even tiny cups containing what looks like eggs. These are all the fruitbodies of fungi, literally the tip of the iceberg. Beneath is a labyrinth of threads or hyphae which absorbs nutrients. It can extend for miles! If you turn over a rotting log, you will get a glimpse of



this expanding network in action. With the correct moisture and environment, hyphae generate into the familiar mushroom fruitbodies whose function it is to form spores that disperse on the wind. Spores germinate into new hyphae and renew the cycle. Let's take a closer look at three mushrooms you are likely to encounter. See if you can recognize them from the descriptions.

On many walks in the woods, I am intrigued by the brilliant yellow to orange color of a classic-looking cap and stem mushroom. Its cap flattens as it ages and is covered with light-colored flakes. A large ring, which originally covered the gills, now encircles the stem below the cap. Immediately I am reminded of the stories of toadstools - a term sometimes referring to poisonous mushrooms. Any guesses? If *Amanita muscaria* (Fly Agaric) jumps to your mind, you are right and yes, it is fine-looking but deadly for humans to eat.

On a morning after wet summer or autumn weather, these mushrooms seem to have inflated into giant white balls on a lawn. If they are still young, the inside when sliced is white and solid. When you come back a few days later, the outside is deteriorating and the inside is yellowing as the spores mature. A smaller relative, the size of a golf ball, has a pore in the top from which the

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FORGING TRAILS

NEW TECHNOLOGY BRINGS NEW OPPORTUNITIES AND NEW CHALLENGES

One of the keys to success in the natural science and interpretation business is keeping things fresh. Emerging (and emerged) technologies provide us with opportunities to innovate and invigorate. Over the last couple of years we have dipped our toes in the technology tide and now we are ready to immerse ourselves in the waves of web-enabled learning and the seas of social networking.

I find myself drawn to new technologies that broaden our audiences. Over the last few months we have really started to embrace what Facebook, Twitter and Flickr have to offer. The volume of people who use these social networking sites is astonishing and the sophistication of these tools and their ease of use is remarkable. Our Facebook friends are multiplying exponentially and it is gratifying to see interaction and two-way dialogue developing through

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FORGING TRAILS continued from page 1

the Facebook interface. Twitter is intriguing, although its applicability to Science Center functions is less obvious than other media. Flickr is a no-brainer. We have such photogenic subjects and great stories that are told best in photos.

Over the past two years we have explored the use of webcams in our animal exhibits. How cool would it be to view the otters or mountain lions in the middle of winter when the ice and snow makes our trails inaccessible to visitors? We seem to have finally found a camera system that provides a reliable image signal (wirelessly) to the server here, although inexplicable color loss and unplanned system resets are vexing. We tried to get the images live on our website earlier this year, but bandwidth is the next hurdle. It wouldn't do to go live with a webcam and then not be able to read incoming e-mails because someone viewed the Critter Cam!

Two separate, but connected, collaborative projects are steering us in new technologically-innovative directions. One project involves a partnership with our good friends at the Seacoast Science Center (SSC) and the Mount Washington Observatory (MWO), as well as colleagues at the University of New Hampshire. This ambitious project has resulted in the submission of a multi-million dollar proposal to the National Science Foundation to fund the creation of a series of exhibits and citizen science-based learning opportunities to explore the dynamic nature of change in our environment. These exhibits and activities would incorporate hand-held, web-enabled devices to enhance science learning.

Another project involves SSC and MWO but also includes the McAuliffe-Shepard Discovery Center. This project called "Sea, Lake, Summit and Sky" would embrace distance learning – allowing our programs to be viewed via the web in any web-enabled classroom anywhere in the world. This project just received a \$25,000 grant from the New Hampshire Charitable Foundation, which will allow the partners to prototype program content. What an amazing leap for us to share our very special natural science programs (enhanced by the outstanding program content of our partners) with a new enormous audience.

All this advancement has challenges: greater need for IT support, greater bandwidth access, staff training, and staff time. While there is no substitute for exploring our trails, observing our animal exhibits, being taught by one of our naturalists, or exploring the natural world, if we can use new technologies to enhance, expand, and enrich, but not replace, the "Science Center experience" then we will continue to be innovative and reach audiences that perhaps we never dreamed of reaching.

Forging Trails is written by Executive Director Iain MacLeod.

You may contact Iain at 603-968-7194 x 23 or iain.macleod@nhnature.org.

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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. Our 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 sent to all members. Comments about the newsletter are welcomed by newsletter editor Janet Robertson at 603-968-7194 x 12 or janet.robertson@nhnature.org.

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VOLUNTEER PROFILE

JENNIFER BRADY



Jennifer Brady starts her sophomore year at Inter-Lakes High School this fall. In conjunction with an independent study she was doing at Inter-Lakes, Jennifer volunteered through a cooperative learning experience at the Science Center from January through June 2009, under the guidance of Senior Naturalist Dave Erler. Afterward she applied to participate in our First Guides program where she joined a class of 14 other teens training with Volunteer Coordinator Carol Raymond and adult volunteer mentors. She lives in Center Sandwich and is an avid horseback

rider, competing in New Hampshire high school competitions.

Q: When was your first visit to the Science Center? What about it inspired you to become more involved?

I've been visiting the Science Center almost every year since I can remember. Naturally, I loved seeing the animals up close, but as I got older, I started to more fully appreciate that here was an entire organization, working for the good of our natural environment. The more I thought about it, the more I wanted to get involved, and I'm so glad that I did!

Q: Do you have any favorite moments or experiences while volunteering?

Everything! My volunteering experiences have been phenomenal. I've always loved nature and animals, but actually being able to participate in and learn about the Science Center has been a priceless experience. I'd like to thank Dave Erler and everyone else at the Science Center – I learned so much and did so many amazing things and wouldn't trade it for anything!

Q: What do you like to do in your free time?

Anything that has to do with nature! I feel so lucky to live here in the Lakes Region, with so much wilderness around me. I raise

moths with my dad most years and have learned a lot about the forests from him, since he majored in forestry in college. I'm on the Inter-Lakes Equestrian Team, am the junior leader in Club Sandwich Dog 4-H with my border collie, and just enjoy exploring the woods, taking walks, and swimming. And lately, volunteering at the Science Center!

Q: Why do you think it's important for children to have a strong connection to nature?

Learning about nature teaches children to care about something larger than themselves and to think about how their actions will affect others in a chain reaction. So many of my happiest memories have to do with the natural world – I couldn't imagine growing up without any connections to nature.

Q: Why do you think it's important for teens to volunteer?

By volunteering as a teen, I've found I feel much more connected to my community. It's given me a step into a new world, where I'm benefiting myself and others. I've learned a lot about myself, and it's helped me to organize my life more by having a given commitment that I knew I had to keep.

NEWSBRIEFS

◆ In June, we welcomed **Christine Cherry** as our new Marketing Manager. Christine attended the University of Southern Maine where she obtained a BA in Communications, and later attended Westminster College where she received her Utah State Elementary Education Credential. Over the years, Christine has worked in multiple capacities in both the business world and as an educator. She comes to us with experience as Marketing Manager for Aqua Systems, Inc., a manufacturer of heat exchangers for geothermal heating and cooling applications, as well as many years of teaching experience. She is excited to have the opportunity to incorporate her



experiences in both fields here at Squam Lakes Natural Science Center.

◆ Animal Care Assistant **Rachel Cilley** left her position in June to pursue graduate studies at the University of New Hampshire. We will miss Rachel's ready smile and enthusiasm for the Science Center's mission. **Tom Anderson**, (a 2008 summer intern) took Rachel's place starting in July. Tom studied animal management at the University of Rhode Island in Kingston, graduating last fall. Tom grew up in Laconia where his mom teaches math at Laconia High School. He worked at Cape May Zoo in New Jersey and Roger Williams Zoo in Providence during the past year.



◆ The First Guides teen volunteer program ends its premier season in November. Primarily a summer program, teens between the ages of 14 and 17 attended 12 hours of classroom training and gave another 12 hours assisting Guided Discoveries classes, making animal enrichment items, or helping adult docent volunteer mentors on the Gephart Exhibit Trail. Fifteen teens completed the training; two thirds of the teens live locally and the rest are summer residents from out of state. All expressed a keen interest in ecology and animals and several are considering a career in a related field. A new class will start in 2010. Registration information will be sent to local schools and posted on our website early next year. For additional information, contact Carol Raymond, Volunteer Coordinator.

◆ Training for new adult volunteers continues as well with 19 new adult volunteers joining the



NATURAL ADVENTURES



FULL MOON CRUISE

Thursday, September 3

5:30 – 7:30 p.m.

Ages 6 and up

With the end of summer approaching and fall about to begin, join Naturalist Eric D'Aleo for a special Full Moon Cruise on Squam Lake. We'll start by searching for loons on the water and bald eagles in the trees before we stop at Moon Island to enjoy a twilight trail walk. The rising moon will guide our return from this exceptional voyage back to the Science Center docks.

Cost: \$18/member; \$20/non-member

GARDEN DESIGN WITH NATURE

Thursday, September 10

4:00 - 6:00 p.m.

Ages 16 and up

Plan next year's garden now! Come to learn about using patterns and rhythms in nature as mentors so that landscape design becomes ecological, self-renewing, sustainable design. Mimicking natural ecosystems' structure and function, we create self-regulating ecologies that interact, cooperate, and depend on one another to sustain life. This is an opportunity to create low impact, self-maintaining ecologically responsible, livable landscapes. This program will be held in Kirkwood Gardens.

Cost: \$8/member; \$10/non-member

GREENING YOUR EXISTING HOME

Tuesday, September 15

7:00 - 8:00 p.m.

Adults

Join a representative from Plymouth Area Renewable Energy Initiative (PAREI) for tips to reduce the amount of energy your home uses. We'll discuss ideas such as energy-saving lifestyle tips, ways to locate air leaks, and energy-saving devices such as one that can recover heat from hot water going down your drain. The presentation at Squam Lakes Natural Science Center will also include a brief introduction to solar water heating. PAREI formed in 2004 to help Plymouth area residents and businesses prepare for an energy-constrained world. Their motto is "Plan Now for your Energy Future."

Cost: Free; No reservations required

UNDER THE SURFACE

Thursday, September 17

10:00 – 11:30 a.m.

Ages 6 and up

Ponds are great places that teem with wildlife, but much of the living world in a pond is below the surface! For this fun-filled adventure we will get our hands wet and explore below the surface of the pond in search of insects, crayfish, and more.

Cost: \$7/member; \$9/non-member



AUTUMN BEAVER BLITZ

Monday, October 12

9:00 a.m. -12:00 p.m.

Ages 6 and up

How many animals benefit from the beaver? We will canvas a local beaver pond to find evidence of as many types of animals, both large and small that utilize the work of this New Hampshire keystone species.

Cost: \$10/member; \$12/non-member

CREATURES OF THE NIGHT SKY

Friday, November 6

November 13 cloud date

7:00 – 8:30 p.m.

Ages 8 and up

Can you find a bear in the sky? Experience the fun of identifying animals in the stars! An expert from the McAuliffe-Shepard Discovery Center in Concord will guide us in locating special constellations that represent animals. We'll also visit with some live creatures that inhabit the planet Earth at night.

Cost: \$7/member; \$9/non-member

PROGRAMS FOR HOME SCHOOL STUDENTS

BE A SCIENTIST!

Ages 7-10 • 10:00 – 11:30 a.m.

November 12: Biology

December 10: Dendrology

January 14: Ecology

February 11: Ornithology

March 11: Mammalogy

April 8: Entomology

There are many different types of scientists – from Dendrologists to Ornithologists and don't forget Entomologists too! In this six-session series students will develop and test predictions and participate in and conduct experiments. Students will also learn how to use keys and books to identify the many living and non-living ecosystem components that make New Hampshire so unique. Each month the students will investigate a different scientific field of study and then become the scientists themselves. Program offerings are aligned with the New Hampshire Science Framework. One adult must attend with children for free. Each additional adult pays child fee.

*Cost \$9/member child; \$11/non-member child
Reserve all six programs for a discounted rate:
\$8/member child; \$10/non-member child per program.*

USING OUR FIVE SENSES

Ages 4-6 • 10:00 – 11:30 a.m.

November 12: Touch

December 10: Smell

January 14: Sound

February 11: Sight

March 11: Taste

April 8: Celebrate All Five Senses!

How do we understand and interpret the world? With our senses of course! Students will learn all about their five senses and then put them to work in this six-session series. Students will explore what types of information we get from each of our five senses and how important each sense is. We'll also review how animals put their five senses to use. Each month we will focus on a different sense and on the last day we will celebrate all of them! Program offerings are aligned with the New Hampshire Science Framework. One adult must attend with children for free. Each additional adult pays child fee.

*Cost \$9/member child; \$11/non-member child
Reserve all six programs for a discounted rate:
\$8/member child; \$10/non-member child per program.*



Reservations and advance payment required unless otherwise stated.

SPECIAL EVENTS

Autumn Festival Saturday, September 26

9:30 am

Enjoy live animal presentations and crafts for children at this enjoyable, family festival. Kids of all ages will enjoy an entertaining show of puppetry and music with Lesley Smith's Theatre of Life Puppets starring Sammy Snail in a "*Wild and Furry Puppet Adventure*" (www.sammysnail.com). Lunch will be available for purchase from Longhaul Farm. Volunteer docents will be on hand with live animal and props and help visitors learn what animals live in the pond by the new boardwalk.

Cost: \$13/adults, \$11/seniors,
\$9 youth (ages 3-15), 2 and under free.
No charge for members.
No reservations required.

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SCIENCE CENTER LAKE CRUISES



Pick your favorite of these 90-minute cruise options

EXPLORE SQUAM

Daily through October 18

Daily at 11:00 a.m., 1:00 p.m., 3:00 p.m.

Explore Squam is a 90-minute cruise on Squam Lake with something for everyone. Enjoy the pristine beauty of Squam Lake and the wonders of the area where *On Golden Pond* was filmed. View fall foliage of the Squam range from one of New Hampshire's most scenic lakes.

NATURE OF THE LAKES

Tuesdays, Wednesdays, Thursdays
through October 15

4:00 – 5:30 p.m.

This tour focuses on the science of the lakes and the creatures that make Squam their home. Explore the lakes with an experienced naturalist as we search for wildlife, including the Common Loon and Bald Eagle. We will observe loon behavior and communication first-hand. Learn about the interactions that occur among the lake, people, and wildlife as you take in the surround landscape. Come away with an enhanced appreciation and understanding of the lake and the wildlife that call it home.

	Member	Non-Member
Adult	\$20.00	\$22.00
Senior	\$18.00	\$20.00
Youth (Ages 3 - 15)	\$16.00	\$18.00
Ages 2 and Under	Free	Free

HALLOWEEN HOOT 'N HOWL



The most fabulously fun event of the season!

Enjoy an eerily entertaining 40-minute guided tour. Tours feature live skits with a seasonal theme and leave every 10 minutes, starting at 6:00 p.m., with the last tour at 7:30 p.m.

Come dressed in your best Halloween costume, but remember to be prepared for outdoor weather conditions. Following your tour, warm up with games and tasty treats.

Cost: \$8 member; \$11 non-members

Reservations and advance payment required unless otherwise stated.

LIFE ON SQUAM 2009 ANNUAL MEETING, GALA DINNER

The 2009 Annual Meeting of the Members of the Corporation of the Squam Lakes Natural Science Center was held on August 8, 2009 at the Science Center in Holderness. The minutes of the August 9, 2008 Annual Meeting were unanimously accepted and Treasurer Bruce Whitmore presented the 2008 Financial Report. Copies of the 2008 Annual Report were distributed for review.

Retiring trustees Charlie Cook and Helen Mathieson were thanked by Board Chairman Peter Wood for their dedicated years of board service. Trustees re-elected unanimously to serve three-year terms commencing with election were: John McRae of Center Harbor, Tashia Morgridge of Holderness and Portola Valley, CA, Bryant Tolles of Concord, Judy Webster of Holderness, Bruce Whitmore of Holderness, and Peter M. Wood of Center Harbor. Mark Goldstone of Newton, MA was also elected as a new trustee to serve a three-year term. Officers elected unanimously to serve one-year terms commencing with election, were: Peter M. Wood, Chairman, Nancy Beck, Vice Chair, Bruce Whitmore, Treasurer, and George Carr, Secretary.

These by-law amendments were approved by the membership: adopt term limits for trustees, allow trustees to officially attend meetings by telephone or other electronic means, change the quorum requirement for trustee meetings from seven to a majority of trustees in office, allow approval of trustee actions taken by unanimous

written or email consent, and adopt an indemnification provision to protect trustees and officers from possible lawsuits resulting from their good faith actions on behalf of the Science Center.

Executive Director Iain MacLeod recognized and thanked five staff members for their service: Mary Noyes (5 years), Brian Eaton (5 years), Amy Yeakel (10 years), Eric D'Aleo (15 years), and Dave Erler (30 years).

Steve Curwood was the Annual Meeting Keynote Speaker. He presented "A Conversation with Steve Curwood: Thoughts on How We Live on Earth." Steve Curwood is Executive Producer and Host of National Public Radio's Living on Earth. He shared the 1975 Pulitzer Prize for Public Service as part of the Boston Globe's education team. He is also the recipient of the 2003 Global Green Award for Media Design, the 2003 David A. Brower Award from the Sierra Club, and the 1992 New England Environmental Leadership Award from Tufts University. He is president of the World Media Foundation and a Lecturer in Environmental Science and Public Policy at Harvard University.

Topping off the evening, was a live auction and a catered dinner by Great Events Catering of the Common Man Restaurant family. Restaurateur Alex Ray was presented with the Horizon Award in honor of his exemplary philanthropic leadership in New Hampshire.



THANK YOU TO THESE "LIFE ON SQUAM" UNDERWRITERS:

GREAT ISLAND - Audrey Hillman Fisher Foundation, Tashia and John Morgridge, Public Service of New Hampshire, and Steve Woodsum and Anne Lovett; **HOAG ISLAND** - Warren and Paul Miller, Barbara and Beverly Ridgely, Jeanie and Bayne Stevenson, Jean and Murray Swindell, and Betsy and Bruce Whitmore; **MOON ISLAND**- Bea and Woolsey Conover, Helen F. Mathieson, Louise and Sandy McGinnes, and Winky and Dave Merrill; **KIMBLE ISLAND** - Nancy and Lawrence Coolidge, Leslie and Austin Furst, Diane Garfield and Peter Gross, M.D., Lorraine and Bob Kingsbury, Sandra and Carl Lehner, Jean Lovett, and Ravidia and Nat Preston; **BOWMAN ISLAND** - Bea and Tony Edgar, Chris and Mark Goldstone, and Henry E. Vittum; **CHOCORUA ISLAND** - Jane H. Choate, Judy and Allan Fulkerson, Helen and Dick Leaman, Pat and Tom McKearn, Susan McKimens, Mary Anne and John McRae, Suzanne and Peter Richards, Stonyfield Farm Organic, Carolyn and Bryant Tolles, and Marian and John Waldhausen; **LITTLE LOON ISLAND** - George Carr, Cormack Construction Management, Clara and Wade Fowler, Lori and Matthew Grady, Nancy W. Grady, MegaPrint, Barbara and David Preston, Sally and Gilbert Stewart, Jr., and Carol and John Thompson; **MOUSE ISLAND** - Dennis F. Healy, New Hampshire Colonials, Carol and Rob Stewart, Priscilla Thomas, and Mary Alice and Kent Warner.

We gratefully acknowledge the **GALA COMMITTEE** Nancy Beck, Andy Eaton, and Judy Webster, our devoted volunteers, our dedicated trustees and staff. **ADDITIONAL SPECIAL THANKS TO:** Steve Curwood, The Common Man Family of Restaurants, Lakes Region Tent & Event, Peter E. Smith Associates, and Venture Print Unlimited.

AUCTION DONORS - Boston Park Plaza Hotel and Towers, Jeanette Fournier, Peter Richards, Bob Ritz, Squam Boat Livery, Carol and Rob Stewart, and White Mountain Country Club.

WELCOME TO OUR NEW TRUSTEE, MARK GOLDSTONE



Mark Goldstone

Mark graduated from Boston University's School of Management in 1970.

He is the Senior Vice President of the D.L. Saunders Real Estate Corporation in Boston. He has the Certified Property Manager designation from the Institute of Real Estate Management of which he is an active member. He is also a member of and former director of the Rental Housing Association of the Greater Boston Real Estate Board.

He has overseen the management of a diverse portfolio of residential, commercial, retail, and industrial properties with combined values in excess of \$750 million and annual rental income exceeding \$70 million.

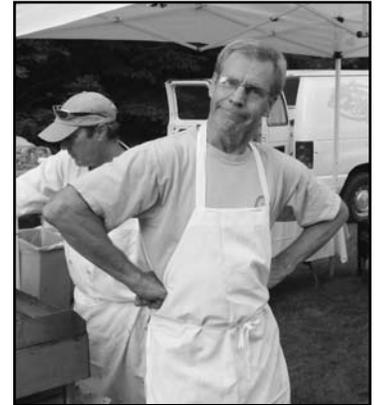
Over the past few years he has been responsible for the \$25 million renovation of the 950-room Boston Park Plaza Hotel.

Mark has been an active member of the Science Center's Buildings and Grounds committee and the Finance Committee. He has been particularly helpful with the insurance on the collapsed red barn and reviewing the Science Center's insurance policies.

Mark and his wife Chris live in Newton, Massachusetts and on Little Squam. They have three children, the youngest of whom is currently a junior counselor at the Squam Lakes Association. They have been members of the Science Center for more than 15 years.



Employees recognized for their service: Dave Erler (30 years), Eric D'Aleo (15 years), Mary Noyes (5 years), Brian Eaton (5 years), and Amy Yeakel (10 years)



Horizon Award Winner Alex Ray mans the grill



Retiring Trustee Helen Mathieson and Board Chairman Peter Wood



Board Chairman Peter Wood and Treasurer Bruce Whitmore



A lovely Gala table setting



Keynote Speaker Steve Curwood chats with Executive Director Iain MacLeod

NEWSBRIEFS

Continued from page 3

- volunteer corps since January. Among other activities, docent volunteers have hosted 13 Discovery Tables at local events through August. In July and August, volunteers also staffed the Admissions Member's Table and a Trailhead Greeter station assisting visitors, provided Otter Enrichment demonstrations three times a week, and Turtle Talks every Tuesday.
- ◆ Despite a rainy June and cooler than normal July, attendance has been strong. Our Facilities crew did a stellar job keeping trails and exhibits in shape and continues to improve trails with better drainage and water diverters and built several new bridges on the Ecotone Trail. Reconstruction of the marsh boardwalk started in July, first by building a bypass to reroute visitors during construction. We are raising funds to help cover the cost in a new campaign called "Build a Boardwalk." See page 10 for more information on how to dedicate a board to a friend, a family member, or yourself!
 - ◆ In June, the Science Center received a free set of conservation resources from the Institute of Museum and Library Services (IMLS). The contents of the "Connecting to Collections Bookshelf" were selected by a panel of conservation experts; it includes an essential set of books, online resources, and a user's guide to improve the ability of small libraries and museums to care for their collections. The collection will be added to the Unsworth Library.
 - ◆ High water levels in June meant the Science Center Lake Cruises launched from the NH Fish & Game docks from early June through mid-July instead of the docks by Walter's Basin – a logistical challenge well-managed by our Cruise staff. In June, Cruise staff attended two continuing education programs, one on biotoxins presented by University of New Hampshire Professor James Haney and another by Roger LaRochelle, Squam Lakes Conservation Society's Executive Director, about land protection in the Squam watershed. Three "Bald Eagle tours," led by Iain MacLeod in June were sold out. Similarly, the new Loon Cruises, in partnership with the Loon Preservation Committee, offered every Friday at 3:00 p.m. through August, were extremely popular. The naturalist-led *Nature of the Lakes* cruise on Tuesdays, Wednesdays, and Thursdays at 4:00 p.m. will continue through October 15 this year as will the three daily *Explore Squam* cruises through October 18. Cruise staff members are also busy with Sunday's Church Island shuttle, wedding charters, and group tours.
 - ◆ Come Play the Wild Animal Way, (formerly Animal Enrichment Day) was well-attended on July 15. There were new, as well as past favorite activities, which included the dig pit, making animal masks, enrichment demonstrations with some trail exhibit animals, and a special sale of animal art – limited edition art created by our animals, as a part of their enrichment activities. Each painting was in a beautiful hand-crafted frame made by trustees Laurie Beeson, John McRae, and Bruce Whitmore. Special thanks to our sponsor, Tootsie Roll Industries.
 - ◆ In September, members can take advantage of a special partnership with the McAuliffe-Shepard Discovery Center in Concord (formerly the Christa McAuliffe Planetarium). During September Science Center members are invited for one free visit to the Discovery Center (the number admitted for free is equivalent to number your Science Center membership allows). Take your membership card to show at the Discovery Center admissions desk. For directions and event schedule, visit www.starhop.com or call 603-271-7827. This offer is not valid on special event days or for planetarium shows.
 - ◆ Naturalist Beth Moore represents the Science Center on the New Hampshire Children in Nature Coalition board. This non profit organization will host a conference on October 1 and will provide resources, tools, and support to community leaders and organizations on ways to make change on a local level and to re-connect with nature. For more information, visit www.nhchildreninnature.org.
 - ◆ Thank you to Bill Driscoll Associates, Cross Insurance, and Tanger Factory Outlets for sponsoring our annual Volunteer Recognition Dinner on September 13. This year's dinner will be held onboard the M/S Mount Washington.
 - ◆ Autumn Festival is on Saturday, September 26. Kids of all ages will enjoy an entertaining show of puppetry and music with Lesley Smith's Theatre of Life Puppets starring Sammy Snail in a "Wild and Furry Puppet Adventure" (www.sammysnail.com). Longhaul Farm will offer lunch and farm vegetables for sale. Volunteer docents will be on hand with live animal and props and help visitors find out about the animals that live in the pond by the new boardwalk. Thank you to Community Guaranty Savings Bank of Plymouth for sponsoring this event.
 - ◆ Rachael Ray visited in July to film a segment for her show *Rachael's Vacation*, which will air early next year on Food Network.
 - ◆ Halloween Hoot N Howl is on Saturday, October 24. Call 603-968-7194 to sign up!

GREEN FACT

Here is one small thing that will make a big difference!

There is growing scientific evidence that over-the-counter and prescription medications and personal care products are finding their way into public water supplies. While non-metabolized medication is the primary source of this contamination, disposing of unwanted medications down the drain or in the trash has added to this problem. Here's how you can help:

- Do not flush unwanted or leftover drugs down the drain. This can lead to water contamination affecting fish, frogs, and drinking water supplies.
- Do not put unwanted medicine in the trash. It could be stolen and used unlawfully, potentially resulting in death or illness.

You may be able to take advantage of local opportunities to safely dispose of your unwanted prescription drugs at no cost. Check with your town or county government for information about community drug take-back programs or household hazardous waste collection events that collect drugs at a central location for proper disposal.

For more information see:

www.epa.gov/waterscience/ppcp/

www.whitehousedrugpolicy.gov/publications/pdf/prescrip_disposal.pdf

NATURALIST'S CORNER

WHY WETLANDS?

By Amy Yeakel

Why wetlands? They are just mosquito-filled places, not really good for anything, right? Not at all! Wetlands serve critical roles in the functioning and preservation of natural systems. According to the U.S. Fish and Wildlife Service's National Wetlands Inventory report from 2007, New Hampshire has 288,760 acres of wetlands, which includes components of river and lake systems. For a size comparison, Squam Lake is just 6,765 acres!

The functions these New Hampshire wetlands provide are numerous. Wetlands serve to strain and filter impurities from water. This function is particularly important near roadways and agricultural areas where run-offs are frequent. Wetlands are essential for flood protection because they hold extra water in conditions of high rainfall or excessive snow melt. In fact, when towns flood severely it is often because their surrounding wetlands have been compromised. Wetlands are also critical reproductive sites for amphibians such as frogs and salamanders. And yes, mosquitoes along with other insects reproduce there too – but don't forget these insects are wonderful food for many birds that use wetlands as resting places, migratory stopovers, or nurseries. Those many insects are also essential sources of food for fish, bats, and amphibians.

Keep in mind all these wild attributes of wetlands but also remember wetlands are super places to visit, observe wildlife, paddle, and experience the natural world around you. As you rest quietly in a wetland you may have the amazing opportunity to see a beaver swim by, a great blue heron take flight, or a dazzling dragonfly dance.



GARDENER'S NOTEBOOK



JOE PYE WEED

By Volunteer Joan Mayerson

A sign that summer is drawing to an end is the sight of Joe Pye Weed in bloom. Here at the Science Center you can find Sweet Joe Pye Weed growing in two areas - just past the main entrance outside the doors to the Howling Coyote Gift Shop and in Kirkwood Gardens located in the lower garden near the drive. A primary clue that you've spotted Joe Pye Weed is its height, while next you

may notice a large number of butterflies and bees hovering around the pinkish-purple blossoms as they seek out the sweet nectar.



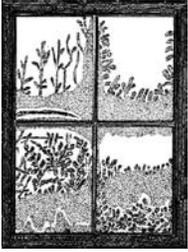
In the wild, this native perennial is found in damp areas, perhaps along a stream bank or in a moist field. The patch in Kirkwood Garden was planted where water puddles after a rain so the soil remains moist and it is positioned at the back of a large bed where its height

hides the driveway beyond and makes a good green backdrop for the bright annuals planted in front. And, best of all for gardeners, it does not require staking.

Joe Pye Weed belongs in the same family as the Yarrows and Asters - the Composite or Aster family, Asteraceae, which is a very large group. Joe Pye Weed flower parts have no rays as Asters do. Instead the closely-packed flowers are tiny tubular disks into which butterflies and bees dip their long tongues as they search for nectar. As with the Aster, its small flowers are many. There are several species of *Eupatorium* including these three: Sweet (*E. purpureum*), Spotted (*E. maculatum*), and Hollow (*E. fistulosum*). All are found in most states and provinces east of the Rockies.

Are you wondering about the name? Joe Pye is reported to have been a Native American medicine man who peddled this plant to settlers in northern New England as a remedy for typhus and other fevers in the 1700s. As these settlers learned more about the plant, they gathered it themselves to use for all kinds of medical problems.... rheumatism, backache, neuralgia, and 'dropsy,' among them. Its genus name, *Eupatorium*, recognizes Mithradatus Eupator, King of Pontus in Asia Minor, who ruled in 115 BC. King Eupator discovered that one species of this plant was a good antidote for a then commonly used poison. He ate (or drank) it regularly to protect himself from being poisoned!

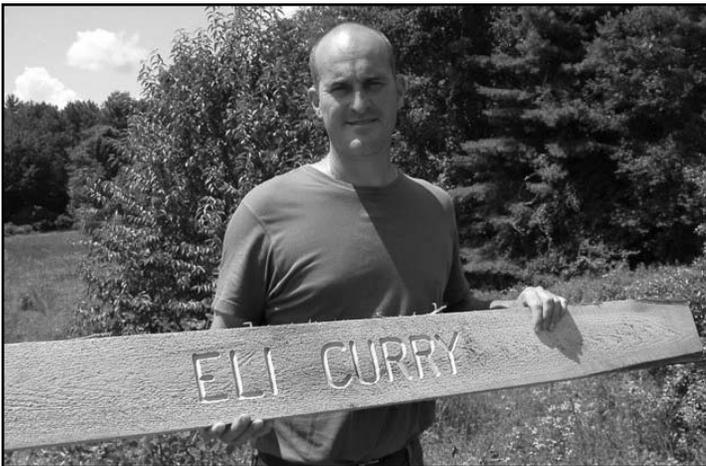
*Gardener's Notebook and Kirkwood Gardens are sponsored by the Belknap Landscape Company, Inc.
www.belknaplandscape.com*



OPENING A WINDOW TO THE NATURAL WORLD

Join the Wetlands Walk “Build a Boardwalk” project by purchasing a cedar board with a dedication routed on it! The boardwalk is part of our Gephart Exhibit Trail and runs from the floating board walk (that crosses the marsh pond) back to the exit trail. This walkway was last repaired 20 years ago and needed to be replaced. As part of the reconstruction, 36 support posts were replaced with timbers milled from a locust tree removed from Kirkwood Gardens last fall (for safety reasons). Locust is a perfect timber to use in this wet location, and we expect it will last more than 50 years. All of the decking is cedar and should last for 20 years.

For \$45 per board you can be part of the Wetlands Walk Boardwalk. Each six-foot by six-inch board has space for up to 20 characters in one line. Characters will be three inches tall and inscribed across the middle of the board. More than 400 boards are available. Use your imagination and have fun!



Tim Curry shows a board inscribed with his son's name

To order your board, call 603-968-7194 or see www.nhnature.org. For additional questions about the Build a Boardwalk project or your order, please contact Janet Robertson at janet.robertson@nhnature.org or 603-968-7194 x 12.

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

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NATURALIST'S LEGACY SOCIETY

If you have already named the Squam Lakes Natural Science Center through your will or other estate plans, please let us know. As a member of the Naturalist's Legacy Society, you will be invited to donor recognition events and recognized in the Annual Report, unless you prefer to remain anonymous. Recognizing planned giving donors allows us to express our appreciation and may also inspire others to give support through their own estate plans.



TRAIL'S END

OUR SUPERB STAFF – THE SCIENCE CENTER'S SECRET WEAPON

Early in July, my wife Jo Ann and I attended a Q&A panel, held in the Tamworth Pavilion, for some of our major donors. The theme was “Ask a Naturalist” and the audience was asked to think up esoteric questions to “stump” the experts – Dave Erler and Margaret (‘Tiggy’) Gillespie of our own staff and a special guest and friend of the Science Center, Rick Van de Poll, all ably ‘emceed’ by Iain MacLeod. Although the questions ranged from loons to snakes, from coyotes to mountain lions from deer to kestrels – I could go on – not once was the panel “stumped.” We didn’t even have to resort to the reserve questions and had to close out the session long before the audience, and the panel, had run dry.

Then, a couple of weeks later, on an overcast and somewhat rainy day, (sound familiar?) I took my grand nieces and nephews to the Science Center (ages 8-13, about whom I wrote in my last Trail’s End). Not only were they entranced by the trail, but they were mesmerized by the helpfulness of all the staff and volunteers with whom they came in contact, ranging from Mary Ellen Downing of the Howling Coyote, to Dave Erler (again!) who put the Beaver through his paces in the amphitheatre.

It would be invidious to single out all the many who made that visit so memorable, but it did serve to underscore what a secret weapon we have in our staff who often toil behind the scenes unsung. Starting with Iain MacLeod, who happened to be outside the Welcome Center, to Amy Yeakel, Janet Robertson, Christine Cherry, and Sarah Milnor, waiting patiently outside Kirkwood Gardens with umbrellas at the ready to greet Rachael Ray, to Tim Curry and Clare Eckert working on the boardwalk renovation – the list could go on and on. We have a wonderful asset in our staff and volunteers. Don’t forget it and thank them on your next visit! I know I often forget and it takes a visit like this to remind me how first rate we are.

*Trail's End is written by Peter M. Wood, Chairman of the SLNSC Board of Trustees.
You may contact Peter at 603-968-7194 x 27 or peter.wood@nhnature.org.*

MUSHROOMS from page 1

spores emerge like smoke when disturbed. Did you solve the mystery? These are puffballs – round mushrooms with no stems – the Giant Puffball (*Calvatia gigantea*) and the Tumbling Puffball (*Bovista plumbea*).

Exploring by an abandoned beaver pond, you see that remnants of chewed stumps are now festooned with layers of small fan-shaped bracket fungi that have semi-circular patterns of light and dark brown. Do they remind you of part of a turkey’s anatomy? Yes, these are turkey-tail polypores (*Trametes versicolor*)! Turkey tails grow on stumps that are at least three years old.

If the conditions are right for mushrooms, you can find a multitude of different shapes, sizes and even smells! Mushroom odors range from pleasant fragrances like cinnamon, almond, or apricot to downright nasty ones akin to decaying carrion, rotten cabbage, or bad ham. Another intriguing aspect of mushrooms is the diverse way spores are arranged – they are produced by a structure called a hymenium, which may be located along gills or in pores on the underside of the cap. The hymenium may also be on the surface of the fungi – coral-like fungi for example – or in the

case of the cups with egg-like structures, the hymenium is enclosed within “eggs” that splash out when hit by rain water. A fun project with children (and also an important identification technique) is to collect some spore prints from cap and stem mushrooms. Using just the cap of a fresh mushroom, place the gill or pore surface down on paper. Cover it with a bowl and overnight the spores will be deposited on the paper making an intriguing spore print! Spores can come in several colors from white to brown to black so you may need to experiment with light and dark paper.

It is tempting, as we walk through the forest, across a field, or even in our backyard, to focus solely on the visible part of mushrooms. Take time to contemplate the teaming mushroom network beneath our feet. Some mushrooms form associations with trees which are beneficial to both. Called mycorrhizal relationships, the fungus assists the tree in getting water and nutrients and in turn receives sugars from the tree. Other mushrooms break down organic material like fallen trees, thus recycling nutrients for other living things. Still others can be parasitic. All are part of the fascinating diversity and complexity of mushroom lives. So, remember to stop and smell the roses but also stoop to sniff the mushrooms growing underneath!



Calvatia gigantea



Trametes versicolor

The Howling Coyote Gift Shop

has a variety of nature-themed games and activity books to help entertain, educate, and enrich your family and friends.

One of our best sellers, **Earthopoly**, is a game celebrating Earth, one turn at a time. Players become the caretakers of wondrous locations around the planet, and then increase their property value by collecting Carbon Credits and trading them in for Clean Air. So choose a token, *(all made by nature of course!)*, and advance to Go Green.



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MUSHROOM QUIZ

1. **True or False?** The largest part of the mushroom is above ground.
2. **Which of these animals eats mushrooms?**
A. Squirrels B. Deer C. Turtles D. All of the above
3. ___ology is the study of mushrooms and other fungi.
4. **True or False?** Poison from mushrooms is absorbed through your skin.
5. **The equivalent of a seed in a mushroom is a _____.**

ANSWERS:

1. False. The visible part of the mushroom is the fruitbody while the major network of fungal threads is underground. 2. D. 3. Mycology 4. False. Ingesting them is the threat. 5. Spore

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