

C Mass Audubon *Protecting the Nature of Massachusetts*

Connections

JANUARY – APRIL 2010

A NEWSLETTER FOR THE MEMBERS OF MASS AUDUBON

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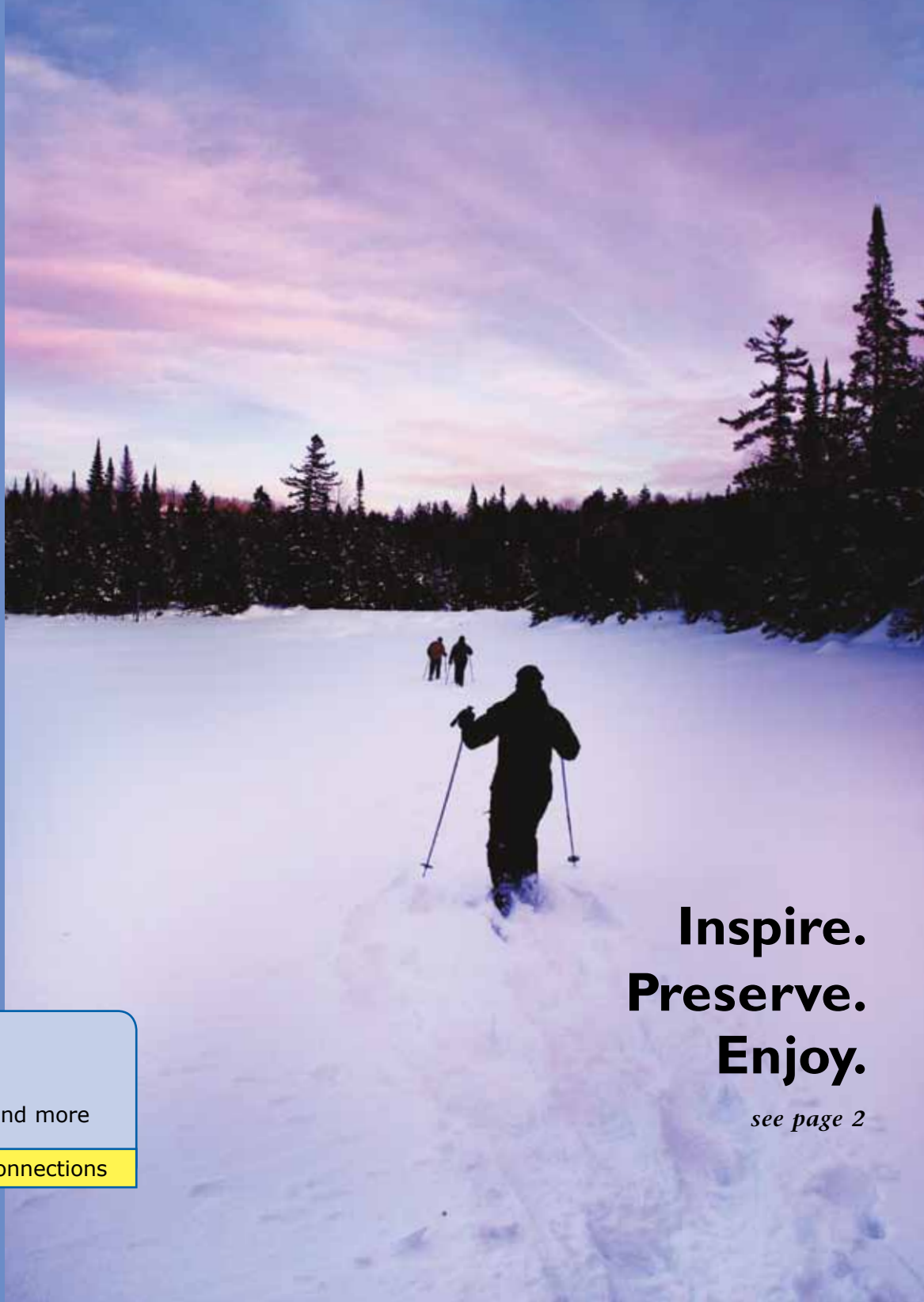
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 www.massaudubon.org/connections



**Inspire.
Preserve.
Enjoy.**

see page 2

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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 information about becoming a member, or for questions regarding your membership, contact: Member Services, Mass Audubon, 208 South Great Road, Lincoln, MA 01773 tel: 781-259-9500 or 800-AUDUBON, or e-mail: membership@massaudubon.org.

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Mass Audubon works to protect the nature of Massachusetts for people and wildlife. Together with more than 100,000 members, we care for 34,000 acres of conservation land, provide educational programs for 200,000 children and adults annually, and advocate for sound environmental policies at local, state, and federal levels. Mass Audubon's mission and actions have expanded since our beginning in 1896 when our founders set out to stop the slaughter of birds for use on women's fashions. Today we are the largest conservation organization in New England. Our statewide network of 47 wildlife sanctuaries welcomes visitors of all ages and serves as the base for our conservation, education, and advocacy work. To support these important efforts, call 800-AUDUBON (283-8266) or visit www.massaudubon.org.

Photography:

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CONNECTING PEOPLE AND

*by Chris Leahy, Gerard A. Bertrand Chair of Natural History
and Field Ornithology at Mass Audubon*



Last June I sat next to a prosperous-looking banker on a flight from Beijing to Ulaanbaatar, Mongolia. He was part of a team of developers on their way to spec out a resort complex to be built not far from the Mongolian capital. When he found out that I was about to lead a natural history tour for a conservation organization, he expressed great interest and told me about fond memories he had of beautiful birds he had seen as a boy in his native India. Then he said: "This will probably sound like a very stupid question, but are there real advantages to seeing wildlife in the out-of-doors when you can now see all these things so well in videos and the like? I mean, you can see lions and tigers and what have you in every detail without going to all the expense and bother and even danger of traveling out into these remote places."

I was, I admit, momentarily flummoxed into uncharacteristic silence while I struggled to grasp a relationship to nature so different from my own that I couldn't immediately imagine it. After acknowledging the logic of his question, I told my seat mate that, for me, watching birds on TV versus watching them in the wild is akin to looking at a gourmet dinner on TV as opposed to actually eating it or watching someone skiing on TV instead of going skiing. Experiencing nature is more—way more—than looking at pictures of it. The banker took this answer in thoughtfully. He seemed intrigued, but I'm not sure he was convinced.

Participatory biological conservation—the idea that people should be helping nature rather than the other way around—has evolved through a number of distinct phases during its short life. It originated with the disturbing insight that it was possible (for example) to kill off every last passenger pigeon—to utterly, thoughtlessly destroy a once-abundant species. The Founding Mothers of the Massachusetts Audubon Society—despite their status as proper Bostonians—founded what was then

NATURE



considered a radical feminist movement. At a time when women could not even vote, Harriet Hemenway and Minna Hall, it would seem, had little political influence. Yet their power—which ended the slaughter of egrets and other plume birds for millinery decoration and spearheaded the passage of the first American wildlife protection laws—came from their ability to engage the passion of hundreds of other women to stop the carnage.

As environmental problems have become more complex and ballooned to a global scale—indiscriminate use of pesticides, destruction of rain forest and other ecosystems, pollution related to resource extraction, invasive species, global warming—it has increasingly fallen to specialists, large bureaucracies, and established conservation organizations to respond to what has come to seem like a war against nature.

Mass Audubon has engaged with all of these major environmental issues, accruing many successes to its credit. Even with issues as seemingly intractable as climate change, we have been able to lead by creating models of renewable energy at an appropriate scale and providing examples of carbon reduction within our own state and sanctuary system. But in examining our priorities and our approaches to doing effective conservation in a recent review of program and policy, we realized that one of the greatest obstacles to effecting the kind of sea change that needs to occur if we are to win the present battles to counter the war against nature is the

challenge exemplified by my traveling companion, the development banker. ***How can we hope to preserve the natural world when so many of our citizens have lost all contact with nature in their daily lives, indeed, have trouble appreciating the distinction between watching birds in the wild and watching them on TV?***

It is our children who we worry about the most. Mesmerized by computer games and other electronic distractions, hyper-programmed with organized activities, kept close to home by parental fears, and, like the banker, uncertain whether nature offers much more than bee stings, tick bites, and sunburn, today's kids have every excuse to get their dose of nature from the Discovery Channel. This is not a promising trend for the conservation of real



landscapes, trees, birds, and butterflies.

In response, Mass Audubon has resolved in our current initiatives for protecting the nature of Massachusetts to advance the overarching goal of ***Connecting People and Nature***. In the next four pages, you can learn not just about the extraordinary work that your

organization is doing to protect the natural beauty and biological richness of the Commonwealth, but how ***you*** can help us with this extraordinary challenge. As a longtime Mass Audubon supporter—and wise woman—said at a recent strategy session: “The job of conservation is too big now to be left solely to the conservation organizations. We need everyone to be involved in protecting nature. ***We need everyone!***”

Mass Audubon's ***Connecting People and Nature Campaign*** sets forth a vision to establish, enhance, and extend connections between people and nature, and between people and people. We also have a thoughtful strategy to transform the vision into reality. Under an encompassing theme of ***Connecting People and Nature***, our \$55 million campaign divides our mission goals and objectives for the near future into four broad action priorities: Preserving a Common Wealth of Birds, Protecting Land and Habitat, Building Conservation Communities, and The Fund for Nature.

With just over \$5 million left to go toward our goal, we've already made great progress, but there is still more to do and we can't do it without ***you***.

Please read the brief summaries of the action areas on pages 4 through 7 that follow and then ask yourself where you might fit into the picture. It has been said that nature conservation is the greatest calling of the 21st century. We can assure you from long experience that the work, though challenging, is immensely satisfying—and fun!

PRESERVING A COMMON WEALTH OF BIRDS



Since its founding in 1896, Mass Audubon has understood that birds occupy a unique place in human consciousness. We also recognize that the loss of birds from our landscape is a worrisome signal—currently, we are witnessing an alarming worldwide decline in birdlife. Perhaps most disturbing: surveys undertaken over the last 40 years clearly show a steady decline in the populations of many species long considered “common,” such as the American kestrel, eastern meadowlark, and Baltimore oriole. The *Connecting People and Nature Campaign* focuses on five major initiatives that support a dual strategy of assessing the state of the Commonwealth’s birdlife while simultaneously taking action to protect those species we know need our help.

Help us answer the call

Breeding Bird Atlas II Massachusetts completed the first statewide breeding bird atlas survey in North America conducted over a five-year period during the 1970s. We are wrapping up the third season of *Atlas II*, which has already confirmed striking changes in Massachusetts birdlife over the last three decades. Many of the changes—such as the sharp decline in the population of American kestrels—are significant and disturbing. Not content to only document this bad news, we have already begun work on a kestrel research and restoration project.

Birds to Watch Now in its seventh year, this program focuses on those species that still seem fairly common

but that scientific studies show are in gradual, steady decline. It is also a creative and fun citizen science program involving as many people as possible to help monitor bird population trends in their own communities. Our initial project, collecting baseline data on Baltimore orioles, has attracted thousands of participants. Our goal? To expand the *Birds to Watch* program to focus on additional species and involve even more citizen scientists. And with your help, we’ll kick that expansion off this spring as part of our effort to assist the American kestrel.

Commonwealth of Birds Report

Mass Audubon recognizes the need to adequately collect, store, and disseminate information on the current status of Massachusetts birds. To meet this need, we have embarked on an ambitious project to create a comprehensive and reliable resource for the public, conservationists, and policy makers. This biannual, online publication helps analyze all the relevant information, describe current threats, and set practical priorities that will help promote action on behalf of birdlife.

Important Bird Areas (IBAs) This program assesses habitat “from the birds’ point of view.” In 2001, Mass Audubon assembled a committee of avian experts to identify those localities that are of the greatest value to Massachusetts birdlife. The 79 sites that were identified across the state are part of an international program that, through designation and public awareness, has identified nearly 900,000 acres of prime bird habitat in the Commonwealth. Mass Audubon scientists are currently developing site-specific strategies for protecting each IBA.

Coastal Waterbird Program Terns, piping plovers, and other shorebirds are among the most threatened bird communities worldwide because of intense pressure on their fragile habitats. This program represents hands-on conservation at its best and has become a national model. Dedicated interns and volunteers work alongside Mass Audubon staff to monitor shorebirds’ populations at more than 100 coastal sites and create working relationships with federal, state, and local governments as well as private landowners to protect these magnificent birds.

Our work involves expert and casual birders alike. With your support, we are working to help reverse the declining populations of some of our most threatened birds and to save other species that otherwise might be in peril.

You can learn more at www.massaudubon.org/birds; and while you are there, sign up for *The Warbler*, our statewide e-newsletter on birds, birding, and bird conservation.



PROTECTING LAND AND HABITAT

Since establishing Moose Hill Wildlife Sanctuary nearly a century ago, Mass Audubon has identified, acquired, and managed land throughout the state that provides a home for native species—both common and rare—and serves as a natural haven for people from an increasingly busy and developed world. Mass Audubon now protects over 34,000 acres of land in rural, suburban, and urban communities. And through our statewide network of wildlife sanctuaries in nearly 90 Massachusetts communities, we welcome more than 700,000 adults and children each year.

Our irreplaceable asset

Our land protection work is far from finished. The Commonwealth continues to lose a significant amount of valuable habitat each year to development: 22 acres per day in the first half of this decade, according to Mass Audubon's influential 2009 report, *Losing Ground: Beyond the Footprint*. The report also states that critical open space remains unprotected—including land in the rapidly expanding “sprawl frontiers” west and southeast of Boston—and much of it is all the more valuable since it provides habitat for globally rare plants and animals.

To meet the challenge of habitat loss, Mass Audubon proactively selects and focuses on the permanent conservation of key habitat. Land protection plans direct our work at each of our sanctuaries,

where we have identified and prioritized key properties according to their ecological value, proximity to our sanctuary, and connectedness to other protected land. These plans are grounded in the most current, science-based information available.

Through the *Connecting People and Nature Campaign*, our focus is raising funds for direct acquisition of land and its stewardship to ensure its long-term protection.

Here's how you can help.

Read: Stay up-to-date on our most urgent land projects—in your community and across the state—as well as on the individuals and organizations working together to make them happen.

Enjoy: Our statewide network of wildlife sanctuaries provides countless



opportunities to explore wildlands that have been protected, thanks to the help and support of our members, donors, and partners. Just recently, three new sanctuaries have been open to the public—Burncoat Pond Wildlife Sanctuary in Spencer, Lynes Wildlife Sanctuary in Westhampton, and Attleboro Springs at La Salette in Attleboro.

Get Involved: Learn about your city or town's open space plan. Then support legislation and funding to protect those properties of significance—especially those that are threatened by development or may come on the market soon. Land is permanently protected and lost almost daily through the actions of town boards and committees.

Give: Mass Audubon acquires land with classic New England thrift: *For every \$1 we spend, we protect \$8 worth of critical habitat.* But land is very expensive in Massachusetts. No gift is more lasting and more valuable to the preservation of nature than a gift of land or the funding to acquire it. The Mass Audubon Land Fund provides a perfect opportunity to do so.

You'll find links to all this and more on our website

www.massaudubon.org/land.

The Mass Audubon Land Fund

There are times when a naturally rich landscape is available for purchase on short notice. Therefore, we have launched the Mass Audubon Land Fund, which will be used for rapid response to land protection opportunities.

This is a **proactive** and **visionary** statewide model for fundraising. With additional financial resources in hand and an active approach, we can substantially expand the impact of our land protection efforts during this time of opportunity.

The time for bold action? *Now.*



BUILDING CONSERVATION COMMUNITIES



From Mass Audubon's founding, its leadership always believed that just as important as protecting wildlife was the necessity of reaching out to *people* and creating *communities* of conservationists working to protect the nature of Massachusetts.

Through our *Connecting People and Nature Campaign*, we do this in many different ways.

Finding wonder, taking action

Our Sanctuaries, in addition to being refuges for wildlife, are places where people of all ages and diverse backgrounds from surrounding communities come together to learn, to work on local environmental issues and to enjoy the many pleasures to be discovered in our woods and fields and wetlands. Each of our staffed sanctuaries is a microcosm of Mass Audubon as a whole, with the same overarching conservation goals. But each also has its own distinctive personality and ways of working in the communities where they are located. Here is just a sampling.

- Our Berkshire Sanctuaries engage local activists to protect the imperiled Housatonic River watershed and offer "On the Water" programs for thousands of children.
- Boston Nature Center in Mattapan brings urban residents to nature and vice versa and provides a haven for "out-of-school" time, including summer day camps and after-school enrichment programs.
- At Wellfleet Bay, we engage teams of "citizen scientists" to rescue and study stranded sea turtles and threatened diamondback terrapins.
- Joppa Flats opened its doors to a newly constructed Children and Family Classroom, which provides



much-needed space for our popular children's programs in Newburyport.

Our Advocacy Staff, with offices on Beacon Hill, the North Shore, Worcester, and Taunton, engages with any community willing to work with us to enhance protection for the Massachusetts environment. Consider the following recent accomplishments.

- Played a major role in preparation of the nation's first Ocean Management Plan, resulting in our recent appointment by Governor Patrick as the environmental representative to the 17-member Ocean Advisory Commission.

- Formed a partnership with building owners and Mayor Menino's office to create Lights Out Boston, a program to darken city high-rise buildings at night during migration peaks, potentially avoiding the deaths of millions of birds and reducing lighting costs and energy consumption.
- Published Mass Audubon's *Losing Ground (IV): Beyond the Footprint* (released May 18, 2009), which revealed that many new houses built today are bigger and more energy intensive than ever, and that sprawl continues to threaten many of our more rural communities and watershed areas. In response to these trends, Mass Audubon is providing assistance to help communities chart a more sustainable future for the benefit of both people and wildlife through our *Shaping the Future of Your Community* Outreach and Assistance Program.

Our Science and Climate Change work provides the intellectual credibility and technical skills that ensure respect for Mass Audubon's contribution to a wide spectrum of activities in the scientific, governmental, and education communities, as well as with the general public. We create practical models for solving ecological problems. We also offer an Ecological Extension Service that conducts biological surveys and recommends ecological management strategies to municipalities and other landowners. It ensures that information about ecology, resource management, and other topics is based on the best available science.

www.massaudubon.org

Our website provides innumerable opportunities to join one of Mass Audubon's communities.

THE FUND FOR NATURE

We are committed to our vision:

A Massachusetts in which nature—whether found in a city park or deep inside the forests of western Massachusetts or within an urban greenway or along the 1,500 miles of Massachusetts coastline—is valued as essential to the quality of life in the Commonwealth, and where people live with appreciation and respect for the complex ecological systems that sustain life on earth, working together to ensure that they are protected.

Innovation, Collaboration, Action



Connecting People and Nature Every Day

Mass Audubon is extraordinarily fortunate: We have had generous support for well over 100 years by people who believed in our vision (noted above). Many people choose to support the ongoing operating needs of Mass Audubon, giving much-needed funds above and beyond their generous campaign gifts and critical membership support. We honor that spirit of giving with The Fund for Nature, which embraces the comprehensive approach of our *Connecting People and Nature Campaign*.

Conservation is expensive in the best of times. With the array of effective conservation initiatives reflected in the *Connecting People and Nature Campaign* and described in this issue of *Connections*, it is easy to overlook the fact that our success is grounded in the core of the organization—hiring and retaining excellent staff, maintaining our facilities, expanding our programs to meet the needs of an ever-changing constituency, and retaining the flexibility and resources to “turn on a dime” in the event of a conservation opportunity or crisis. The Fund for Nature helps accomplish all of that and more. *Thank you for your support!*

Get Involved

We are making progress every day toward our ambitious goals of *Connecting People and Nature*. And we have many new and exciting activities planned for 2010: free events, a photo contest, the return of Mass Audubon’s Sanctuary Passport program, and other surprises. You can request a *Connecting People and Nature Campaign* case statement by contacting us at 781-259-2133 or development@massaudubon.org. Be sure to check out www.massaudubon.org/connecting for the latest news and successes.

We hope you will join us!





BIRDING Beyond the Backyard

Birds & Beans

Mass Audubon has partnered with Birds & Beans,™ a Bird Friendly® coffee company dedicated to fostering migratory bird conservation in Latin America. This company recognizes the need for effective habitat preservation for such colorful and familiar Massachusetts bird species as the wood thrush, scarlet tanager, and Baltimore oriole. These species and many others regularly depend upon shade-grown coffee plantations as winter habitat.

And by purchasing this coffee, you can make a contribution to Mass Audubon's bird conservation efforts. For every Massachusetts Birds & Beans customer or online subscriber, the Important Bird Areas program will receive \$1 per month.

For more information or to order coffee, visit www.massaudubon.org/birdsandbeans.



FOR MASS AUDUBON MEMBERS:

Receive a free, autographed, hardcover copy of *Silence of the Songbirds* by Bridget Stutchbury. Mail a Birds & Beans bag label by March 31, 2010 to: Birds & Beans LLC, Suite 506, 15 River Street, Boston, MA 02108.

What's the Buzz About Bird Habitat and Coffee?

by Wayne Petersen, Director, Important Bird Areas Program

More than 75 years ago, the late Harvard University ornithologist Ludlow Griscom noted that in Guatemalan coffee plantations birdlife appeared little affected in areas where much of the native forest vegetation was left relatively undisturbed. Since Griscom made these observations, ornithologists have increasingly taken an interest in the birds residing in coffee plantations. Among the most compelling studies were those conducted by scientists at the Smithsonian Migratory Bird Center (SMBC), which established an unequivocal correlation between avian diversity and differing methods of coffee propagation.

Coffee—a plant native to East Africa and now widely naturalized throughout tropical Latin America—is, in its ancestral condition, a shade-loving shrub that grows best beneath a multi-storied canopy of shade. But what's the connection between coffee propagation and birds? As with many economically important plants, "improved" coffee strains were developed to quickly grow in direct sunlight for easier harvest than the slower growing and carefully harvested shade-grown coffee.

Unfortunately, to grow coffee in open sunlight, native forest habitat is removed and chemical fertilizers, herbicides, and pesticides are applied to achieve a sustainable annual coffee harvest. With the removal of a complex, shade canopy of tropical vegetation, avian diversity is significantly diminished in sun-grown coffee plantations. In fact,

virtually all biodiversity is compromised whenever there is wholesale alteration and destruction of native habitat.

Increased research and monitoring of shade-grown versus sun-grown coffee plantations in Latin America has demonstrated that many North American migratory songbirds regularly depend upon shade-grown coffee plantations as winter habitat. In contrast, most sun-grown coffee plantations are practically devoid of birdlife. Additionally, much coffee grown as a monoculture in direct sunlight is inferior in flavor to coffee grown more slowly under organic, mixed-shade conditions. These realities underscore that shade-grown coffee is better for birds, if not also a better product for consumers.

Through the SMBC, a Bird Friendly® coffee certification now exists to inform consumers when a coffee brand meets ecologically sound propagation standards. This independent certification also ensures that 100 percent of the beans are shade grown. So, by drinking Bird Friendly® coffee, consumers know that their java is of the highest quality, is organically grown, and comes from a plantation where the integrity of tropical forest is not compromised. What's more, each purchase contributes to helping migratory songbirds find a secure winter home. Now *that's* a powerful brew!



Scarlet tanager

Save the Date!
Massachusetts Birders Meeting
March 6, 2010
Bentley University, Waltham, MA
www.massaudubon.org/birdersmeeting



Childhood Adventures in Nature

When he was a boy, John James Audubon, naturalist and artist, wandered through the woods, collected things from nature, and observed birds. And ecologist and author Rachel Carson wrote that sensitivity to natural beauty must be awakened, nourished, and stimulated in formative years by a caring adult who will take a child by the hand and enjoy a walk through nature.

Similarly, Mass Audubon engages children with nature at an early age because it's vital to their growth and awareness of the world around them. Two Mass Audubon sanctuaries offer preschool programs licensed by the Massachusetts Department of Early Education and Care. "Our preschool programs instill values by creating a sense of place," says Director of Education and Diversity Gloria Villegas-Cardoza. "When children explore nature, it encourages conversations at home with family and it stimulates curiosity and creativity."

Drumlin Farm Community Preschool in Lincoln blends hands-on learning with outdoor exploration. Youngsters ages 3 to 6 participate in farm chores, create artwork, and explore the forest, farm fields, and pond habitats. Children also experience seasonal activities such as growing vegetables and making maple syrup.

And since 1976, **Arcadia Wildlife Sanctuary** in Easthampton has offered a nursery school program. The curriculum is nature based, and preschoolers ages 3½ to 5 explore nature outside every day. Some of the varied activities include picking fruit and making jelly and apple sauce, learning about and raising monarch butterflies, and observing sanctuary plants and wildlife.

"Offering preschool experiences helps acquaint children with the natural world in a safe, protected environment where they can continue to reconnect over time," says Villegas-Cordoza. "We hope they will retain those experiences, which, if nurtured, will result in their becoming environmental stewards."

▲ Gina King



Nature Programs for Preschoolers

In addition to Mass Audubon's two licensed preschools, we offer regular programming for young children at our sanctuaries statewide. Programs are updated throughout the seasons and engage children in multiple ways. For information about upcoming preschool programs, please visit www.massaudubon.org/preschools or call the sanctuary.

Arcadia Wildlife Sanctuary,
Easthampton, 413-584-3009 ext. 818

Boston Nature Center,
Mattapan, 617-983-8500

Broadmoor Wildlife Sanctuary,
Natick, 508-655-2296

Drumlin Farm,
Lincoln, 781-259-2224

Habitat Wildlife Sanctuary,
Belmont, 617-489-5050

Ipswich River Wildlife Sanctuary,
Topsfield, 978-887-9264

Joppa Flats Education Center,
Newburyport, 978-462-9998

Moose Hill Wildlife Sanctuary,
Sharon, 781-784-5691

North River Wildlife Sanctuary,
Marshfield, 781-837-9400

Stony Brook Wildlife Sanctuary,
Norfolk, 508-528-3140

Wachusett Meadow Wildlife Sanctuary,
Princeton, 978-464-2712

Visual Arts Center,
Canton, 781-821-8853, ext. 101

Owls

Majestic, mysterious, and magnificent predators, owls hunt mostly at night and roost during the day. If you hear a mob of chickadees or crows, you may see a roosting owl nearby. Of the more than 200 species of owls around the world, eight regularly occur in Massachusetts. Try these activities and then, for more fun with owls, visit www.massaudubon.org/go.



Parent/Teacher Note

Skills Learned: Concepts—habitat, anatomical adaptations, predator-prey relationships, food webs, and life cycles
Skills—Observation and role-playing

Habitat Hunt

Search your backyard or neighborhood. Can you find any of these things that are part of an owl's habitat?

- A small animal (a chipmunk or mouse) for an owl to eat
- A place where a small animal could be safe from a hungry owl's reach
- An open area where an owl might hunt for food
- A spot where an owl could roost, such as a dense evergreen tree



Heads Up

How far can you turn your head? Owls, with 14 different bones in their neck, can turn their heads nearly three-quarters of the way around. People, with just 7 different neck bones, can typically turn their heads around only about halfway.

Owl Prowl

Go out on a winter night and listen for owls calling. Ask a birdwatcher to help you pick the best time and location. If you want to go owling with a Mass Audubon naturalist, check out our owl programs (see link below).

www.massaudubon.org/owls

- Learn about upcoming Mass Audubon owl walks, our snowy owl project, and species of owls found in Massachusetts
- Get instructions for building an owl nesting box
- Listen to owl calls or report sightings of owls

Spring into Sustainability!

We often hear about the need to conserve energy, save water, and become more "green." It is important, it is up to us, and it can be lots of fun! During March and April, Mass Audubon sanctuaries will offer programs focusing on sustainability and living a "greener" life. A few of the highlights: Boston Nature Center, Broadmoor in Natick, Joppa Flats in Newburyport, and Wellfleet Bay will offer free, self-guided, green-building tours. And at the North River sanctuary in Marshfield, children can become a power ranger for the day and learn simple ways to help care for the earth at Earth Day Extravaganza. This spring, join us and see how simple and fun it is to be green.

For more information on sustainability programs being offered across the state, visit www.massaudubon.org/sustainable.

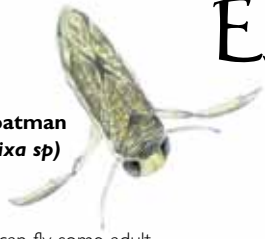
Do you have a personal sustainability success story? If so, post it on our Green Blog at www.massaudubon.org/blogs.

EXPLORING THE NATURE OF MASSACHUSETTS

by Lucy Gertz, Visitor Education Coordinator

Water Boatman
(*Arctocorixa sp.*)

Though they can fly, some adult insects remain in the pond during winter, staying active under the ice.



Under the Ice— Winter Pond Life

Crystalline branches crackle overhead. A cold wind howls. Dried seedpods glide over the ice. Winter is a picturesque and subtly musical season, but it is also the harshest season when living creatures must avoid freezing to death and find food to survive.

When pond water turns cold in late autumn, fish, some aquatic insects, mollusks, and worms move to the pond bottom. Some species of turtles, frogs, and salamanders burrow into the mud, where they will remain mostly inactive until spring. These depths are where the water remains warmest.

A pond freezes from the top down, starting with a thin blanket of surface

Eastern Painted Turtle (*Chrysemys picta*)

Though some late hatchlings overwinter in shoreline nests, most painted turtles spend winter burrowed into mud or amid plant debris at the bottom of the pond.



Red-spotted Newt
(*Notophthalmus viridescens*)

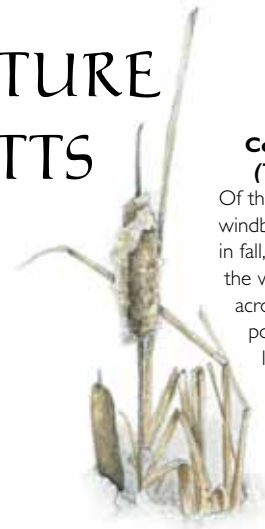
As juvenile red efts, these salamanders overwinter on dry land, but as adults, some remain in the deeper water of a pond, staying active though sluggish through winter.

ice. Ice is a good insulator, so when air temperatures plunge below freezing, the pond water below remains a bearable few degrees warmer. This insulation, along with other unique properties of water, prevents bottom layers from freezing, allowing many animals to overwinter.

Almost magically, it all works. Animals' bodies cool along with the water, minimizing their metabolic demand for food and oxygen. Cold water holds more dissolved oxygen and oxygen levels are further enhanced by water weeds carrying out a small amount of photosynthesis from the sunlight that gets through the surface ice. And fallen leaves, settled in layers along

Common Cattail
(*Typha latifolia*)

Of thousands of tiny windblown seeds released in fall, some may spend the winter skittering across an ice-covered pond, landing in ideal locations for growing along the shore in spring.



the pond floor during the autumn, become “winter blankets” insulating the small creatures wrapped within.

A frozen pond may seem devoid of life, but look closely on a sunny winter day and you may spy a yellow perch or red-spotted newt slowly swimming by. You might observe a mass of beetles swirling in a break in the ice. Witness this habitat, with its inhabitants brilliantly adapted to winter.

Yellow Perch
(*Perca flavescens*)

Both ice anglers and otters maintain one or more fishing holes in the ice in pursuit of these active winter swimmers.



Illustrations by Kristin Foresto

Visit a pond this winter at one of these sanctuaries but remember—never go out on the ice.

Broadmoor, Natick—At Vernal Pool overlook, mixed species of birds flock, searching the pond edge for food. On sunny late winter days, you might observe insects in this small microcosm.

Central Cape Cod—Look for otter slides, pull-outs, and scat with fish scales at Ashumet Holly's Grassy Pond. Otters frolic along Skunknett River's West Pond and on Long Pasture's Night Heron Pond.

Felix Neck, Edgartown—Sengekontacket Pond rarely freezes, but you may see icy crusts on the

edge of this coastal salt pond. Watch for seals that periodically enter the pond and haul out on the salt marsh.

Habitat, Belmont—While eastern painted turtles overwinter in the mud bottom of Turtle Pond, you might see golden shiner fish and water boatmen swimming under the ice.

Laughing Brook, Hampden—Sit quietly at the teaching station overlooking the pond. Watch for skunk cabbage in later winter along the bank, often blooming before the snow melts.

Oak Knoll, Attleboro—Along Lake Talaquega's wooded shoreline, search for frozen tracks of resident foxes, deer, skunks, and possums.

Stony Brook, Norfolk—When the marsh glazes over, listen for crackling of ice as Canada geese push their way through like ice-breaking ships. Less intrepid geese follow in the newly cleared channel.

For more information:

www.massaudubon.org/sanctuaries

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WINTER PROGRAM SAMPLER

A snapshot of programs from among hundreds that Mass Audubon offers this season at our wildlife sanctuaries

Moonrise Walk

January 29: 4-6 pm
ALLENS POND, Westport, 508-636-2437

Tracking Porcupines and Fishers at Graves Farm

January 30: 10 am-1 pm
ARCADIA, Easthampton, 413-584-3009

Maple Sugar Days

March 13 & 14: 10 am-4:30 pm
BLUE HILLS, Milton, 617-333-0690

Guided Snow Shoe Hike

January 23: noon-1 pm
BOSTON NATURE CENTER, Mattapan,
617-983-8500

Basics of Winter Gull Identification

February 11: 7-9 pm
BROAD MEADOW BROOK, Worcester,
508-753-6087

Owl Festival

February 6 Live Owl Show 3-4:15 pm;
All Ages Owl Prowl 4:30-6 pm
BROADMOOR, Natick, 508-655-2296

Woolapalooza

March 27: 10 am-4 pm
DRUMLIN FARM, Lincoln, 781-259-2200

Senior Strolls

February 10 & March 10: 10:30-11:30am
FELIX NECK, Edgartown, 508-627-4850

Bald Eagles and Snowy Owls Field Trip

January 30: 8 am-2 pm
HABITAT, Belmont, 617-489-5050

Coastal Tracking on Plum Island

January 23, 9 am-12:30 pm
IPSWICH RIVER, Topsfield, 978-887-9264

Wednesday Morning Birding

Every Wednesday: 9:30 am-12:30 pm
JOPPA FLATS, Newburyport, 978-462-9998

Maple Sugaring Festival

March 14, 20, & 21: 11 am-3 pm
MOOSE HILL, Sharon, 781-784-5691

Eagles at Quabbin

January 23: 10 am-2:30 pm
PLEASANT VALLEY, Lenox, 413-637-0320

Owls and Omelets

January 16, 5:30-7:30 am
SOUTH SHORE, Marshfield, 781-837-9400

Drawing Birds & Winter Nature with Clare Walker Leslie

March 20: 10 am-4 pm
VISUAL ARTS CENTER, Canton, 781-821-8853

Winter Sampler

Senior Walks: January 21 & 28; February 4, 11,
18, & 25; March 4 & 11: 10:30 am-noon
WACHUSETT MEADOW, Princeton,
978-464-2712

Cape Cod Natural History Conference

April 3: 9 am-3 pm
WELLFLEET BAY, Wellfleet, 508-349-2615

Wildwood Spring Alum Event

May 22 (call for times)
WILDWOOD, Rindge, NH, 866-627-2267

For a full listing of Mass Audubon programs
and events, visit our online catalog.

www.massaudubon.org/programs

Their Love of the Land

by Bob Wilber, Director of Land Protection

The connection between people and land can be extremely powerful and take many different forms. The relationships vary—from properties retained for generations in family ownership to those that provide unique experiences with nature, hold special memories, or rejuvenate one's soul. The common thread: how people and place interrelate and define each other. A person's identity may be defined in part by an affinity with land, and a special place may in turn be defined by the human values attributed to it. Mass Audubon has had the pleasure to work with many landowners who care deeply about their land, both for the role it has played in their lives and for how it benefits other people and nature. Following are examples of generous people who have left a legacy of land for all to enjoy.

Preserving Nature

In 1951, Dick (who passed away in 2007) and Alan Emmet moved from Cambridge, Massachusetts, to the then agricultural community of Westford in central Massachusetts because they wanted to live where they could regularly enjoy nature walks. In the ensuing years, when neighboring farmers retired, Dick and Alan would purchase the land because they

knew that it would otherwise be easily developed. "We never intended to build ourselves an empire," said Alan. Indeed, they never intended to keep it just for themselves, recognizing that opportunities to experience nature are an essential part of life for people in their community. Their values and generosity are directly responsible for more than 270 acres of what is now Mass Audubon's Nashoba Brook Wildlife Sanctuary.

Love of Wildlife

Bob Minery feels a deep connection with his land in the Berkshires. He has lived for more than 50 years in a modest home with no electricity, telephone, or running water. He gathers water from a spring at the base of the hill each morning and is fully in tune with the rhythms of nature around him—often recounting his latest wildlife sighting, or observations associated with the changing seasons, or sharing stories of rambling the local woods in his youth. His conservation ethic allowed him to reject numerous offers from developers to buy his land for its "million-dollar view," and instead to sell 55 acres of it to Mass Audubon in 2005 for less than its appraised value. It is now part of what will eventually become the Cold Brook Wildlife Sanctuary in western Massachusetts.

Family Roots

Dan and Peg Arguimbau of Sharon are profoundly tied to their land, and worked with Mass Audubon to protect it. The Arguimbau family has farmed the land since the early 1930s. It contains woods, wetlands, and fields with productive agricultural soils, and provides protection for the Massapoag Brook—a tributary to the Neponset River. It also includes



portions of a townwide hiking trail corridor known as the Massapoag Trail. Dan and his uncle, Lawrence Arguimbau, granted Sharon's first conservation restriction in 1971 on a small portion of the farm. Today, more than 35 acres of the farm are permanently protected. "Next to my family, this land has been the great love of my life and it was an easy choice to preserve," says Dan Arguimbau.

The Emmets, Arguimbaus, and Bob Minery—different people from different places—fortunately for all of us share a common bond in their enduring love for their land and in their commitment to protect it.



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For more stories, visit
www.massaudubon.org/land

SMILE! SEE WHAT'S ON DRUMLIN FARM'S WILDLIFE CAMERA



Intel workers James Bellemare (behind tree) and Kevin Shaughnessy install a motion-sensing camera with Mass Audubon's Renata Pomponi.

What started as a neighborly conversation between Intel Massachusetts Corporate Affairs Manager Ann Hurd and Drumlin Farm Volunteer Coordinator Pam Sowizral has blossomed into a perfect partnership: Intel employees are working with Drumlin Farm staff to improve educational services and bring visitors closer to the natural world. "By building a relationship with Mass Audubon, Intel has engaged our employees in appealing volunteer projects and we have an opportunity for greater impact in the community," says Hurd.

As part of its Intel® Involved program, Intel Massachusetts awarded a grant to Drumlin Farm that provided for mobile wildlife cameras and related technology, habitat enhancement, and a visitor viewing station. The company has also donated the time and talent of many personnel to help Mass Audubon

educate others about the natural world.

"There is gratification in using my skills to help Mass Audubon staff implement technology that will improve the services they provide," explains Kevin Shaughnessy, Intel Massachusetts IT operations manager and a member of an Intel team that helped select and test a high-tech motion-triggered video recording system. Packaged in a weatherproof housing, these unobtrusive digital video cameras capture

wildlife movement and sound in full color during daylight and infrared at night. Last fall, members of the Intel team helped to install the cameras, and Drumlin Farm staff experimented with cameras in different locations

for viewing through a new interactive kiosk at Drumlin Farm scheduled to open this spring. The videos will also be available on the sanctuary's website for viewing in classrooms and homes. "We are giving people broader access to the farm by using technology to let visitors see what happens when they aren't here," says Renata Pomponi, visitor education and interpretation coordinator for Drumlin Farm.

Intel employees have supported Mass Audubon's mission in more ways previously. Last year, a team of 13 Intel engineers built more than 100 American kestrel nesting boxes for use with Mass Audubon's Birds to Watch citizen science program. And another 90 Intel volunteers cheerfully spent a day planting a native wildlife garden—with 13 trees, 128 bushes, and more than 450 perennials and native grasses—along an all-person's-accessible path at Drumlin Farm. "The Intel volunteers are *wonderful*," says Sowizral. "They are energetic, enthusiastic, and willing to

"By building a relationship with Mass Audubon, Intel has engaged our employees in appealing volunteer projects and we have an opportunity for greater impact in the community."

—Ann Hurd, Intel Massachusetts Corporate Affairs Manager

around the sanctuary to capture footage of roaming mammals and birds.

In this "high-tech meets farm-tech" project, wildlife footage from the cameras will be coupled with educational videos of seasonal farm activity, such as sheep shearing or cow milking. The resulting library of film clips will be available

work hard. And I imagine it's a nice change of pace for them to get out of their offices and into the fresh air."

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The Natural Inquirer

by John Galluzzo, Education Coordinator, South Shore Sanctuaries

Q: I've heard that some years there are big "invasions" of owls in the fall and winter. Why does this occur?

A: The answer requires more research, but one theory as to why these occasional invasions occur has to do with food supplies. Saw-whet owls, for example, migrate through Massachusetts every year, but when mice and voles are in abundance, saw-whet owls will overwinter in or near breeding grounds. During such bountiful times, the owl population can grow with the next breeding cycle. The risk then becomes that the owls can overwhelm the food source, especially if the following summer and fall are tied to a dramatic crash in the prey species. When the large number of predators depletes the limited prey, the owls move to find a new food source. That movement can be east to west as easily as north to south, but is usually made up of young birds. One saw-whet owl captured at the Daniel Webster Wildlife Sanctuary in Marshfield had previously been banded in Montana. Another theory is that when prey is abundant the owls have a good breeding year with more owls to move farther to find food.



Saw-whet owl

Natural fact: At 8 inches, the saw-whet owl is among the smallest owls in the world, but it is not the smallest. On average, the northern pygmy-owl is the most diminutive, although individual elf owls may be smaller.

The Natural Inquirer would like to hear from you: e-mail inquirer@massaudubon.org

Illustration: Barry Van Dusen©



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For more information, contact Betsy Watson at bwatson@massaudubon.org or call 781-259-2131.

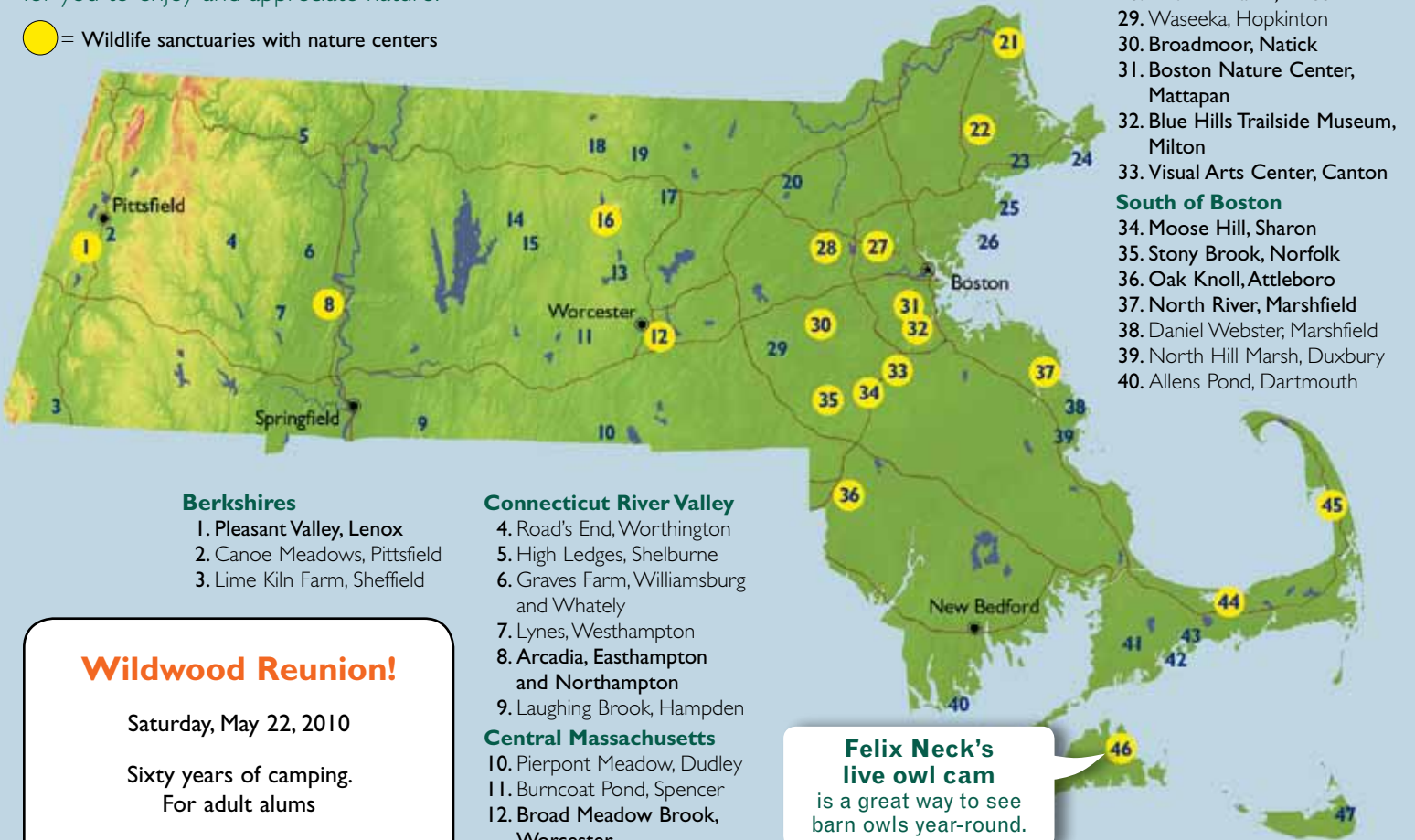
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 = Wildlife sanctuaries with nature centers



Berkshires

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

Connecticut River Valley

4. Road's End, Worthington
5. High Ledges, Shelburne
6. Graves Farm, Williamsburg and Whately
7. Lynes, Westhampton
8. Arcadia, Easthampton and Northampton
9. Laughing Brook, Hampden

Central Massachusetts

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

Greater Boston

27. Habitat, Belmont
28. Drumlin Farm, Lincoln
29. Waseeka, Hopkinton
30. Broadmoor, Natick
31. Boston Nature Center, Mattapan
32. Blue Hills Trailside Museum, Milton
33. Visual Arts Center, Canton

South of Boston

34. Moose Hill, Sharon
35. Stony Brook, Norfolk
36. Oak Knoll, Attleboro
37. North River, Marshfield
38. Daniel Webster, Marshfield
39. North Hill Marsh, Duxbury
40. Allens Pond, Dartmouth

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21. Joppa Flats, Newburyport
22. Ipswich River, Topsfield
23. Endicott, Wenham
24. Eastern Point, Gloucester
25. Marblehead Neck, Marblehead
26. Nahant Thicket, Nahant

Cape Cod and the Islands

41. Ashumet Holly, Falmouth
42. Sampsons Island, Barnstable
43. Skunknett River, Barnstable
44. Long Pasture, Barnstable
45. Wellfleet Bay, Wellfleet
46. Felix Neck, Edgartown
47. Sesachacha Heathlands, Nantucket