

SQUAM LAKES NATURAL SCIENCE CENTER

Winter 2010

P.O. Box 173. Holderness. NH 03245

AN UNCONVENTIONAL OWL

By Margaret Gillespie, Illustration by Cheryl Johnson

When you think of owls, what words fly into your mind? Are any of these on your list - nocturnal, forest, hooting? For many owls, these words fit perfectly; but the snowy owl of the Arctic tundra is adapted for an extreme environment, and many of the conventional truths about owls simply do not apply! Let's explore

more about snowy owls and how they can survive on a wind-whipped land with winter temperatures that dip way below zero degrees Fahrenheit.

The snowy owl, Bubo scandiacus, is named for its northern origins. As an Arctic circumpolar species, it was first observed by scientists in Scandinavia. It is one of our largest owls, with a wingspan close to five feet and a weight ranging from 3.25 pounds to about 6.5 pounds. Of course, the white feathers provide camouflage on a white landscape; but males and females can be distinguished by a difference in plumage - very unusual in owls. Males become progressively whiter as they age whereas females retain many more distinctive dark bars and spots. Immature birds also have dark barring, with the young females being the darkest. So "snowy" can be quite a variable color in these owls. The genus name, Bubo, references its close relationship to the great horned owl. Until recent DNA studies detected this connection, snowy owls were in their own genus, Nyctea. So where are the feather tufts as in the "horned" owl? Snowy owls have greatly reduced feather tufts which are rarely visible.

In order to stay warm, snowy owls have a dense layer of insulating down feathers, overlaid by the body's contour feathers. Feathers also cover their beaks, protecting the nares (nostrils), and extend over their feet and talons. Thick foot pads provide additional protection. According to the website Hinterland's Who's Who (www.hww.ca/index e.asp), the body temperature of snowy owls can be 100 to 104 degrees Fahrenheit while air temperatures are minus 58 degrees!

> What time of the day are snowy owls active? Remember that these owls live in the "land of the midnight sun," so at some times of the year, being nocturnal is just not an option! They are well adapted to being diurnal in their Arctic homeland. A close look at their eves reveals a projecting upper eyelid that protects

Snowy Owl

move into New England in winter may be crepuscular (active at dawn and dusk) or nocturnal. However, our Executive Director, Iain MacLeod, has found that many snowy owls retain their diurnal habits here in the northeast. He discovered one that frequented New Hampshire's Rye Harbor State Park, perching on picnic tables to feed. Leftovers included remnants of two horned grebes, a red-throated loon and at least one white-winged scoter. Since these birds swim

Continued on page 8

their eves from the

sun. Those owls that

FORGING TRAILS

KISSED BY A WOLF

As director of the Science Center I get to do some fun things; things that most people don't get a chance to do. The recent visit by a pack of wolves resulted in one such occasion. For those of you who could not make the Mission: Wolf program on October 16, you missed a really special opportunity to learn about the important role that wolves play in the balance of nature, the perils of owning wolves or wolf/dog crosses, and the thrill of being up close to these beautiful and charismatic animals.

I've known Kent and Tracy Webber, founders of Mission: Wolf, for at least a decade and had brought them to New Hampshire three times in the past for programs at Audubon Centers. Each fall for the last 22 years, Kent and Tracy and some ambassador wolves have left their remote refuge in Colorado and toured the country in their adapted bus. The current bus—their third—now has half a million miles on it. This year, they brought four wolves and a wolf/dog cross on their East Coast tour. Turns out they came to the Science Center 15 years ago—before our most recent name change—and only realized it when they got here and recognized the surroundings. Continued on page 2

FORGING TRAILS continued from page 1

After an indoor slide program introduction, we all headed to the Bluestone Terrace outside the Webster Building where everyone had a front row seat to an extended wolf playtime which culminated in a communal wolf howl. Three of the wolves were adolescents who, like dogs, were full of mischief and energy. Magpie, the old alpha female was quick to keep them in line and doled out snarl-filled reminders of who is boss.



I get an enthusiastic "hello" from Magpie.

New Hampshire law prohibits direct public contact with the wolvesnot the case in most other states apparently—so Kent and Tracy made sure that the wolves did not get within touching distance of the public, but they were able to designate a couple of our staff and volunteers as Mission: Wolf volunteer greeters and some of us had a chance to say hello in true wolf fashion. A proper wolf greeting involves them

tasting your teeth. In a pack, the teeth of a returning member communicate if there is food to be had. When our pet dogs—which evolved directly from wolves—want to lick your face in greeting, they too are "tasting" where we have been.

I had a particularly enthusiastic "hello" from Magpie. She and I had met five years ago on a previous New Hampshire visit and I have a photo in my office of her checking my teeth back then. Kent was sure that she remembered me and wanted to give me "good to see you, where have you been . . . and what did you have for breakfast?" greeting.

What a thrill!

Forging Trails is written by Executive Director Iain MacLeod. You may contact Iain at 603-968-7194 x 23 or iain.macleod@nhnature.org.

NEWSBRIEFS

- Executive Director Iain MacLeod and Education Program Director Amy Yeakel traveled to Wisconsin in August to attend the Association of Nature Center Administrators fourday conference held at Treehaven, a residential natural resources education and conference facility.
- Naturalist Beth Moore attended (and coordinated) the New Hampshire Children in Nature Coalition conference in Hanover in October. The conference focused on the health benefits of outdoor play, including obesity prevention. Dr. Tory Rogers, a pediatrician and Director of the Kids Coop in Maine, was keynote. Other workshops covered topics such as natural playgrounds, school gardens, working with local land trusts, story
- walks, quests, and walking school buses. The conference was based in the Upper Valley in order to highlight local projects, which conference attendees visited afterwards.
- Squam Lakes Natural Science Center exhibited at the fall New Hampshire Science Teachers Conference held at Attitash Grand Summit Resort in Bartlett on October 25, with over 200 science teachers in attendance.
- Education Program Director Amy Yeakel attended the New England Environmental Education Alliance annual conference in Fairlee, Vermont in October. Amy presented on the status of environmental literacy plans in New Hampshire. The conference was attended by over 200 people.

Continued on page 3

SQUAM LAKES NATURAL SCIENCE CENTER

PO Box 173, Holderness, NH 03245 Phone 603-968-7194 Fax 603-968-2229 e-mail: info@nhnature.org web site: 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. 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 distributed to all members. Comments are welcomed by newsletter editor Janet Robertson at 603-968-7194 x 12 or janet.robertson@nhnature.org.

BOARD OF TRUSTEES

Lawrence E. Beeson, Chairman Nancy G. Beck, Vice Chair Bruce G. Whitmore, Treasurer John Fernandes, Secretary

> Alexandra T. Breed George Carr Margaret Conver Andrea Eaton Alan T. English, Ph.D. John W. Gephart, Ph.D. Mark Goldstone **Arthur McGinnes** Susan McKimens John McRae David F. Martin David Merrill Tashia Morgridge Michael O'Leary Robert Ritz Robert N. Snelling Bryant F. Tolles, Jr., Ph.D. Judith C. Webster Peter M. Wood

> HONORARY TRUSTEES
> David W. Cote, D.V.M.
> Bertha H. Fauver
> Maurice Lafreniere
> Paul F. Miller, Jr.
> Russell C. Orton
> Barbara T. Ridgely
> Stephen G. Woodsum

STAFF

Tom Anderson, Animal Care Assistant Dennis Capodestria, Facilities Assistant Christine Cherry, Marketing Manager Tim Curry, Facilities Director Eric D'Aleo, Naturalist Mary Ellen Downing, Retail and Admissions Manager Brian Eaton, Finance Director Clare Eckert, Facilities Assistant Brenda Erler, Gardens and Exhibits Assistant Dave Erler. Senior Naturalist Margaret Gillespie, Naturalist Bev Heyduk, Finance Assistant Ron Huntoon, Maintenance Project Assistant Tom Klein, Operations Manager Iain MacLeod, Executive Director Susan MacLeod, Café Manager Laura Mammarelli, Preschool Director Jordan McDaniel, Associate Teacher Katie Mokkosian, Animal Care Curator Beth Moore, Naturalist Lauren Moulis, Animal Caretaker Mary Noyes, Administrative Assistant Carol Raymond, Volunteer Coordinator Janet Robertson, Development and Communications Director Liz Rowe, Operations Director Dean Smith. Facilities Assistant Susan Stepp, Development Assistant Amy Yeakel, Education Program Director

STAFF PROFILE



CAROL RAYMOND VOLUNTEER COORDINATOR

Tell us about your background.

The natural world has been important to me for as long as I can remember. My parents emigrated from Newfoundland

where knowledge of nature and the environment was not only a part of life; it was a matter of survival. Growing up in Newton, Massachusetts, and spending summers on Lake Winnipesaukee, observing and interacting with nature was an integral part my family's lifestyle. I have many memories of being outdoors all the time – swimming, hiking, playing in the snow, digging in the earth. Many years later while living in Brooklyn, it was interesting to me to see the interaction between nature and people. It fascinated me to see the variety of unexpected wildlife living in the city, as well as how important and highly utilized natural areas such as parks are to city dwellers.

Most of my work life has been in the book business as a manager and buyer in Boston, New York City, and New Hampshire.

However, in 2007 I saw a help wanted ad in a local newspaper for a Volunteer Coordinator for the Science Center. I had spent many wonderful afternoons visiting the Science Center with my two children, Dylan and Oriana; I jumped at the opportunity to work here.

What is the best thing about your job?

Most people point to the animals as a highlight. For me, though, as much as I love the animals, it's the people. I feel privileged to work with volunteers who share a love of and dedication to nature and the Science Center. I never cease to be amazed by how generous volunteers are with their time and willingness to help in so many ways. It's humbling and rewarding to work with such extraordinary people in such a dynamic place. I appreciate also the work my predecessors accomplished in setting up a strong volunteer program. The dedication and commitment of volunteers speak, in part, to the strength of the program. The staff is a group of individuals who work beautifully as a team. I am continually thankful for their support and assistance.

It's fun to see the Science Center change and grow. I remember the previous bear and fox exhibits, as well as the turtle "pond" near the deer exhibit. Since I became Volunteer Coordinator, there is the new wetlands boardwalk, upgrades to the Gordon Children's Center, a geology exhibit in the making, and the new exhibit of Marty and Joyce Briner's hand-carved birds. This year, the vision of a nature preschool has been realized, adding yet another dimension to all the Science Center has to offer. While in the book business, I enjoyed the connection bookstores have to the community. At the Science Center, that connection is multifaceted and exciting to be a part of.

NEWSBRIEFS continued from page 2

- Development and Communications Director Janet Robertson attended the Council on Fundraising's conference in October at Southern New Hampshire University called "Tools to Make Your Development Efforts Soar" where Holly Ross, Executive Director of the Nonprofit Technology Network was keynote.
- Operations Director Liz Rowe attended the Northern NH Tourism Conference in November. She participated in workshops on "Exceeding Customer Expectations" and "Using 'Curb Appeal' to Increase the Bottom Line."
- ♦ This year the route of the public Explore Squam lake cruises was changed to go the opposite direction from previous years and to exclude the "Golden Pond" house viewing. This decision provided a better route in case of rough winds, which normally prevail from the west, and also allows a better view approaching the eagle nest on Little Loon Island. This change was well-received by both Tour Captains and passengers

- and we also have additional time to cover more nature-based information.
- ♦ This year's Autumn Festival on September 25 was well-attended and generously sponsored by Community Guaranty Saving Bank. The event featured a presentation by Michael Caduto and food was provided by Longhaul Farm.
- Halloween Hoot N Howl took place on October 23rd's cold, moonlit night. Four live skits, including "Dr. Lichenstein," "Freddy Fungus," "Project Wildway," and "The Heron and the Hummingbird" campfire story were enjoyed by 300 attendees, many in costume. Special thanks to Moultonborough Girls Scout Troops 10896, 12269, 10093, and 10062 for carving the jack-o-lantern pumpkins decorating the trail. We also thank you our wonderful volunteers and these contributors of food and supplies: Dunkin Donuts, Ashland; Golden Pond Country Store, Holderness; Hannaford Supermarket, Meredith; Holderness General Store, Holderness; Longview Farms, Plymouth; Moulton Farm,

- Meredith; Shaw's, Gilford; Tootsie Roll Industries.
- ◆ Fall Raffle winners were drawn on November 1. Thank you to these generous business sponsors for donating wonderful prizes: luxury weekend stay donated by Boston Park Plaza Hotel and Towers, Old Town kayak donated by Squam Boat Livery and Quiet Water guidebook donated by Innisfree Bookshop, four rounds of golf donated by Owl's Nest Resort and Golf Club, Crescent Moon adult snowshoes donated by Rhino Bike Works, Mountain Lion painting by Rosemary Conroy donated by Studio Buteo, two Alpine lift tickets and two Nordic trail passes donated by Waterville Valley Resort, and two Alpine lift tickets donated by Loon Mountain Recreation.
- New this year, the Gephart Exhibit Trail will be open on Saturdays from 10:00 a.m. to 3:00 p.m., with the last admission at 2:00 p.m., from November 6 through December 18, weather permitting. There will be a \$2 discount on non-member admission

Continued on page 4

NEWSBRIEFS continued from page 3

fees. Normally the trails close for the year on November 1 and reopen May 1. During the winter, offices remain open on weekdays. Programs for the public and schools are offered year round. See our website, www.nhnature.org for a calendar of events.

♦ The Howling Coyote Gift Shop will have nine holiday shopping days in December. Stop by on Thursday, Friday, and Saturday, December 2, 3, 4, 9, 10, 11, 16, 17, and 18 from 10:00 a.m. to 3:00 p.m. each day. There are great gifts for all ages. If you can't make it on these days, please call ahead and on most days we can arrange to open the gift shop for you. And remember, gift memberships, honorary donations, or Sponsor-A-Species make perfect holiday gifts!



Frozen lakes make skating and fishing come to mind for many. Many winters I have explored the frozen, snowy lakes and ponds of the area by ski or snowshoe. Last year however, was a great time to explore just the ice before we had lots of snow cover. My family and I enjoyed slipping and sliding along its surface—dog pulling ahead and children in sleds behind. There were wonderful frozen fissures of amazingly clear ice where you could peer down; trying to see some sign of life below. What does the ice mean for all the life of the lake? The lakes do not shut down in winter but rather they are very much alive under the frozen layer! From tiny microscopic plankton to fish there is activity. Many insects that you recognize, such as dragonflies and mayflies, start their life in the water and actually overwinter there. The crayfish and newts of summer are there too. Many frogs and basking turtles of summer are now snug in the muck at the bottom getting all the oxygen they need to survive the winter from the oxygen supply dissolved in the cold water. All these creatures are what are often referred to as "cold-blooded." meaning their body temperature changes to match the surrounding water temperature. The frozen icy surface provides a barrier where temperatures below are actually above freezing, at about 39 degrees Fahrenheit. Otters swim below the surface in search of tasty fish, surfacing to dine right on the ice. While beavers stay warm and cozy in their lodges, they too venture into the chilly waters to gather meals from nutritious green twigs they stored in the cold water. Rest assured, below the couple of feet of ice you walk across, life is in full swing!





LET'S GO OUTSIDE

"It's a water holiday!" exclaimed Laura Liebert in October at the Blue Heron Preschool. The children were outside learning about land, water, and air and the rain made it easy for naturalist Margaret Gillespie to introduce water concepts to the group.

Blue Heron Preschool is a new program. Twelve children are enrolled in this five-day-a-week preschool, which runs from September to June. Using the Montessori approach, the school finds lessons in the fields, forests, and wetlands at the Science Center.

Rain or shine, the children are eager to go out. Listen in on some of our adventures.... We hiked to the stream where we saw water striders and frogs, and we waded in the stream. We also caught water dripping off the roof, stomped in puddles, and created dams and streams with sand. We explored land when we hiked through the thicket, with lots of roots and vines, and climbed over the big boulder. On a sunny, breezy day we threw milkweed seeds into the sky and let the wind carry them away, to experience air.

The next week, Naturalist Eric D'Aleo took the children out to focus on sight. We looked for different shades of brown in the pine grove. Then we went to the lawn, climbing under and over the split rail fence to collect all of the different colors of leaves we could find. As the children trooped through the rain, Eric taught them his duck song, with lots of quacking in the chorus. Wet and happy, the children went home to dry off and enjoy hot cocoa, sharing their adventures with their parents.

For an application or more information about Blue Heron Preschool, please contact Education Program Director Amy Yeakel at amy.yeakel@nhnature.org or 603-968-7194 x 14.

VOLUNTEER UPDATE

VOLUNTEER RECOGNITION DINNER - PARSONS AWARD



Iovce Hackett

Beautiful views were the backdrop at Waukewan Golf Club for the 2010 Volunteer Recognition Dinner on August 26. Three businesses generously sponsored the event: Bill Driscoll Associates, Cross Insurance Agency, and Tanger Outlet Centers. Bob McCarthy entertained volunteers during the opening reception with quitar music. This was followed by an "Oscar Awards" themed buffet dinner provided by caterer Jennifer Buzzell

of Grammy Gordon's Bakery. We thank Waukewan Golf Club for giving discounted golf to volunteers for the remainder of the season

Board Chairman Laurie Beeson honored Joyce Hackett as the Parsons Award winner. Although Joyce was not present to receive her award, she has been an active volunteer since 2001 when she joined the docent program. Joyce especially enjoys demonstrating artifacts to trail visitors. Her special interests are mountain lions and bears, representing the Science Center at local Discovery Tables, and mentoring new docents and First Guides. Joyce also enjoys volunteering for special events and doing research for special projects. Through 2009 she has donated over 700 hours. Joyce's name was chosen from a group of other eligible volunteers: Jim Barry, Nick Bennett, Chris Bird, Dot Chekas, Lisa Davis, George DeWolf, Fran Fernandes, Karen Firmin, Carol Foley, Clara Fowler, Allan Gavan, Eileen Gosselin, Sara Harris, Patricia Heinz, Pat James, Susan Jayne, Eva Karcher, Susan Kemp, Dan Kemp, Esther Marshall, Peggy Martin, Missy Mason, Susan McKimens, Connie Morrison, Denise Moulis, Joe Oustecky, Diane Potter, Katrina Rosa, Nance Ruhm, Olivia Saunders, Julian Shlager, Jean Shlager, Judy Sniffen, Pam Stearns, Carol Stewart, Sydney Stewart, Susan Stepp, Shirley Stockwell, Carolyn Tolles, Jan Welch, Marc White, Betsy Whitmore, and Bebe Wood. The Parsons Award was created in 1996 by the Board of Trustees and honors longtime volunteers Natalie and Don Parsons. Joyce is the fifteenth recipient of the Parsons Award, representing the spirit of volunteerism for her colleagues.

The President's Volunteer Service Awards is a national program honoring volunteers who embrace the spirit of volunteerism and inspire others through their commitment and example. The Bronze Service Award, for volunteers contributing 100 to 249 hours in 2009, was presented to Dot Chekas, George DeWolf, Nancy-Jane Duncan, Pat James, Eva Karcher, Diane Potter, Judy Sniffen, Carol Stewart, Sydney Stewart, Carol Thompson, and Bebe Wood. The Silver Service Award was presented to Jim Barry and Natalie Parsons for contributing between 250 and 499 hours of service.

Executive Director Iain MacLeod recognized the contributions of docent mentors in 2010. Seventeen docent mentors guided the training of 37 docent trainees and First Guides, about three times the usual number of trainees. Iain also thanked First Guide teen volunteers for participating in a new volunteer program which began in 2009 through support from the Bea and Woolsey Conover Fund of the Lakes Region division of the New Hampshire Charitable Foundation.

The Volunteer Appreciation Display "Volunteers Complete the Picture" in the Trailhead Gallery was created in 2004 to honor volunteers by recognizing total hours donated. Volunteers who achieved the 200 hour level in 2009 include Gail Coolidge, George DeWolf, Susan Kemp, Granthia Preston, and Marc White. Volunteers advancing to 500 hour level were Julian Shlager and Bruce Whitmore. John McRae moved to the 1,000 hour category.

In 2009 a total of 7,400 hours were donated by 205 regularly scheduled volunteers and an additional 400 hours were given by 155 volunteers for single events. Using \$20.85 as the value of a volunteer "hour' (a standard set by a coalition of non-profit organizations), this translates to \$162,630 worth of in-kind services. We thank all our volunteers for their enormously important dedication and contributions!



- 1. What do we call a group of owls? A. Festival B. Parliament C. Convention
- 2. True or False? Owls in northern regions hibernate during the winter months.
- Owls are on every continent except _
- 4. What can scientists collect to study what owls are eating?
- 5. Which sense is not well developed in owls? C. Smell A. Sight **B.** Hearing

hair that is regurgitated by owls and other birds of prey 4. Pellets—an undigested mass of food, mostly bone and I. B 2. False 3. Antarctica **YUSWERS:**

FOLLOW THE SCIENCE CENTER ON facebook





> NATURAL ADVENTURES



ICE AND STONE -THE SHAPING OF SQUAM

Saturday • December 11 9:30-11:30 a.m.

Age 14+

The Squam landscape has undergone dramatic changes over geologic time, most recently 20,000 years ago, when the last continental glacier flowed across this area. Let's discover traces of the massive ice sheet by searching for clues on the rock ledges and shoreline around Squam Lake. Find out how these forces are still at work today, altering the land and the lake itself.

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

BIRD BANDING OPEN HOUSE

Saturday • January 8 9:00 a.m.-12:00 p.m.

Age 6+

For over 30 years on the first Saturday following the New Year we have captured and banded birds at a feeding station here. Drop in any time during the morning and learn from Dave Erler about the process of bird banding and get a close hand look at some winter birds. Adult must accompany children.

Cost: Free/member; \$5/non-member

BIRD IDENTIFICATION SERIES: WINTERING RAPTORS

Sunday • January 16 8:00 a.m.-5:00 p.m. Age 14+

Bundle up and join Iain MacLeod for a coastal adventure in search of wintering raptors. This field trip to the New Hampshire coast and the Parker River National Wildlife Refuge on Plum Island, Massachusetts will likely feature Snowy Owls, Short-eared Owls, Rough-legged and Redtailed Hawks, Bald Eagles, Northern Harriers, and maybe Merlins and Peregrine Falcons.

Cost: \$30/member: \$40/non-member

GOWILD WITH CRAFTS

Saturday • January 22 10:00-11:30 a.m. Families, Ages 5+

Let's have fun with natural materials and learn about nature through crafts. We'll make animals from milkweed pods and pine cones, designs from seeds and nuts, and much more. A highlight will be meeting a creature that depends on its own wild creations to survive.

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

ANIMAL TRACKS AND SIGNS

Saturday • February 5 10:00 a.m.-12:00 p.m.

Age 8+

Winter is a great time to get out and explore for evidence of wildlife. We will begin indoors to review the basics of following a trail and then head outdoors to search for animal tracks and signs. Snowshoes available at no extra cost if conditions warrant.

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

SNOW STORIES

Wednesday • February 9 9:30-11:00 a.m.

Age 6 and under

Bring the young and young at heart to enjoy a winter story. We will also explore this magical season outside through your young child's eyes. Adult must accompany children.

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

BIRD BANDING

Tuesday • March 1 Friday • March 4 10:00 a.m.-12:00 p.m.

Age 6+

Are you looking for a chance to see wild birds up close? Come find out how and why we capture and band birds at the Science Center's feeding station. Learn why bird banding is an important tool for scientists and see wild birds up close. Adult must accompany children.

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

COPING WITH THE COLD: WINTER BIRDS

Wednesday • March 2 10:00 a.m.-12:00 p.m.

Age 8+

Have you ever wondered why some birds migrate south while other birds stay here through the cold winter months? Come and learn which birds can be seen throughout the winter and find out about the adaptations that help them survive the cold. Enjoy activities, meet a live non-migratory bird, and creat imaginative treats you can take home to help bring winter birds to your yard.

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

Limited space available; reservations and advance payment required unless otherwise noted.

Programs are subject to cancellation if minimum enrollment is not met.

HOMESCHOOL **PROGRAMS**

ALL ABOUT SERIES

Ages 2-6 • 10:00-11:30 a.m.

January 6 Skunks

February 3 Groundhogs

March 3 Owls

April 7 Turtles

Learn all about New Hampshire wildlife. Each session will consider a different group of living things through activities, hands-on experiences, and a meeting with a live animal!

GET HAPI!

Ages 7-10 • 10:00-11:30 a.m.

January 6 Interrelationships

February 3 Populations

March 3 Habitats

April 7 Ecosystems

The primary interpretive focus of the Science Center's programs and exhibits is community ecology, which has four major concepts: Habitats, Adaptations, Populations, and Interrelationships (HAPI). Join us with your child to investigate these topics in depth.

All Homeschool Programs are aligned with the New Hampshire Science Framework. One adult must attend with children for free. Each additional adult pays same fee as child.

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





WILD WINTER TOUR: GUIDED WALKS OF THE GEPHART EXHIBIT TRAIL

Saturdays • January 15 and 29 • February 19 and 26
March 12 and 26 • 10:00 a.m.-12:00 p.m.
Sundays • January 9 and 23 • February 6 and 27
March 20 • 1:00-3:00 p.m.
All Ages

Do you ever wonder what happens to the animals at the Science Center during the winter? Most of them stay in the same place. Come and see them in all their winter glory. A staff naturalist will guide your walk on the Gephart Exhibit Trail and discuss the many ways native animals are well-adapted for winter life in New Hampshire. Be ready to snowshoe and see how beautiful a wild animal's winter coat can be! Snowshoes available at no extra cost if conditions warrant.

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

NATURE TOURS

LEAVE THE SNOW BEHIND

Are you looking for someplace warm to visit during the long, cold winter? You can travel to exciting nature destinations and support Squam Lakes Natural Science Center by booking your next trip through our partner Nature Treks & Passages (NT&P), a New England travel business located in Bryantville, Massachusetts. NT&P donates a portion of their fees to Squam Lakes Natural Science Center from any trip booked by our members. Upcoming trips include Copper Canyon birding trip; Mata Ortiz: Northern Mexico birding and Mata Ortiz pottery; birding in Alamos: tropical deciduous forest and Rio Mayo; and Alaska: Denali to the Sea, Colombia, and more. Contact NT&P at 781-789-8127 or e-mail info@naturetreks.net. Include your Squam Lakes Natural Science Center membership number when you book your tour and thank you! www.naturetreks.net

SCOTLAND NATURE TOUR JUNE 2011

Join Iain MacLeod for a spectacular trip to Scotland's most northern lands—the remote islands of Orkney and Shetland. This 10-day trip, from June 12–21, 2011, will explore the wildlife and history of these beautiful islands. Highlights will include spectacular seabird colonies—including more Puffins than you can shake a stick at, Otters, Grey Seals, a night-time excursion to the island of Mousa to watch Storm Petrels in the Iron Age broch, and a visit to Skara Brae, Europe's most complete Neolithic village. Price: \$3,500. See the complete itinerary at www.naturetreks.net.



OPENING A WINDOW TO THE NATURAL WORLD

2010 ANNUAL FUND APPEAL

Because of your loyal commitment we continue to be a strong and vibrant organization even through this economic downturn. We are proud that we are achieving our mission—to advance understanding of ecology by exploring New Hampshire's natural world—through new and innovative ways, as well as the tried and true.

In August 2010, our combined trail admissions, programs, lake tours, and outreach touched more than 20,600 people, the highest one-month total in at least the last seven years. Our outstanding staff and dedicated volunteers, docents, and interns rose to the challenge and worked tirelessly to ensure that all our visitors and program participants had the best experiences possible.

Your contributions allow us to explore new partnerships and opportunities. Here are just three examples either underway or planned:

- ♦ In September, we opened the Blue Heron Preschool, a nature-based Montessori early learning center and New Hampshire's first nature preschool. The preschool integrates the educational philosophies of Maria Montessori with nature-based education to allow children to interact with the natural world every day. Four-year old Laura Liebert of Ashland summed it up on the rainy first day of school, "I'm so excited. I just love it when it rains. I just go outside and jump, jump, jump."
- We are forging ahead with the grant-funded, and now pilot-tested, Sea to Lake, Summit to Sky distance learning project in collaboration with the Seacoast Science Center, Mount Washington Observatory, and the McAuliffe-Shepard Discovery Center.
- In 2011, with partners from New Hampshire and North Carolina we will launch a project using state-of-the-art satellite transmitters to track the migrations of young Ospreys from the Lakes Region to South America and back. A new school program complementing the Osprey project, integrating ecology, bird migration, geography, and weather, will be developed for New Hampshire schools.

We hope these programs and projects—tried and true, innovative and new—will inspire your continued investment in the Squam Lakes Natural Science Center, through a generous gift to our 2010 Annual Fund. Your support, at any level, makes a difference. This year's Annual Fund has a goal of \$270,000 by year's end. If you have not already sent your contribution, please consider making a new gift or increasing your gift this year—or donate online at www.nhnature.org. Thank you for your support!

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.

OWL continued from page 1

and dive for food in the ocean off the point, Iain surmised that the snowy owl nabbed them as they surfaced. These prey would not be too large to handle as snowy owls have been recorded catching great blue herons at Logan Airport in Boston.

Living virtually without trees makes a snowy owl's life very different from that of most owls. The ground is the nesting spot of choice, although these owls prefer rises in land like hummocks or large boulders. Availability of food, particularly lemmings, determines how large the brood will be, varying from 12 eggs to four to none! Lemmings are small Arctic rodents closely related to voles, and their populations can fluctuate significantly. For reasons that are not clear, lemming populations peak approximately every four years and then plummet. The website The Owl Pages (www.owlpages.com) informs us that "nestling snowy owls require about two lemmings per day and a family of snowy owls may eat as many as 1,500 lemmings before the young disperse!" When lemmings are scarce, owls will also prey upon hares, muskrats, squirrels and other small mammals as well as birds like ptarmigan and ducks. Snowy owls defend their nests vigorously and will even attempt to lure predators

away from their ground nests, much like ruffed grouse and killdeer do, by pretending to have a crippled wing.

What about sounds? Snowy owl males do hoot during the breeding season, but they also have a variety of other calls which seem strange coming from an owl. Both males and females produce a loud, strident bark as well as shrieks! When not nesting, these owls are quite silent.

If this is an Arctic owl, why do we see them in New England in winter? Some stay on the Arctic tundra for the winter. Others migrate to more southern parts of Canada in areas resembling their homeland-prairies, marshes, lakeshores and fields. Still others, mainly birds in their first year, come further south into New England in search of food. We see them along our coastal marshes, airports and even inland, perched on pasture fence posts or even on top of town buildings. A well-known spot to view snowy owls is just across the New Hampshire border in Newburyport, Massachusetts, at the Parker River National Wildlife Refuge. To get a view of possible prey, snowy owls prefer to perch on a raised outlook like a dune, dock, or driftwood, so if you go on an owl prowl, check these spots carefully. You might even catch one hovering in the air, scanning the landscape. Seeing a snowy owl is an exhilarating experience - maybe like a breath of fresh Arctic air!

SUSTAINABLE LIVING ADULT LECTURE SERIES

BUTTON-UP HOME ENERGY SAVING WORKSHOP

Wednesday • January 19 • 6:30 p.m.

Join us for this informative session led by Bob Tortorice (Certified Home Energy Rater HERS, BPI, MBA, CGB, CGP) of Building Alternatives. Bob Tortorice is a highly qualified and experienced home energy expert who will introduce the basics of home energy budgets and the value of home weatherization through this presentation by Clean Air-Cool Planet and the New England Carbon Challenge. Learn how simple household adjustments and modest investments can lead to significant energy savings over the long haul. Workshop topics will include: residential heat use and loss, short term benefits of simple do-it-yourself weatherization, the value of a professional home energy audit, long term benefits of extensive professional energy retrofits, and technical and financial resources available to make it happen.

CONSUME LESS AND MAKE YOUR OWN ELECTRICITY FROM SUNSHINE

Wednesday • February 16 • 6:30 p.m.

Jim Gamble from Greensource Energy Solutions in Concord will share ways to you can easily reduce your electrical consumption and save money. Learn about reducing phantom or vampire loads (including how to find and measure them), lighting (CFL and LED), Energy Star, energy saving surge protectors, and The Energy Detective (TED). Jim will inform you about different types of solar photovoltaic systems, "off" and "on" grid, and how they work. Find out how to make your own electricity from sunshine!

MAKE YOUR OWN HOT WATER FROM SUNSHINE

Wednesday • March 16 • 6:30 p.m.

Are you tired of hearing your expensive furnace running just to heat water? This practical session led by Jim Gamble of Greensource Energy Solutions in Concord will teach you how to produce your own hot water for domestic use and home heating. Domestic hot water uses about 30% of your energy bill. Learn about different systems (panels and evacuated tubes), how they work, and evaluate which type is best for your home. Learn about efficient backup systems; as we know the sun doesn't shine everyday. We will also cover the financial aspects such as rate-of-return, break even point, financing options, and federal and state financial incentives.

All programs in this series are FREE, but please call to reserve your space.

603-968-7194

This series is co-sponsored by







GARDENER'S NOTEBOOK



WHAT'S THE NEIGHBOR DOING UP IN THE APPLE TREE?

By Eric D'Aleo

The sky is gray, the temperature's dropping and the idea of spending time outside in the garden is probably the furthest thing from your mind. However, there is yard work during winter that can alleviate cabin fever as well as benefit your plants. I'm referring of course, to pruning, particularly apple trees.

If you're like most home owners with an apple tree in the yard, you probably have one that was planted with the idea of producing fruit. However, many people have trepidations when it comes to pruning and have no clear idea of how or when to prune. Added to what seems a daunting task is concern about killing the tree, confusing terminology, improper tools, and lack of knowledge. Homeowners interested in growing fruit often avoid pruning. This was my case until several years ago when I was determined to do "something" about the apple tree in my yard. Now, four years later, I'm not completely comfortable pruning but I am learning. I've attended a pruning workshop, talked to friends and relatives, researched on the internet, and have experienced a lot of trial and error with mixed results.

The tools necessary for the job are quite simple: a pair of pruning shears, loppers, and a pruning saw that are sharp and well maintained. The time of year you prune has a direct effect on the results. Pruning in late winter, before spring growth starts, restricts the time that fresh wounds are exposed before new growth begins the wound sealing process. It's also easier to see the shape of the tree in winter when the foliage is down, so pruning decisions are less complicated. However, one drawback to winter pruning at this time of year, which I've experienced, is that in spring the tree produces vigorous vegetative growth (water sprouts) with little or no fruit production. The same result can occur if a mature or neglected tree is pruned back too "hard." With these trees it's best to prune them over a three- or four- year period to restrict excessive vegetative growth.

Pruning after the buds begin to grow in the spring and into early July also has its challenges. Although pruning then can reduce the amount of vegetative growth afterward, it may increase the chance for infection and bacterial disease. For this reason it's recommended that spring and early summer pruning be limited to removing the upright and vigorous current season's growth and only making thinning cuts.

When pruning an apple tree, remember to keep in mind why you are pruning. A tree grown to produce fruit requires different cuts than a tree that is used for ornamental purposes. When pruning for fruit production first remove any dead, diseased, damaged, or dying branches; then



remove branches that cross or rub against each other. Any branches that grow vertically, straight down, or toward the tree's center should be removed, since horizontal branches grow more fruit than vertical branches. Fruit trees grown by homeowners often are picked by hand, so the form of the tree is important to prevent the weight of the fruit from breaking the limbs as well as making it easy to reach (a spreading tree is easier to reach fruit than a vertical one). Cut branches at the point where one branch attaches to another, but avoid cutting the branch collar, (the distinctive bulge at the base of the branch, where it connects to the trunk). Remember that apples flower and fruit on old wood, so cut the terminal shoot of new growth to direct energy back to the flowers and fruit. Reduce the height and spread of any branches that have grown too large by cutting them back to a vigorous lower branch whose diameter is at least one third of the diameter of the branch that is being removed. In order to avoid excessive regrowth after pruning the safest way is to spread the work over two or three years rather than one "hard" pruning.

The goal in pruning is to thin out enough new growth to allow light to filter into the canopy when the tree has leafed out so the fruit can ripen and color properly. How do you know when to stop? The rule of thumb is to only remove about one third of a tree's canopy when pruning.

For additional information on pruning apple trees:

apps.rhs.org.uk/advicesearch/Profile.aspx?pid=90 eap.mcgill.ca/CPTFP_7.htm

www.ces.ncsu.edu/depts/hort/hil/ag29.html

 ${\it extension.unh.edu/resources/representation/Resource000582_Rep604.pdf}$

ohioline.osu.edu/hyg-fact/1000/1150.html

www.weekendgardener.net/how-to/prune-apple-trees.htm www.thisoldhouse.com/toh/video/0,,20053952,00.html (nice

general overview of pruning)

 $www.youtube.com/results?search_query=stephen+Hayes+apple+pruning&aq=f$

(Stephen Hayes from the UK has various videos to watch giving the backyard orchardist a lot of information to consider)

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

GOOD BUSINESS:

SUPPORTING SQUAM LAKES NATURAL SCIENCE CENTER

We are grateful for the vital community support provided by many businesses across the state through memberships, sponsorships, and in-kind contributions of goods and services. Corporate support helps to sustain the education programs and services here.

Business Members

Nine companies were business members in 2010: Belknap Landscape Company, Grappone Automotive, Finishing Touches, Pike Industries, Public Service of New Hampshire, Rockywold-Deephaven Camps, Spider Web Gardens, Stonyfield Farm, and Walter's Basin.

Business Sponsors

These 2010 business supporters sponsored events and publications: Belknap Landscape Company, Common Man Restaurant, Community Guaranty Savings Bank, Cross Insurance Agency, Dead River Company, Bill Driscoll Associates, Grappone Automotive, Lovering Volvo, MegaPrint, Meredith Village Savings Bank, New Hampshire Electric Co-op Foundation, Nobis Engineering, Public Service of New Hampshire, Riveredge Marina, Rockywold-Deephaven Camps, Samyn D'Elia Architects, Squam Boat Livery, and Tanger Outlet Centers.

In-Kind Contributors

An average of \$50,000 of in-kind contributions of goods and services are given annually. In-kind gifts were received from these businesses in 2010: Appletree Nursery, Belknap Landscape Company, Bishop & Davis Builders, Bob's Shurfine Market, Boston Park Plaza Hotel & Towers, Bound Tree Medical Company, Cackleberries Garden Center, Charles River Laboratories, Chick-A-Dee Station, Coca-Cola Bottling Company of Northern NE, Common Man Restaurant, Country Ladybug Greenhouse, Country Landing, Country Sketches by Cheryl Johnson, Dion's Plant Place, Dirty Worm Greenhouse, Dunkin Donuts, Emma's Perennials, Forever Green, G4 Communications, Gallery at Red Gate Farm, Gilford Cinema 8, Golden Pond Country Store, Hannaford Supermarket, Hart's Turkey Farm Restaurant, Hillside Meadow Agway, Holderness General Store, Home Depot, Innisfree Bookshop, Keene Medical Products, Lakes Region Tent & Event, Little Church Theater, Longview Farms, Loon Mountain Recreation, Martignetti Companies, MegaPrint, Moulton Farm, Mountain Laurel Flower Shop, Owl's Nest Golf Club, Palace Theatre, Petal Pushers, Picnic Rock Farms, Plymouth Animal Hospital, Precision Lumber, Rhino Bike Works, Shaw's Supermarket, Paul E. Skipper Stoneyard, Simple by Nature, Spider Web Gardens, Squam Boat Livery, Squam Lake Inn, Stonyfield Farm Organics, Studio Buteo, Tootsie Roll Industries, Tuckerman Brewing Company, True Colors Print & Design, Tylergraphics, Van Berkum Nursery, Venture Print, Village Greenery, and Waterville Valley Resort.



RENEW YOUR MEMBERSHIP ONLINE AT **www.nhnature.org**

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.



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

Say "No" to road salt and "Yes" to alfalfa meal and other alternatives! According to the National Research Council, we Americans dump from 8 to 12 million tons of salt on our roads every year. This is hazardous to the surrounding ecosystems. Road salt is highly toxic to our beloved pets and wild animals. Not only does salt affect animals, but it also influences soil structure, water quality, and roadside plants and causes corrosion of bridges and cars. However, there are safe alternatives. Alfalfa meal is a natural fertilizer that melts ice and doesn't have a negative effect on the environment. And as always, sand and good snow tires can provide a great source of traction. If we use both alfalfa meal and sand, our actions will improve the quality of the nearby ecosystems on those icy days.

For more information about road salt and its effects, see www.sedona.biz/sustainable-living1407.htm. www.vinegartips.com/scripts/pageViewSec.asp?id=7

TRAIL'S END

Most of us know organizations that talk about their "families." The Science Center is in a league of its own relative to familyness, and one newish part of our physical plant puts that in perspective for me.

Two summers ago we asked members to help underwrite a new boardwalk for the wetlands by buying individual planks in which we'd carve their message. At the time I thought it was a quirky fund-raising ploy that wouldn't amount to much. Boy was I wrong! Every last board has been subscribed and inscribed.

Now when you "walk the walk" you see an amazing display of who's who in our towns: grandparents and grandkids, dogs and granddogs.....songs and ditties that have meaning to a family.....college cheers....anniversary dates...."working titles" of kids yet to be born.... and names of long-passed but hardly forgotten parents and friends.

All these people, all these families, spent good and valuable money to have their loved ones' names etched on a walkway deep in the heart of the Science Center. In his book, Campsteading, sometime-local author Derek Brereton talks about "sense of place." For many of us, the Science Center is a focal point of that sense, that place; a geographical reference point for our family's New Hampshire experience. The boardwalk blows me away every time I see it.

Just two weeks ago we hosted a "Mission Wolf" presentation for three sold-out crowds. I saw lots of young parents and lots of kids who – if we do our jobs right – will hold the Science Center in the same regard as do the people whose family remembrances populate the boardwalk.

Filming the wolf presentation was our Marketing Manager, Christine Cherry. Just this week, Christine had a baby boy, Jake. Iain sent around a note with this good news, and a twenty-year history of which active-duty staff members had had kids, and when. (Not every organization has that kind of tribal memory!) Perhaps there will be a spot for Jake's name on a future Science Center commemorative site.

By the way, the planks are made of cedar and the majority of the supports were milled from locust trees grown right on the campus. It'll be here for a long time.

Trail's End is written by Laurie Beeson, Chairman of the SLNSC Board of Trustees. You may contact Laurie at 603-968-2409 or lbeeson@worldpath.net.

We are grateful for these memorial and honorary gifts received from July 1 through September 30, 2010:

In memory of Ellen Bennett John T. Bennett, Jr. Anne and William Rogers

In honor of Bea and Woolsey Conover's 50th wedding anniversary Nancy and Roger Mackay

In memory of Mary Smith Denison Mr. and Mrs. William F. Dewey, Jr.

In memory of Josiah H.V. Fisher

Dale Carnegie Training

Robert Johnson, MD

Sarah H. Norris

Pauline Little Waldron

In memory of John C. Gabriel
Margaret and Ryan Edward

In honor of Liz and Bev Lapham Candace and John Marsellus

In memory of Charles Lynch Ruth and Daniel Berg Margaret Berkowitch Jennie and Thomas Burke Donna and Richard Carmody

Cotton Cove Friends: Mrs. Jason Beveridge Stacy and Mike Boothroyd Linda and Corie Brookshire Matt, Tamela, Alexande and Ian Buzza Carol and Anthony Ciullo Lynn and Gene Ferrick Libby and Kevin Ferrick Elaine and John Gorman Rachael and Mark Gorman **Pat and Russ Goss** Cynthia and Marty Hirschorn Gloria and Dennis Kaslander Janet Loehwing Beth and Steve O'Connell Mary Lynn Sharp Maureen and Craig Weeden

Marie Coyle
Robin and Philip Cudmore
Dale and Charles D'Agnese
Kathleen and Stephen Danahy
Christine and James Donahue
Fran and John Fernandes
Carol and Nicholas Ferreri
Caroline and Thomas Ferreri
June and Ben Guay
Janet Hammonds
Sally and Carl Hooker

Barbara and Samuel Kessel Sarah Lawrence **Douglas Maitland** and Duncan Maitland **Fay Curtis McCluney** Sue Morse Patricia and James Rosicky Jean and Louis Ruotolo Saugus Garden Club Dale Shannon **Paul Sherry** Nicole and John Solet Janet and Bob Stevenson Judith and John Sylvester Cindy and Jack Taymore **Elizabeth and Larry Tingley** Sandra and William Trakat Anne and David Winograd

In memory of Donald Parsons
Nancy Parsons
and James McDermott
Natalie Parsons
Donna Parsons
Susan Parsons

In honor of Daniel V. Scully

Audrey O. Cass

WISH LIST

For Blue Heron Preschool

Wall clock Coats and boots Stadium blankets Standing floor lamp Clothes drying rack

For Animal Care

Food processor Little Tyke™ or Playskool™ plastic toys Digital camera

For Facilities

Utility golf cart Trailer for riding lawn mower **Dehumidifiers** Electrical outlet and wall plate insulators

For Special Events

Card tables 6- or 8-foot plastic folding tables

The
Howling Coyote
Gift Shop

Floliday

Sale

Thursday-Saturday 10:00 a.m.-3:00 p.m.

December 2, 3, 4 December 9, 10, 11 December 16, 17, 18





www.belknaplandscape.com

Design/Permitting Construction/Masonry Grounds Management/Arboriculture Irrigation/Landscape Lighting **Winter Management**



Village West Unit 302 25 Country Club Road Gilford, New Hampshire 03249 (603) 528.2798

2009 New Hampshire Business Review Cornerstone Gold Award Winner for Landscape Lighting

Celebrating 20 years of Landscape Excellence

DSMUISAUDA OFZOOS **ASSOCIATION**

ACCREDITED BY THE

Printed on Crushed Cream paper 50% recycled, 30% post-consumer waste

03245 Holderness, NH Permit No. 1 **TAM** U.S. Postage Non-Profit Org.

Return Service Requested HOLDERNESS, NH 03245 P.O. BOX 173, 23 SCIENCE CENTER ROAD SQUAM LAKES NATURAL SCIENCE CENTER