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Mass Audubon
Protecting the Nature of Massachusetts

Connections

JANUARY–MARCH 2015

A NEWSLETTER FOR THE MEMBERS OF MASS AUDUBON

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Resolve to Make the Most of 2015

Wildwood, Rindge, New Hampshire

Resolve to Make the Most of 2015

By Rosemary Mosco and Hillary Truslow

Does this sound familiar? Every January you think about all the ways you will make the New Year better than the last. And every February those resolutions are but a distant memory. Not this year! In order to help you stick with your plan, we took a look at some of the most popular resolutions and came up with easy, fun ways that Mass Audubon can help you keep them.

Stay in Shape

Instead of heading to the gym, hit the trails, especially when they're covered in snow! All you need is a trusty pair of snowshoes. According to University of Vermont Professor Declan A. Connolly, snowshoers can burn anywhere from 420 to 1,000 calories per hour. Fortunately, Mass Audubon has more than 100 miles of trails to explore, and several of our wildlife sanctuaries have snowshoes for rent.



Spend Time with Family

Our wildlife sanctuaries are ideal places to create memories that last a lifetime. Browse our online catalog to find activities for families of all shapes and sizes, including programs specifically tailored to parents and young kids, teens, or adults. Or just stop by for a visit; every wildlife sanctuary offers something new, and some families even resolve to explore as many as they can over the course of a year.



Become Involved in Your Community

There are smart ways for cities and towns to grow while protecting forests, farms, and water. Our Shaping the Future of Your Community program is designed to help you make a difference in how land is developed and protected in your community. Find resources online and stay tuned for upcoming events.

Volunteer More

For the second year in a row, Mass Audubon was ranked #1 in number of volunteers on the *Boston Business Journal's* list of Largest Nonprofit Organizations in Massachusetts. If you've resolved to volunteer, why not join our large and diverse volunteer corps and learn what all the fuss is about? We've got positions to fit many interests, such as:

- Goat Caretaker at Habitat in Belmont
- Steward for a section of Long Pasture's Butterfly Trail in Barnstable
- Publicity and Outreach Volunteer for Allens Pond in Dartmouth and Westport
- Property Management Volunteer at Wachusett Meadow in Princeton
- Trail Maintenance Volunteer at Broadmoor in Natick
- Exhibit Docent at Wellfleet Bay in Wellfleet
- Admissions and Gift Shop Helper at Stony Brook in Norfolk

Looking for a one-off group opportunity? Set up a community service day with your coworkers, classmates, scout troop, or other group. We'll help you find a time to pitch in at your favorite wildlife sanctuary. Or join us (and hundreds of other volunteers) for our annual Statewide Volunteer Day on Saturday, April 25.

Eat Better

A diet rich in plants is good for the body and the environment, and you can't beat fresh produce from a local farmer. Next time you're looking for veggies, stop by a nearby farm stand or farmers' market, or get your fill each week by joining a summer CSA (Community Supported Agriculture) with Moose Hill in Sharon or Drumlin Farm in Lincoln. Would you rather have someone else do the cooking for you? Some of the area's best restaurants feature ingredients grown at Drumlin Farm, including Craigie on Main, EVOO, Garden at the Cellar, and Henrietta's Table, all in Cambridge, and AKA Bistro in Lincoln.



Go Green

Every one of us has the power to make a difference when it comes to reducing the effects of climate change. To that end, there are easy and affordable actions that can yield huge results. One option is to purchase locally sourced green energy through our *Make the Switch* program and displace fossil fuels on your community's power grid.



Visit New Places

Combine your passion for international travel and your love of nature on intimate, expert-led adventures to some of the world's most exciting destinations. This year, Mass Audubon Tours goes to Panama to find rare harpy eagles, searches Iceland's sea cliffs for black-legged kittiwakes and thick-billed murres, and heads to Patagonia to look for southern right whales and thousands of Magellanic penguins.

Looking for a getaway closer to home? We offer trips to US destinations such as Arizona, South Carolina, Maine, and Nantucket. And of course there are Mass Audubon's 54 wildlife sanctuaries across the state. No matter where you're headed, join us for new adventures and experiences that'll make 2015 an unforgettable year.



Learn Something New

Want to pick up some new skills? Here are just a few you can add to your repertoire:

- Bird by ear at Broad Meadow Brook in Worcester
- Get the most out of your digital camera at Broadmoor in Natick
- Grow tasty food with a window garden at Boston Nature Center in Mattapan
- Identify skulls and bones at Ipswich River in Topsfield
- Draw and paint at Arcadia in Easthampton and Northampton
- Become an expert in sustainability through a book club at Felix Neck in Edgartown
- Get to know winter raptors at Blue Hills Trailside Museum in Milton
- Recognize animal tracks and signs at Pleasant Valley in Lenox

Plus, the Audubon Shop in Lincoln offers an extensive collection of books to help you hone your skills in gardening, food preparation, wildlife observation, and much more.



Get the details on all of our suggestions at massaudubon.org/resolutions.

Rosemary Mosco is Marketing Coordinator. Hillary Truslow is Assistant Director of Marketing and Communications.

Broad Meadow Brook Launches *Your Sanctuary in the City* Campaign

Located just three miles southeast of downtown Worcester, Broad Meadow Brook is New England's largest urban wildlife sanctuary. Each year it hosts more than 18,000 visitors, and it partners with local organizations to provide environmental education for thousands of children, adults, and families.

Broad Meadow Brook's visitor center and parking area can't keep up with the growing demand for programs. The *Your Sanctuary in the City* campaign aims to help the wildlife sanctuary expand. It has two key goals: to redesign the entrance area to better accommodate visitors and model green stormwater management, and to transform an older structure into a new 5,000-square-foot environmentally friendly education center.

To find out more and contribute to the campaign, visit massaudubon.org/bmbcampaign.



Wellfleet Bay Receives Grant to Study Horseshoe Crabs

Local horseshoe crabs are in trouble, and Mass Audubon's Wellfleet Bay Wildlife Sanctuary recently received a major grant from the Massachusetts Environmental Trust to determine the best way to protect them.

Horseshoe crabs are harvested for bait in Cape Cod waters. Fewer female crabs are spawning on beaches, and numbers in Wellfleet Harbor are especially low; the town of Wellfleet has called for a moratorium on the harvest to protect the harbor's ecology.

With support from this grant, researchers at Wellfleet Bay Wildlife Sanctuary will work with dedicated volunteers to attach tags to the crabs and track their movements. The result will be a plan to protect horseshoe crabs now and in the future.

Find all the details at massaudubon.org/wellfleetbay.



Birds and People Flock to the Merrimack River Eagle Festival

The Newburyport area along the Merrimack River is a magnet for wintering bald eagles, and since 2006, Joppa Flats Education Center and the Parker River National Wildlife Refuge have cohosted the annual Merrimack River Eagle Festival. Participants gather at riverside hot spots and local venues to observe the majestic raptors and learn about their natural history.

Our national bird was once in serious decline resulting from threats including DDT. "Bald eagles' continuing recovery is inspiring," says Joppa Flats Sanctuary Director Bill Gette. At this year's festival on February 7, you can celebrate their success by enjoying guided tours, indoor events, and much more.

Find a schedule of events at massaudubon.org/eaglefestival.



Five Reasons Kids Love Our Camps

By Adrienne Lennon

At Mass Audubon camps, we celebrate the long, warm days of summer by exploring our natural surroundings, from the wooded hillsides of Lenox to the sandy beaches of Wellfleet Bay. Year after year, families tell us how happy they are to have found us because of the people they meet, the places they go, and the things they do together.

Here we share the top five reasons kids (and parents) love Mass Audubon Camps.

Our Staff

Enthusiastic, friendly, knowledgeable—these are just a few of the words used to describe our counselors. Many are environmental educators, and some have grown up with our camps. Others are students from farther afield, with a worldliness and sense of adventure that inspires campers to become informed, thoughtful stewards of nature. No matter their life pursuits, they all share a common goal of creating fun, meaningful outdoor experiences for kids.

Playing Outside

“Discover, explore, be outside” is the mantra of camp since nature investigation forms the basis for many activities. Campers enjoy fresh air and space for their active bodies and leave camp filled with new knowledge about their surroundings. Life science lessons abound, and young learners are encouraged to ask questions and reconcile seemingly disparate facts about the ecosystems they visit.

Wildlife Encounters

Whether encountering a gray squirrel, watching a tiger swallowtail, or spotting a red-tailed hawk, campers brim with excitement when they observe animals up close. As campers begin to understand the creatures around them, they build a sense of place and belonging, helping them to see how they fit into the web of life.

Hands-on Activities

Experiential learning is central to all activities because it connects campers directly to what they’re studying (also, it’s fun!). Campers are free to get dirty while they learn about a range of subjects, from wilderness survival to plant identification. Moreover, they have opportunities to explore their interests and build confidence through new endeavors. By incorporating practical lessons, such as how to use a field guide or build a campfire, campers are able to become independent students of nature and continue learning on their own.

Other Campers

Last, but certainly not least, friendships are an important part of any summer camp. Our campers meet children from different backgrounds and build relationships based on mutual respect and empathy. They are able to find companions who share their interests and participate in group activities that require teamwork, strengthening interpersonal skills, and making memories to last a lifetime.

Adrienne Lennon is Camp Director and Teacher-Naturalist at Joppa Flats Education Center in Newburyport.



We're already looking forward to camp!



Register for our overnight camp, **wildwood**, and our **17 day camps** across the state at:

massaudubon.org/camps



Moose Hill's Claire Castleman



By Jan Goba

Moose Hill volunteer Claire Castleman was driving on Massapoag Avenue in Sharon last spring when she came across a turtle crossing the road. "Before I began at Moose Hill," says Claire,

"I would have just kept going and never looked back." Instead, she and some of her fellow commuters stopped to help the reluctant turtle find its way. The rescue was a sign of Mass Audubon's indelible impact on Claire.

The experience has been mutual. Claire began her Mass Audubon volunteer work seven years ago as a front desk volunteer. Though she doesn't have a formal background in nature, she has gleaned a tremendous amount of knowledge from the Moose Hill naturalists and the Nature and Wildlife information on the Mass Audubon website. With her new skills, she has rescued baby birds and other wildlife.

Along with an enthusiasm to learn, Claire brings highly valuable experience: she was a preschool educator for 20 years, participated as a mentor leader, and studied business at the graduate level. She is keenly aware of all sanctuary happenings and keeps the staff updated with any and all needed information. An integral part of the volunteer team, she coordinates and helps to train new volunteers and weekend reception staff.

Claire is also an art lover, and she assists with Moose Hill's gallery, where new nature-based juried shows are featured every three months. Her tenacity and attention to detail when reaching out to artists have helped to maintain the quality and excitement of these shows.

Claire always has a smiling face for visitors who come to Moose Hill and it's a sign of the kindness and generosity that she extends to her family and community. She has a wide network of friends in Sharon and is also very family oriented, having raised two boys, Michael and Daniel, with her husband, Jim. Claire shares her warmth with all of those lucky enough to be part of her life, and she's a true treasure for Moose Hill.

To find out more about volunteer opportunities at Mass Audubon, visit massaudubon.org/volunteer.

Jan Goba is Volunteer Coordinator and Gallery Curator at Moose Hill.



Focus on Feeders Joins Cornell's Great Backyard Bird Count

By Joan Walsh

Massachusetts residents have been reporting their backyard bird sightings to Mass Audubon for over 40 years, helping us to understand the status of the birds in our state. Beginning in 2015, Mass Audubon will embark on an alternative to our independent Focus on Feeders project. We're asking our members and friends to join us in becoming participants in the Cornell Lab of Ornithology's Great Backyard Bird Count.

The Great Backyard Bird Count (GBBC) is an annual four-day event that aims to create a real-time snapshot of bird populations. Participants are asked to count birds on one or more days of the event and report their sightings online. Anyone can take part in the GBBC, from beginners to experts. It offers all of the fun of Focus on Feeders, but with the added bonus of contributing data to one of the largest citizen science projects in the world, helping us to protect birds and ultimately our shared environment.

The 18th annual GBBC will be held Friday, February 13, through Monday, February 16, 2015. To find out how to participate, visit massaudubon.org/focus or birdcount.org.

Joan Walsh is Director of Bird Conservation.



13 Groundhogs

By Renata Pomponi and Tia Pinney

Every February 2, we wait for the groundhog to emerge from its underground den. According to tradition, if this burrowing mammal sees its shadow, we're in for six more weeks of winter. Also known as the woodchuck, the groundhog (*Marmota monax*) is one of New England's few true hibernators. It's an excellent digger, and can break up rocks with its teeth and dig through roots with its claws.

While Punxsutawney Phil may be one of the most famous woodchucks, our own Ms. G, who resides at Drumlin Farm in Lincoln, is giving him a run for his money. For the last eight years she's been "forecasting" the weather while teaching children and adults about wildlife and conservation. Thanks to the work of elementary school students from Wellesley, Governor Patrick signed a science education bill in July that made Ms. G the Official Massachusetts State Groundhog.

Here are a few quick facts about Ms. G and her fellow groundhogs.

99°F: Typical body temperature of a groundhog.

40°F: Typical body temperature of a hibernating groundhog (humans become hypothermic below 95°F!).

100 beats per minute: Typical heart rate of a groundhog.

4 beats per minute: Typical heart rate of a hibernating groundhog.

3 acres: Approximate size of a groundhog's home territory.

5 to 6 feet: Deepest a groundhog will burrow.

50 feet or more: Length of a groundhog's tunnel.

5 to 6 weeks: Age at which a young groundhog is ready to leave home and strike out on its own.

38: Number of US states with wild groundhog populations.

Want to learn more about groundhogs? Join the Groundhog Day celebration at Drumlin Farm on February 2 and meet Ms. G as she makes her annual forecast at 10 am. Plus, read all about this and other native species at massaudubon.org/wildlife.

Renata Pomponi and Tia Pinney are Education Coordinators at Drumlin Farm.





Land Conservation: The Gift that Keeps on Giving

By Bob Wilber

Mass Audubon has an incredible collection of protected lands across Massachusetts. From coastal Cape Cod and the Islands to the wilds of the Berkshires, our many wildlife sanctuaries include well-loved flagships and countless hidden gems.

As diverse as our wildlife sanctuaries may be, they all have three key elements in common: they serve as essential habitat for plants and animals, they are places for people to connect with nature and benefit from its many gifts, and they all were once unprotected tracts of land.

Without addressing this last attribute, we wouldn't have the others. And going from unprotected to protected status is the result of considerable effort, including planning, negotiation, partnering, and fundraising. As important as those steps are, it's what happens in the days, months, and years that follow that demonstrates their true significance.

A good example is our work in the city of Attleboro—an urban area located by Massachusetts' border with Rhode Island and known for the prominent jewelry industry that once existed there. Oak Knoll Wildlife Sanctuary was established in 1997 as the result of a generous property gift from the Ottmar family. For years, the sanctuary operated as a small but important facility serving a large urban population. Then, just over a decade ago, Mass Audubon acquired 15 acres of adjacent land. This addition was identified because it contained something the existing sanctuary did not—a beautiful water body, Lake Talequega (or Lake T). Water

bodies like Lake T are valued amenities for any wildlife sanctuary because they serve as both a haven for wildlife and a magnet for people.

Sure enough, the addition of Lake T has had tremendous impact. Oak Knoll staffer Michelle Jorgensen reports that the new land “is a regular destination for school field trips and hosts very popular

ponding programs during which kids experience the wonder of viewing tadpoles and other creatures for the first time. It's also a resource for people of all ages—from toddlers to seniors—to see migrating waterfowl and other wildlife.”

But there was still more work to be done in Attleboro, which is why we couldn't pass up the opportunity to work with the National Shrine of Our Lady of La Salette to establish an altogether new 117-acre sanctuary—Attleboro Springs. Working in partnership with the city of Attleboro, this property was conserved as part of our statewide religious lands conservation initiative.

This beautiful property now provides tremendous

benefits to the animals and plants that live there and to the many people who use its popular trail system, which includes the wonderful universally accessible sensory trail that allows people of all abilities to experience nature.

For more land conservation success stories, visit massaudubon.org/land.

Bob Wilber is Director of Land Conservation.



Children Ponding



Winter at Oak Knoll Wildlife Sanctuary



Climate Change and Sugar Maples: A Sticky Problem

By Loring Schwarz

The sugar maple is a charismatic component of Massachusetts forests. Its sap, which is boiled to make sweet products such as syrup and candy, provides an important source of income for farmers. Unfortunately, climate change threatens many forest species, including our beloved sugar maple. Like other trees, it has its own ideal “climate envelope” that defines its preferred growing conditions. How will a changing climate affect this tree?

Trees in Trouble

The latest science and our own observations tell us that we can expect a number of impacts. One is a change in range. By the late 21st century, the ideal conditions for growing this tree will have shifted northward by some 200 miles. The area occupied by the sugar maple will change as a result, though it’s not clear how quickly this species will be able to keep up with such a rapid shift.

Those trees that are able to maintain a stronghold in existing habitats will face increased stress from forest pests and diseases that thrive in warmer winters. Another problem is diminished snow cover; winter snow insulates root systems and protects them from cold snaps, so less snow means vulnerable roots. These factors can combine to weaken and eventually kill trees.

Sweet Retreat

We’re already seeing climate change impacts on our tradition of harvesting sap. Stress can impair a tree’s ability to make and store sugar, and syrup producers are noticing that it takes more sap to produce a gallon of

syrup than in the past. They have responded to some degree with technological fixes, such as vacuum sap collectors. The changing climate is also altering the timing of sap flow, which is linked to temperature. In New England, it’s likely that the tapping season will begin two weeks to one month earlier by the late 21st century. There’s still much to learn about how this will affect farmers and maples.

You Can Help

While climate change is altering the nature of Massachusetts, you can play a role in lessening its impact. A few important actions are making the switch to green energy, buying green car insurance, and helping your town grow sustainably. To learn more about climate change and how you can help, visit massaudubon.org/climate.

Loring Schwarz is Climate Change Program Director.



Be Part of the Solution:
Make the Switch to Green Electricity
Today. It’s Easier Than You Think!

massaudubon.org/maketheswitch



Legislative Priorities for the New Session

By Christina McDermott

A new two-year legislative session has begun, with a new Governor, administration, and many newly elected legislators. It's been a busy time for the members of our Advocacy department—we've been strategically planning our priorities for this session, researching and meeting with our science and conservation staff, state agencies, and partner organizations to better understand the most pressing threats to nature in our state.

Our top legislative priority is addressing climate change, which continues to pose the greatest threat to land, water, and wildlife. Over the past decade, Mass Audubon's advocacy work has helped make our

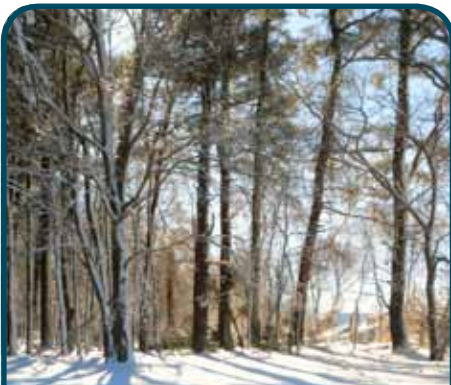
state a leader in reducing climate-altering pollution. Recently, there's been increased interest in our natural ecosystems' capacity to protect lives, infrastructure, and property from climate impacts like storm surges and flooding. We plan to focus on promoting the preservation and restoration of our natural landscapes, making our communities safer and more secure. We will also continue our work protecting endangered species and priority habitat.

We want to hear from you! If you have ideas about how we can better protect the nature of Massachusetts, contact us at advocacy@massaudubon.org or sign up for our weekly newsletter at massaudubon.org/advocacy.

Christina McDermott is Assistant to the Director of Public Policy.



Salt marshes act as sponges, helping protect coastal environments in the face of storm surges and sea-level rise.



Timeless

Leave a legacy for future generations.

Remember Mass Audubon in your will or estate planning, and make the lasting gift of conservation.

Contact Jan Adams,
Director of Planned Giving
janadams@massaudubon.org • 781-259-2111
massaudubon.org/plannedgiving



Mass Audubon



Birders Meeting

Managing for Birds



Saturday, March 7, 2015

Bentley University, Waltham

Expert Guest Speakers • Lunch
Vendors • Raffles • Silent Auction

massaudubon.org/birdersmeeting
or call 781-259-2152



Is your New Year's resolution to add more birds to your life list? Join Mass Audubon Naturalists for

Birding and Natural History Tours

Trinidad with Robert Buchsbaum and Scott Santino • March 20–30, 2015

Costa Rica birding hot spots with Dave Larson • April 5–15, 2015

Amazon Riverboat in Peru with Joan Walsh • November 6–15, 2015

For more tours and itineraries, visit massaudubon.org/travel.
Email travel@massaudubon.org,
or call 800-289-9504.



A Snapshot of Seasonal Offerings

Get the details and register online at massaudubon.org/programs. Preregistration may be required.

Wednesday Morning Birding

Wednesdays, 9:30 am–12:30 pm
JOPPA FLATS, Newburyport
978-462-9998

Join us every week for great winter birding in the Newburyport/Plum Island area.

Bald Eagle and Snowy Owl Field Trip

January 17, 8 am–2 pm
Contact HABITAT, Belmont
617-489-5050

This Newburyport/Plum Island field trip will help you learn to spot wintering eagles and owls.

Winter Open House

January 24, 1–4 pm
(Snow date: January 25, 1–4 pm)
WACHUSETT MEADOW, Princeton
978-464-2712

Celebrate the season with sledding, snowshoeing, ice cutting, tracking hikes, games, and more.

Phenology: The Timing of Seasonal Biological Activities

January 25, 2–3:30 pm
STONY BROOK, Norfolk
508-528-3140

Recognize, observe, and record plant and animal processes to understand the impacts of climate change.

Big Moon Owl Prowl

January 31, 5–6:30 pm and March 7, 5:30–7 pm
FELIX NECK, Martha's Vineyard
508-627-4850

Look, listen, and learn about these nocturnal birds on a full moon walk.

Animal Tracks and Signs

February 7, 10 am–noon
CANOE MEADOWS, Pittsfield
413-637-0320

Search for tracks, scat, and other signs of animals that remain active throughout the winter.

Valentines for the Birds

February 7, 10–11:30 am
OAK KNOLL, Attleboro
508-223-3060

Calling all kids: come make beautiful bird-themed valentines for friends, relatives, and neighbors.

Owl Festival and Live Owl Show

February 7, 3–4 pm
BROADMOOR, Natick
508-655-2296

Meet local owls, including the great horned and eastern screech-owl. Plus, join a guided owl prowl.

Winter Hike at Allens Neck

February 21, 10 am–12:30 pm
ALLENS POND, South Dartmouth
508-636-2437

Go on a fun all-ages search for winter birds in Dartmouth and Westport.

Maple Sugaring Tours

February 28, March 1, 7, 8, 14, and 15, tours at 10:30 am, 12:30 pm, and 2:30 pm
IPSWICH RIVER, Topsfield
978-887-9264

Spring celebrations begin early at Ipswich with the age-old tradition of maple sugaring.

Give Bees a Chance

March 7, 7–8:30 pm
BROAD MEADOW BROOK, Worcester
508-753-6087

Find out about bees and how to make your backyard bee friendly for beautiful, native, stingless pollinators.

Webelos Scout Naturalist Night

March 12, 7–9 pm
BLUE HILLS TRAILSIDE MUSEUM, Milton
617-333-0690

Scouts can stop by the museum to fulfill five requirements for a Naturalist Badge.

20th Annual Cape Cod Natural History Conference

March 14, 8:30 am–3 pm
Contact WELLFLEET BAY, Wellfleet
508-349-2615

Presenters from Cape Cod environmental organizations discuss local research projects and conservation efforts at Cape Cod Community College.



Maple Sugaring Festival

March 15, 21, and 22, 11 am–3 pm
MOOSE HILL, Sharon
781-784-5691

Discover the magic of turning sap into syrup while exploring maple sugaring through time.

Snakes of Massachusetts





March 17, 7–9 pm
ARCADIA, Easthampton and Northampton
413-584-3009

Learn about Massachusetts' 14 species of native snakes as well as efforts to conserve them.

Woolapalooza

March 28, 10 am–4 pm
DRUMLIN FARM, Lincoln
781-259-2200


At this fleecy fun festival, see sheep shearing, herding demos, crafts, games, and more.

School & Group Programs

Let us be your guide!

Our fun, creative programs and field trips are aligned with Massachusetts' Curriculum Frameworks.



massaudubon.org/education



Avian Winter Visitors

By Rosemary Mosco



Purple Sandpiper
(*Calidris maritima*)

Though hardly purple, these shorebirds bear a unique color combination of gray feathers and bright orange legs. They're found in flocks on barnacle-encrusted rocks along the shore where they feed on crustaceans and other invertebrates in the intertidal zone—the band between the high- and low-tide lines.



Snow Bunting
(*Plectrophenax nivalis*)

True tundra birds, snow buntings nest farther north than any other perching bird. They build nests on the rocky ground and line them with feathers, fur, and vegetation to keep their young warm. In winter, they travel to the northern half of the United States, where noisily chirping flocks search for seeds in open areas such as farmers' fields and beaches.



Long-tailed Duck
(*Clangula hyemalis*)

These ducks spend the winter on the open ocean or in sheltered coastal bays, where they make frequent dives (up to 200 feet or more) for crustaceans and other food. The food-rich waters around Nantucket support what may be the world's largest wintering population of these handsome ducks, totaling as many as a half million birds.



American Tree Sparrow
(*Spizella arborea*)

Early settlers chose this name because the birds reminded them of tree sparrows back home, though American tree sparrows feed mainly on the ground. Look for these birds hunting for seeds in weedy places. Their rusty cap, bicolored bill (gray on top; yellow underneath), and black breast spot are distinctive.



Rough-legged Hawk
(*Buteo lagopus*)

When you're visiting an open area such as a farmer's field or a coastal marsh, keep an eye out for these large hawks hovering in midair in search of meadow voles or other small prey. Look for the dark "wrists" on their wings, though some birds come in a darker morph and are brown everywhere except on their trailing wing feathers and tail. Another field mark is the characteristic white and black tail pattern.

In the fall, birdwatchers bid goodbye to Hummingbirds, warblers, swallows, and other migrants. However, the show is far from over. There are almost as many bird species in our state in the winter as there are in the summer, and many northern-nesting species migrate south just to spend the colder months here.

Given the severity of our weather, it might seem strange that Massachusetts is an avian winter destination. But birds are extremely well insulated from the cold. Their chief concern is to find enough food to keep their metabolic fires burning.

Fortunately, there are many meal possibilities in the wintry landscape. Weedy meadows are full of seeds that sustain songbirds such as Lapland longspurs. Hawks, shrikes, and owls hunt small mammals that scurry across open fields. Wintering sandpipers forage for invertebrates along the coast, and sea ducks dive for fish and mollusks offshore.

Cold winter nights may have us shivering, but they pose no special threat to these birds. Some seek shelter in brush or coniferous trees. Others, such as snow buntings, may simply rest on the ground. Many ducks will sleep out on lakes or the open ocean.

Come spring, these birds will go north, back to the tundra or taiga forests where they'll build their nests and raise young. But while they're here, grab your warmest jacket and experience this unique winter phenomenon.

Learn more about Massachusetts wildlife at massaudubon.org/wildlife.

Rosemary Mosco is Marketing Coordinator.

Winter 2015

By Ann Prince

JANUARY



1 Take a New Year's walk to watch for common wintering songbirds that are out and about, such as nuthatches, juncos, and cardinals.

3 Watch for pine grosbeaks and redpolls in evergreens and birches.



5 Full moon; the Moon after Yule (Anglo-Saxon), the first full moon after the winter solstice. This is the traditional season of festivals that celebrate lengthening days and the sun's rebirth.

8 Red winterberries on bare twigs are vibrant in the snowy landscape.

10 In snowy fields and on icy ponds watch for visiting geese from the arctic such as white-fronted and snow geese.

18 Fox and bobcat tracks make dotted lines on the snow-covered ground.

23 Look for the bright stems of red osier dogwood along stone walls.



30 Great horned owls begin to nest at about this time.

FEBRUARY



3 Full moon; the Ice Moon (Celtic).

6 The giant planet Jupiter will be at its closest position relative to Earth and at its brightest in the sky. Around midnight look through binoculars at Jupiter and its four largest moons.

10 If there's a snowmelt, search for traces of tunnels dug by voles and shrews.



21 Listen for the buoyant spring songs of chickadees and titmice.

26 In coniferous or mixed forested areas listen for the whistling notes of purple finches.

Outdoor Almanac has been a longtime Sanctuary magazine favorite, and we're thrilled to bring it to the pages of Connections.

MARCH

5 Full moon; the Worm Moon (Native American), so named because the ground softens in March and the earthworms reappear.



10 Salamander migration begins. On the first rainy nights after the snow melts, watch for them as they make their way to vernal pools.

13 The flowers of pussy willows, also known as catkins, are fuzzed out on leafless branches.

16 Skunk cabbages, among the first plants to emerge in spring, appear in wetlands. Soon their unpleasant odor attracts pollinators such as flies and beetles.

18 Red-winged blackbirds are back. Watch also for flights of grackles and starlings.

19 Listen for the territorial drumming of hairy, downy, and pileated woodpeckers. Pairing begins in late winter.



20 Vernal Equinox; first day of spring. Days and nights are of equal length.

23 Listen for the roundelays of song sparrows and the trills of yellow-rumped warblers.

26 Phoebes and fox sparrows arrive.

29 Overwintering mourning cloak butterflies, harbingers of spring, come out of hiding on sunny days.



Ann Prince is Copyeditor.

Cold Science

Your breath turns to steam, snow glitters on the ground, and snowballs do or don't stick together. Why do these things happen? All you need to do is look to science to find the answers.

Why does my breath look like steam?

There's a lot of water mixed with the air you breathe out. When it leaves your lungs this water is in the form of water vapor, which is actually a gas. When this vapor hits cold air, the water molecules lose some of the energy that's kept them whizzing around as a gas, and stick together in clumps. The result is a smoky cloud made of tiny water droplets.

Why are no two snowflakes alike?

A snowflake is a bunch of ice crystals stuck together. The shape of a snow crystal depends on how wet and cold the air is where the crystal forms. As it falls through the air, its shape and size may change as conditions change. This makes it unlikely that any two snowflakes will be exactly alike.

How come I can't always make a snowball?

The pressure you apply when forming a snowball melts a little of the snow and the water acts like a glue that helps the snowball stick together. When it is closer to freezing (32 degrees), there tends to be more water within the snowball. Very cold snow is drier and the snow can't get warm enough to melt even if you squeeze it very hard.

What's warmer: mittens or gloves?

If they're made of the same fabrics, mittens will usually keep your hands warmer. In a mitten, your fingers press together and share heat. In a glove, more of each finger is exposed to the cold air, which means they lose more heat.

Why is snow glittery?

The ice crystals in snow act like tiny mirrors, reflecting sunlight. Snowflakes can also separate light into a rainbow of colors, which means you may see colorful glints. A glass prism you may use in science class will do the same thing.

We've made two snowflakes on this page identical. Can you find them?



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The Natural Inquirer

By Robert Buchsbaum

Q. Where do lobsters go in the winter?

A. We all know that many species of birds migrate to warmer climes as winter approaches, and people with a passion for fishing are also aware that certain popular game species, such as striped bass and bluefish, depart our coastal waters for more southern oceans and bays. But what about lobsters? They hardly seem built for long-distance travel.

People long thought that lobsters were sedentary, staying within a limited home range all year. But studies of lobsters that were individually tagged have shown that at least some subset of their population is migratory. As much as 40 percent head to deeper water when the ocean cools. Compared with migratory birds, lobsters don't go far: Those that live near shore typically travel about 5 miles, and offshore lobsters, such as those on Georges Bank—a 36,000-square-mile seafloor rise east of Cape Cod—may travel 20 miles or more.

Migrating lobsters are typically mature individuals, including females carrying eggs; perhaps they're seeking the relative calm of deep cold water. They move back to the shallows in the spring, often to within a few miles of their point of departure. Juvenile lobsters tend to be more sedentary. Perhaps the risk of exposing themselves to predators during their travels more than offsets any benefit to the youngsters.

Robert Buchsbaum is Southeast, Cape, and Islands Regional Scientist.



Northern lobster
Homarus americanus

Have you seen any interesting wildlife? Share your sightings at [facebook.com/massaudubon](https://www.facebook.com/massaudubon).

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The Final Word

We invite your comments, photographs, and suggestions. Please send correspondence to: Mass Audubon Connections, 208 South Great Road, Lincoln, MA 01773, tel: 781-259-9500, or e-mail: connections@massaudubon.org. For questions regarding your membership, contact: Mass Audubon Member Services, 208 South Great Road, Lincoln, MA 01773, tel: 781-259-9500 or 800-AUDUBON, or e-mail: membership@massaudubon.org.

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 = Wildlife sanctuaries with nature centers

- 9 Lynes Woods, Westhampton
- 10 Arcadia, Easthampton and Northampton
- 11 Laughing Brook, Hampden

- 40 Attleboro Springs, Attleboro
- 41 Oak Knoll, Attleboro
- 42 North River, Marshfield
- 43 Daniel Webster, Marshfield
- 44 North Hill Marsh, Duxbury
- 45 Allens Pond, Dartmouth and Westport
- 46 Great Neck, Wareham

Boston Nature Center has 2.5 miles of snowshoe trails & offers rentals, providing a snowy getaway in the city of Boston's second most densely populated neighborhood.



Berkshires

- 1 Pleasant Valley, Lenox
- 2 Canoe Meadows, Pittsfield
- 3 Lime Kiln Farm, Sheffield

Connecticut River Valley

- 4 West Mountain, Plainfield
- 5 Road's End, Worthington
- 6 High Ledges, Shelburne
- 7 Conway Hills, Conway
- 8 Graves Farm, Williamsburg and Whately

Central Massachusetts

- 12 Pierpont Meadow, Dudley
- 13 Burncoat Pond, Spencer
- 14 Broad Meadow Brook, Worcester
- 15 Eagle Lake, Holden
- 16 Cook's Canyon, Barre
- 17 Rutland Brook, Petersham
- 18 Wachusett Meadow, Princeton
- 19 Lincoln Woods, Leominster
- 20 Lake Wampanoag, Gardner
- 21 Flat Rock, Fitchburg

North of Boston

- 22 Rocky Hill, Groton
- 23 Nashoba Brook, Westford
- 24 Joppa Flats, Newburyport
- 25 Rough Meadows, Rowley
- 26 Ipswich River, Topsfield
- 27 Endicott, Wenham
- 28 Eastern Point, Gloucester
- 29 Marblehead Neck, Marblehead
- 30 Nahant Thicket, Nahant

Greater Boston

- 31 Habitat, Belmont
- 32 Drumlin Farm, Lincoln
- 33 Waseeka, Hopkinton
- 34 Broadmoor, Natick
- 35 Boston Nature Center, Mattapan
- 36 Blue Hills Trailside Museum, Milton
- 37 Museum of American Bird Art at Mass Audubon, Canton

South of Boston

- 38 Moose Hill, Sharon
- 39 Stony Brook, Norfolk

Cape Cod and the Islands

- 47 Ashumet Holly, Falmouth
- 48 Sampsons Island, Barnstable
- 49 Skunknet River, Barnstable
- 50 Barnstable Great Marsh, Barnstable
- 51 Long Pasture, Barnstable
- 52 Wellfleet Bay, Wellfleet
- 53 Felix Neck, Edgartown
- 54 Sesachacha Heathlands, Nantucket

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Mass Audubon Audubon Shop

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*Sale items excluded

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