



IN THE GROUND AND UNDER THE SNOW: THE WOODCHUCK'S STORY

By Victoria Brown, Naturalist



No matter how much we love nature and wildlife, we do have negative connotations toward some species while others we take for granted. We either fight the mice, racoons, and bears off our property, or ignore the more common visitors such as crows, sparrows, and chipmunks. Although it's valid to want to stay safe and keep wildlife out of our homes, it is our duty to know as much as we can about these common animals to best coexist with them. Preconceived notions and popular myths can sometimes be funny, but can also cause unnecessary harm to ourselves and to the animals that are so important to the ecosystem.

This brings me to one of my favorite animals that we love to hate. The one we say, "Aww" to, but promptly chase out of our yards. The one that has an entire day dedicated to it in February. I'm referring to the woodchuck, of course, also known as groundhog, ground squirrel, whistle pig, or more formally, *Marmota monax*. Groundhog Day is a tradition most often attributed to German immigrants who came to the United States and held on to a legend from the Middle Ages that badgers and bears would come out of hibernation on February 2 to indicate a shorter or longer winter. The tradition adjusted from badgers and bears to woodchucks and the rest is history. Although this tradition is not based on scientific evidence, there are endless fun tidbits to chat about when it comes to the spunky woodchuck from their natural history to their role in the ecosystem.

Woodchucks are rodents who belong to a large group of ground squirrels known as marmots. The range of this group in North America is from eastern Alaska, across Canada, and into the eastern United States as far as northern Georgia. These adorable ground squirrels live in burrows that they dig themselves and consist of tunnels two to six feet deep and up to 50 feet long with various chambers for nesting, food storage, and waste. Because of this, their bodies are perfectly adapted for underground living, from the coarse fur which sheds and filters the dirt, to the valvular nose and ears that keep dirt out when digging. Woodchucks are mostly herbivorous, favoring herbaceous plants, garden crops, and fruits. They are typically solitary creatures except for mating season and when females give birth and raise their two to six kits.

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Happy Holidays from your friends at the Science Center!

*Winter programs begin in January.
See page 6.*

FORGING TRAILS:

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- **The North Coast 500 (June 2025):** Embark on an epic road trip along the stunning coastline of Scotland's far north. Encounter majestic mountains, serene lochs, and picturesque villages. Keep your eyes peeled for soaring raptors and fishing otters.
- **Outer Hebrides and Skye (May 2026):** A return to the islands of my birth where white shell-sand beaches go on forever, wildflowers bloom on the "machair" and eagles soar over ancient crags.

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Atlantic Puffin

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

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

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OPENING A WINDOW TO THE NATURAL WORLD

By Rachel Saliba, Development Director

MANY WAYS TO GIVE - VISIT [NHNATURE.ORG/SUPPORT](http://nhnature.org/support)

Nearer to Nature Annual Fund: You should have already received information from us about supporting the Nearer to Nature Annual Fund. By making a 100% tax-deductible donation to our Nearer to Nature Fund, you're furthering our mission and helping us to introduce more people to the transformative power of the natural world. You may give at nhnature.org/support, scan the QR code at the bottom of this page, mail a check to us at PO Box 173, Holderness, NH 03245, or call the office at 603-968-7194.

Tribute Gifts: Create a lasting memory to honor or remember a person, or celebrate a special occasion, such as a birthday or anniversary.

Sponsor A Species: Take your support of the Science Center animals to the next level by sponsoring your favorite animal. Your support helps with specialized diets, daily care, enrichment, and creature comforts for all of our animals.

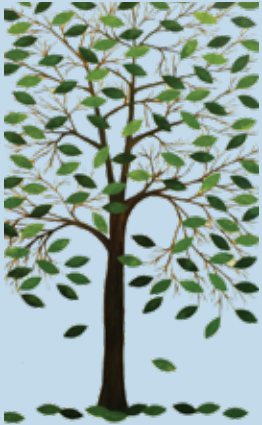
Marsh Boardwalk: Be a part of the new Marsh Boardwalk and support the mission of the Science Center by sponsoring a plaque in the name of a friend, family member, loved one, or pet. See full details at nhnature.org/boardwalk.

Gift Membership: Looking for a truly unique and thoughtful gift? Give the gift of nature with a membership to Squam Lakes Natural Science Center. A membership is more than just a pass; it's an invitation to explore, learn, and connect with New Hampshire's natural world. Surprise a loved one with the opportunity to connect with nature and create unforgettable memories. Visit nhnature.org/membership.

Business Partnership: Start planning for 2025. Business partnerships and support play a vital role in supporting the Science Center. Business partnerships provide companies a unique, engaging, and meaningful way to reach potential customers and positively impact the community. Contact Rachel Saliba at Rachel.Saliba@nhnature.org for more information.



WHAT WILL YOUR LEGACY BE?



Become a member of the Naturalist's Legacy Society by including Squam Lakes Natural Science Center in your estate planning and help us to fulfill our mission for generations to come.

For more information email Rachel.Saliba@nhnature.org.

Squam Lakes Natural Science Center is a non-profit organization with a mission to advance understanding of ecology by exploring New Hampshire's natural world. As a non-profit, we depend on support from our members and people like you. We are here to connect you to the natural world and provide a consistent educational experience immersed in nature. Learn how to support us at nhnature.org/support or scan the code. Thank you for your support. Squam Lakes Natural Science Center tax ID: 02-0271824.



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NATURALIST'S CORNER: HIBERNATION: REMARKABLE ADAPTATION

By Jeremy Phillips, Naturalist

Hibernation is a remarkable adaptation that allows many animals, including black bears (*Ursus americanus*), to survive harsh winter conditions when food is scarce and temperatures are low. For black bears though, hibernation is something extra special. It impacts the entirety of a black bear's life from birth.



People often wonder, do black bears hibernate? If included in the definition of hibernation is having a reduction in temperature, black bears do not adhere. However, discovering that bears can go more than seven months without eating, drinking, urinating, etc... it brings me to realize that temperature is only a small portion of this process. In fact, in 1981 many biologists redefined mammalian hibernation as "specialized seasonal reduction in metabolism concurrent with scarce food and cold weather" (Watts et al. 1981). Still, certain credible sources say yes and others say no, even today. I consider hibernation more on a spectrum, from true hibernators to semi-active animals. On the true hibernator side are many bats (*Myotis*) and woodchucks (*Marmota monax*) ranging all the way to semi-active like skunks (*Mephitis mephitis*) who do need to find food but can den up for short periods.

WISH LIST

- **For Animal Care:** Pet toys; local hardware and grocery store gift cards; baby blankets; dog/cat beds; PVC fittings/caps, Or see the wishlist at www.wildlifetoybox.com/wishlist/42 and www.ottoenvironmental.com/gift-registryiii/animal-care-gifts/
- **For Trailhead Event Space:** Coffee maker; electric kettle
- **For Kirkwood Gardens:** Garden spades and forks; steel tine bow rakes; square point shovels
- **For Lake Cruises Headquarters:** 8 cans of outdoor water shield spray; 4 cans Armor All spray; extra thick melamine cleaning sponges (magic eraser); sail palm

Some call what black bears do "denning," "lethargy," "slumber," "torpor." Call it what you will, it is on some portion of the hibernation spectrum. It lies somewhere between bats, whose temperature drops to near ambient degrees, and chipmunks, who we never see, but wake up every few hours to feed and defecate.

Bears prepare for winter the right way! Like that time I hiked the Presidential Range and then went to a restaurant for a 10-egg omelet, black bears give way to something called hyperphagia which means "excessive eating." During fall, bears increase their body weight anywhere from 30%-100% while gorging on 15-20,000 calories per day (up from 8,000). Their den might consist of a dugout on a slope, rock crevice, hollow tree, brush pile, under dead trees, or even in open portions of the forest floor. Females enter the den around mid-November, males in November-December, and their metabolic stats start to lower. This includes lower heart rate, constricted blood vessels, suppressed shivering, and reduced breathing and lower oxygen consumption. The difference between black bears and other (previously mentioned) mammals is that their temperature only drops by about 10-15 degrees F. They also do not defecate or urinate. These metabolic changes allow them to conserve energy and sleep much of winter. Bruins tend to wake up earlier than these other mammals. This allows them to re-establish territory and gain the weight they lost throughout winter.

Females stay in the den a little longer. To explain, let's go back to mid-summer when mating occurs. The embryo does not implant into the uterus until after the female goes into the den. Implantation won't occur unless the sow has gained enough weight prior to that to ensure survival for both. This slow, or suspended growth inside the mother means that, late January or February when the cub is born, it weighs less than one pound! The mother can weigh around 300 pounds. For the rest of the winter, the mother wakes enough to feed the cub milk. The warmer body temperature (compared to other hibernators) helps keep the cub warm. By the time spring comes, and the cub and sow emerge from their den, the cub has grown to weigh between four to ten pounds. Food is now more abundant as the growing season begins. The whole process can begin again. Black bear's way of surviving winter sets the tone for their whole survival.





KIRKWOOD GARDENS

By Emma Erler, Lead Horticulturalist

Q: Is there any way to save a branch that broke off of one of my trees?

A: It's not uncommon for trees and shrubs to suffer broken limbs during storm events, and home gardeners are often curious if there is a way to reattach or take cuttings from branches. Though these methods are sometimes successful, they require a lot of knowledge and patience, and in the majority of cases aren't worth the effort. Pruning out broken branches usually helps trees and shrubs in the long run. If there are still plenty of remaining branches along the trunk, these will grow more vigorously as the tree tries to replace what it lost. With careful pruning, it is often possible to train limbs to fill in a blank area.

The truth is, it is rarely possible to successfully reattach broken limbs. Trying to cable or tie them back to the main trunk is almost always wasted energy. Unlike people, woody plants are unable to heal damaged tissues. Instead, they compartmentalize wounds with layers of cells that prevent

the damage from spreading any further. Thus, the damaged wood does not grow back together again, and even if the branch manages to survive, it will be very weak because its vascular system has been severely compromised. Additionally, it will never be possible to remove the ties or cables that hold a broken branch in place, which could mean a permanent eyesore in the landscape.

Some gardeners may also wonder if it is possible to root a broken branch. Sadly, large branches cannot be rooted in their entirety, but a few small twig cuttings may be salvageable. While it is possible to grow many types of trees and shrubs from cuttings, it is no easy task. Very few species will root from cuttings that are stuck directly into the ground. It is almost always necessary to pot them up and use rooting hormones and some type of propagation chamber to keep humidity high. The key to success is knowing exactly which tree or shrub you have and following research-based propagation guidelines for that particular species.

PLANT SPOTLIGHT

Antwerp Hollyhock

Alcea ficifolia

Culture: Easily grown in average, moist, well-drained soils in full sun to light shade. Antwerp hollyhocks are considered biennials or short-lived perennials. Seed can be planted in the fall for bloom the following summer. Once established, hollyhocks will readily self-seed, preserving a colony for years to come. Foliage can be susceptible to several fungal diseases, but flowers are usually not affected. Hardy to Zone 2.

Bloom: Towering spikes of large, single, outward-facing flowers in a diversity of colors including red, pink, peach, white, and yellow. Bloom can extend from June through August.

Height: 4-8 feet

Antwerp hollyhocks are old-fashioned garden favorites that are relatively easy to grow and can have a big impact in perennial borders. They are well-suited to informal cottage gardens and border backgrounds, as well as against outbuilding walls or fences. When in bloom hollyhocks are attractive to hummingbirds and butterflies.

Kirkwood location: Lower garden, both sides of perennial border



American Cranberrybush

Viburnum opulus var. americanum

Culture: Prefers average, moist, well-drained soil in full sun to part shade. Performs best in moist, loamy soils but will tolerate a wide range of conditions. Zone 2.

Bloom: Lacey, flat-topped white flowers in May.

Height: 8-12 feet

American cranberrybush is a native New Hampshire shrub that can be found in low moist places like swampy woods, pond and stream margins, bogs, and thickets. Also known as highbush cranberry, the plant produces drooping clusters of cranberry-like fruits that ripen in late summer and are used by some people to make jams and jellies. Many species of songbirds also make use of the fruit, especially in winter when other food sources are scarce. Although American cranberrybush can grow to be a fairly large and unkempt shrub, it has attractive flowers in the spring and maple-like leaves with good fall color. Good choice for woodland margins or the back of naturalized shrub borders.

Kirkwood location: Upper garden on parking lot side



Kirkwood Gardens are sponsored by Belknap Landscape Company, Inc. and Donovan Tree Experts.

UPCOMING PROGRAMS & EVENTS

Winter 2025

Programs have limited capacities and advanced registration is required.
Full details and tickets are available on the Calendar of Events at nhnature.org.

WILD WINTER WALKS

10:00 to 11:30 a.m. or 1:00 to 2:30 p.m.
For ages 7 and up

Saturday, January 11
Saturday, January 25

Sunday, February 9
Saturday, February 15 (1:00 to 2:30 p.m. only)
Saturday, March 1

Have you ever wondered what happens to the animals at the Science Center during the winter? Most of them stay in the same place, just as they would in the wild. Join a naturalist for a guided walk on the live animal exhibit trail to see our animal ambassadors dressed in their winter coats and discuss how these native animals are well adapted for winter in New Hampshire. If needed, snowshoes are available at no extra cost or bring your own. An adult must accompany children. This program is all outdoors; dress in warm layers with insulated snow boots, hats, and gloves.

Cost: \$12/member; \$15/non-member

SCIENCE PUBS- NATURE ON THE MOVE: TRACKING MIGRATION

Tuesday, January 14
Tuesday, February 11
Tuesday, March 11
Tuesday, April 8

Doors open at 5:30 p.m., Presentation begins at 6:00 p.m.
At Walter's Basin Restaurant, Holderness
For Adults

Join us for a casual evening to learn about and discuss the science of understanding and tracking animal migration over food and drinks. Visit the Calendar of Events at nhnature.org for speaker details. Sponsored by Squam Lakes Natural Science Center, Squam Lakes Association, and Squam Lakes Conservation Society. Seating is limited. Advance registration for each date is required.

Cost: No charge to attend. Order and pay individually for food and drinks.



HANDS-ON LEARNING FOR HOMESCHOOLERS

First Thursday of each month, through April, 10:00 to 11:30 a.m.
For ages 4 to 6, and ages 7 to 10

Join us for this monthly series for homeschooled students to learn about the natural world through hands-on activities and investigations. We will wrap up each program with a visit with one of our live animal ambassadors.

Advance registration required. Register for one program or attend the whole series. Activities take place both indoors and outdoors. Dress to be outdoors with insulated boots, hats, gloves, jackets, and warm layers when appropriate.

Cost per session: \$12/member child; \$15/non-member child

An adult must participate with children at no additional cost. Each additional adult pays child fee.

FROM THE HERON'S NEST



Blue Heron School is well underway with 40 children ages 3 to 6. We enjoyed many sunny days working in our garden, playing in the Pine Grove and exploring with the Naturalists. Kindergarten children hiked Mt. Fayal and went out on a Squam Lake cruise. Lead Horticulturalist Emma Erler worked with the kindergarten children on their botany lessons and we planted and dissected bulbs together. The children harvested food and have been making a variety of recipes in their respective classrooms. They made applesauce, tomato sauce, banana bread, squash soup and have eaten all the parts of the plant (from seed to flower) as an extension of learning about plants with the naturalists. Children hosted family days, where they show their work to attending members of their family, and prepared and served them delicious snacks. Science Center staff are invited to attend family days as a way to meet the children's loved ones and to share how they contribute to our special program.



Blue Heron School is a nature-based Montessori school for children ages three to six. For information please visit nhnature.org/programs or contact Blue Heron School Co-Directors Jordan Fitzgerald and Jordy Gianforte at 603-968-7036 or blueheron@nhnature.org.



Bobcat

SQUAM LAKE CRUISES

Squam Lake Charters

Plan ahead for 2025! Host your own unique gathering on Squam Lake with a private cruise customized to fit your occasion or transport wedding guests to Church Island. Our four canopied pontoon boats and experienced tour guides are ready to help with your special outing. For reservations, contact Erick Amero at 603-968-7194 x 110 or erick.amero@nhnature.org.

Save the Dates for our 2025 Summer Fundraisers:
Family Picnic: Saturday, July 12
Annual Meeting and Garden Party: Thursday, August 14



ANIMAL CARE: BEHAVIORAL HUSBANDRY

By Brian Church, Animal Care Associate



Think about all of the different ways you may keep yourself busy in a given day - you could go out to eat, play a sport, learn a skill, spend time with friends and family, discover something new. If you don't get to do these things, you might feel a bit bored and antsy, right? The resident animals at the

Science Center are the same way. The animal care staff works to make sure the animals are given the opportunity to be themselves as if they were in the wild. We call this behavioral husbandry, and it is critical to the well-being of these animals.

Behavioral husbandry means that we are making sure these animals have ample opportunities to do all the things that they want to do. For example, the black bear exhibit provides opportunities for the bears to climb, dig, run around, sleep, search for food, bathe, hide, soak up the sun, and more. Each exhibit is catered to each specific species based on their behaviors and what they like to do. For example, the otters love to swim so they have a pool, the deer love to graze so they have lots of open space, and so on.

However, the animals may still get bored from time to time - how do you think we fix that? Think about your own home, and how you might rearrange the furniture or paint the walls a new color. The animal care staff does the same thing at exhibits - we move toys around, switch where their beds are, scatter their food in new locations, and add new things to discover each day.

This is so important for the animal care staff because it ensures the resident animals will live longer, healthier, and happier lives. Just like we need to get up and moving, keep our brain active, and have fun and company in our lives, these animals need the same things. It isn't just about eating the right foods, but making sure they are consistently feeling relaxed and at home, too.

When you are walking the trail, think about the different ways the animals are engaging and spending their day.

2025 BONUS MEMBER BENEFITS

 see science center	 CHILDREN'S MUSEUM of NEW HAMPSHIRE	 CENTER FOR WILDLIFE Est. 1986 CAPE NEDDICK, ME	 NEW HAMPSHIRE BOAT MUSEUM
APRIL	MAY	JUNE	JULY

 SEACOAST SCIENCE CENTER	 VINS VERMONT INSTITUTE OF NATURAL SCIENCES	 MONTSHIRE MUSEUM OF SCIENCE	 NHTM	 McAuliffe-Shepard Discovery Center Moving the universe to you
AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER

Reciprocal admission is generally good for up to two adults and two youth per visit. Be sure to take your membership card with you when you go. Check with specific organizations for hours, directions, and information.



Renew or purchase your membership today!



As a Science Center member, you receive discounted admission all year at participating ANCA organizations like VINS in Quechee, VT and Seacoast Science Center in Rye, NH.

VOLUNTEER UPDATE

The spirit of volunteering at the Science Center is strong! **Our dedicated volunteer team boasts of over 300 volunteers annually who donate between 5,000 and 6,000 hours of time.** But the important story behind the statistics is the commitment and enthusiasm volunteers generously share with staff and visitors. Staff are very appreciative of all volunteers do. Annually, we formally honor and celebrate volunteers at the Parsons Volunteer Recognition Dinner. The dinner is hosted by Camp Deerwood at their beautiful location overlooking Squam Lake and mountains in Holderness. The Board of Trustees recognize one of the many areas volunteers provide service. In 2024, Board Chair Sarah Brown put the spotlight on Animal Care volunteers and all they do to assist staff and animals.

Executive Director Iain MacLeod presented President Volunteer Service Awards to volunteers who met their criteria of 100 or more hours of service in a given year. They include Chase Bengato, Michelle Janosa, Denise Moulis, Karen Rosolen, and Bob Ryder. The wall hanging in the Trailhead Gallery was updated with volunteers who met benchmarks for their total number of hours donated. Those who reached or exceeded 200 hours by 2023 were Chase Bengato, Luke Culjat, Cathy Denious, Peter Foley, John Gephart, Donna Goldberg, Carl Lehner, Frank Stevens, and Tony Wagner. Exceeding 500 were John Egolf and Alex Markarian. Dawn Bourret has donated over 1,000 hours and Denise Moulis has reached the highest benchmark of donating over 2,000 hours of service. Many thanks to the entire volunteer team for all they do!

To learn more about volunteer positions and to apply, visit the Volunteer page at nhnature.org or contact Volunteer Manager Carol Raymond at carol.raymond@nhnature.org or 603-968-7194 x 122.

The following volunteer positions require formal scheduled training:

Docent and First Guides Training

Middle to end of June, details to come

Adult docents ages 18 and older and teen docent First Guides ages 14 through 17 are trained to be representatives on the exhibit trail, often accompanying docent mentors with live animals. Docents and First Guides are busiest between July 1 and September 1, but opportunities are available year-round.

Lake Education Assistant Training

April, TBD

Lake Education Assistants are ages 18 and older and would enjoy demonstrating lake testing activities with school children aboard pontoon boats. Some heavy lifting is required. Lake Education Assistants are busiest in May and June but may have opportunities in September and early October.

School Group Greeter Training

April 22 at 10:00 a.m.

School Group Greeters are the first person to greet students and teachers as they arrive for programs and trail walks. Greeters board buses to inform arrivals where to organize their groups, store their lunches, and other details. This weekday morning activity can be hectic and fun, usually lasting about an hour or two. School Group Greeters are busiest in May and June, with some opportunities in September and October.



KIDS' ACTIVITIES:

BE A BIOLOGIST - OBSERVE BIRDS IN YOUR OWN BACKYARD

Do you ever watch the birds that visit your backyard? Do you have a flock of turkeys that roam your neighborhood in the winter? You can help biologists understand how birds that spend the winter in New Hampshire are doing by recording your backyard bird sightings and sharing your observations through a community science project.

NH Winter Turkey Flock Survey, January-March – Watch for flocks of turkeys visiting your yard or neighborhood this winter and submit your sightings to New Hampshire Fish and Game. Your information will help biologists determine the effects of winter weather on turkey flocks. Submit your sightings through an online form. Learn more about participating here: <https://naturegroupie.org/citizen-science/new-hampshire-winter-turkey-flock-survey>.

NH Backyard Winter Bird Survey, February 8-9, 2025 - The biologists at New Hampshire Audubon would love your help in determining what birds are visiting our state during the winter. On the second weekend of February each year, you can participate by reporting any bird species that visit your yard or bird feeders. Watch for as little or as long as you are able during these two days. Record your sightings online or submit them by mail. Learn more about this project here: <https://nhbirdrecords.org/bwbs-reporting-and-forms>.

Great Backyard Bird Count, February 14-17, 2025 – Join backyard bird watchers from around the world for this annual bird count. Spend as little as 15 minutes during the designated weekend identifying and counting the birds around you. Submit your results to help scientists better understand and protect birds around the world. Learn more about how to participate here: <https://www.birdcount.org>.



Blue Jay



Dark-eyed Junco



Northern Cardinal

FROM THE ARCHIVES:

2000: Upgrades were made to the White-tailed Deer Exhibit including a new boardwalk.



TRAIL'S END



Wasn't the fall beautiful? Even in Washington, DC where my husband and I spend the winter, the colors were enchanting, though needless to say they don't hold a candle to what New England offers. I think often that Mother Nature gives us this special treat to put us all in a good frame of mind to weather the winter soon to come. But of course, winter in Washington bears no relationship to what goes on in the colder months that New England experiences. In my musings, I find myself thinking in depth about what the Science Center's skilled staff, especially the animal care and facilities crews, do to keep our large collection of native wildlife not only healthy but also well cared for and monitored carefully. No matter what the sleet or snow accumulation

looks like, these heroes are on the trails constantly making sure that our entire collection is safe, fed, and assessed for overall well-being, and that needed repairs to various enclosures are completed. Doing so on a quiet spring morning might be quite pleasant, but think about making the rounds during the winter months, blizzards notwithstanding! So, to all the superb people who keep the Science Center collection safe and well, especially in rain, sleet, snow or hail, a hearty thank you from us all!



The live animal exhibit trail after a snowfall.

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

THE WOODCHUCK'S STORY *continued from page 1*

This time of year, woodchucks are already hibernating. They stop eating and begin their slumber in September and early October, but it takes some important preparation. They prepare by eating more to store fat and making a nest either in a separate winter burrow or the deepest chamber of their current burrow which they plug with soil. These ground squirrels are true hibernators so all physiological processes slow down. The heart rate declines from their typical rate of 80-100 beats per minute to four or five beats per minute. Their body temperature drops from about 99°F (around 37°C) to around 40°F (4.5°C). And their breathing slows from around 16 breaths per minute to as few as two. They will lose around 25% of their body weight during the winter, so they emerge in the early spring very thin, ready to eat and find a mate. This is where the idea of February 2 comes into play. Most male woodchucks come out of their burrows in early to mid-February to prepare for mating, while females emerge from late February to mid-March to find an already established male. The whole mating process will be pretty rushed, as woodchucks must raise a litter by June, because the young need enough time to prepare for their first hibernation. So, when February 2 rolls around, and we wait for Punxsutawney Phil to emerge from his burrow, remember he is simply an ambassador for wild woodchucks who are coming out of hibernation looking to fatten back up and find a mate.

You may still be thinking, "Well, that's nice and all, but I still don't want them in my garden." Woodchucks do eat crops and can be seen as a pest, but they have some great benefits to us and our ecosystem. Woodchucks spend a lot of their lives underground, digging and living in their burrows which helps aerate and mix the soil. This means that by digging

their burrows, woodchucks loosen and expose compacted soil which allows air, water, and nutrients to reach plant roots more easily. A woodchuck's burrow is also beneficial to other wildlife such as rabbits, opossums, raccoons, chipmunks, shrews, voles, and skunks which will borrow chambers of the burrow to have shelter from the cold. Otters, weasels, snakes, and foxes may also use a woodchuck den in certain instances. Of course, woodchucks also make a tasty meal for bobcats, coyotes, foxes, wolves, bears, and mountain lions.

The feelings we have about animals can be cultural, conditioned, religious, and complicated, but I urge us to look further. The animals we take for granted and chase off of our property are crucial to the ecosystem as each species plays a unique role. Let's continue to protect our crops and property but also coexist while doing the least amount of harm. I challenge you, and myself, that if you're able to take some peaceful chilly winter strolls, think of the wildlife, particularly woodchucks, slumbering beneath your feet and start to think of them more fondly.



Woodchuck eating.

WOODCHUCK QUIZ

1. What is the scientific name for the woodchuck?
2. What are some other names for a woodchuck?
3. What adaptations do woodchucks have to help them dig in the dirt?
4. What is one ecological benefit of woodchucks?

- Answers:**
1. *Marmota monax*
 2. Groundhog, ground squirrel, whistling pig,
 3. Coarse fur and valvular nose and ears
 4. Aerate soil, bring nutrients into the soil, acts as prey for other animals, burrows are reused by other animals for shelter

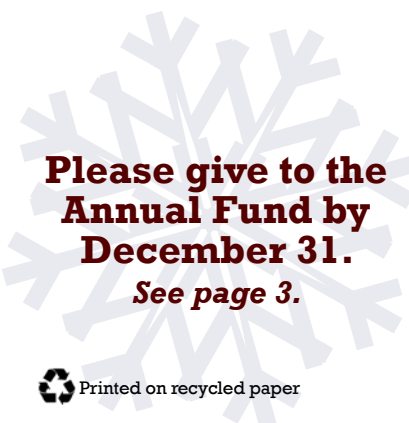


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