

Mass Audubon *Protecting the Nature of Massachusetts* **Connections**

SEPTEMBER – DECEMBER 2011

A NEWSLETTER FOR THE MEMBERS OF MASS AUDUBON

Shhh ... listen!

*Understanding the Message
within the State of the Birds Report*

see page 2

White-throated sparrow



www.massaudubon.org/connections

Connections is published three times each year in January, May, and September.

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Listening to the Birds

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



American kestrel

Birds have played a uniquely significant role in the evolution of the popular movement to protect the natural world. Perhaps this is not so surprising. In their beauty, variety, musical ability, and power of flight, birds embody all of the qualities that we find most moving in wild nature. In their heroic migratory journeys and their ability to survive the harshest of conditions, they inspire admiration—yet their apparent sensitivity to subtle threats gave rise to our most vivid metaphor for warnings of danger: the canary in a coal mine.

Mass Audubon was founded in 1896 as a plea to the American public to put an end to the slaughter of egrets and other plume birds for the trivial purpose of decorating hats. But the passionate response unleashed by founding mothers Harriet Hemenway and Minna Hall was not just an expression of outrage for beautiful creatures carelessly destroyed.

There was also a growing sense that nature itself was threatened. The public was beginning to awaken to some unfamiliar and disturbing insights about the relationship between humanity and the natural world: that we now held the power to eliminate entire species; and that the mass extinction of birdlife might carry with it a chilling presentiment of our own future.

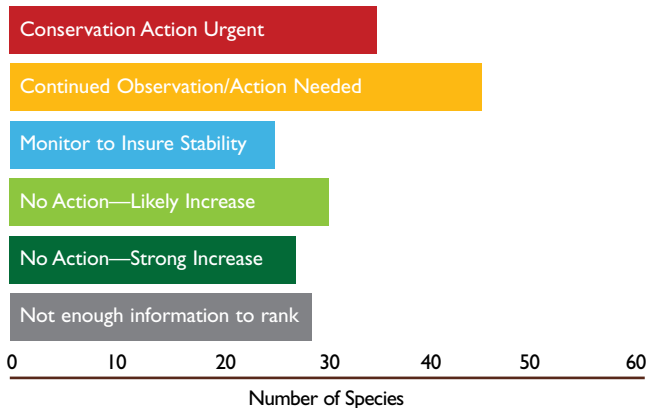
According to BirdLife International, 20 percent of the world's bird species are threatened with extinction or nearly so, and almost a third of North American bird species are endangered, threatened, or declining. But the fate of flightless

Eastern meadowlark



Using information from the *Massachusetts Breeding Bird Atlas*, *USGS Breeding Bird Survey*, *National Audubon's Christmas Bird Count*, and other species-specific surveys from sources such as MassWildlife, we assessed the conservation status of each of the Commonwealth's breeding birds. Almost 20% (39) of the breeding birds of the state are urgently in need of conservation action (red), and an additional 23% (51) must continue to benefit from current conservation actions or may need conservation attention in the coming years (yellow).

CONSERVATION STATUS OF OUR BREEDING BIRD SPECIES



rails on remote Pacific islands or even the plight of threatened gnatcatchers in California, though registered as unfortunate by most people, may seem like someone else's problem, posing little harm to our own well-being. If you are a Massachusetts birdwatcher, you cannot have helped but notice the sharp decline in many birds we once thought common, such as the American kestrel, eastern meadowlark, and purple finch.

But don't bird populations always fluctuate? And many birds—Cooper's hawk, red-bellied woodpecker, Carolina wren—are clearly increasing. Doesn't it all balance out? So, there's really nothing to worry about. Or is there?

A Closer Look

Last fall, a group of Mass Audubon scientists, naturalists, policy specialists, and educators began working on an analysis with the title *State of the Birds: Documenting Changes in Massachusetts Birdlife*. This substantial document is based on preliminary results from our

nearly completed Massachusetts Breeding Bird Atlas 2 (BBA2), which began in 2007. The report is also based on other persuasive trend data, including the North American Breeding Bird Survey (BBS), comprising 55 years' worth of repeated bird survey routes (24 in Massachusetts); the Christmas Bird Count, begun in 1900, and capturing trends in wintering birds; 40 years of bird banding records from the Manomet Center for Conservation Sciences in Plymouth; and several other long-term sets of data compiled on selected groups of birds by MassWildlife. (Please refer to the folded insert in this issue for a more visual understanding of the *State of the Birds* results.)

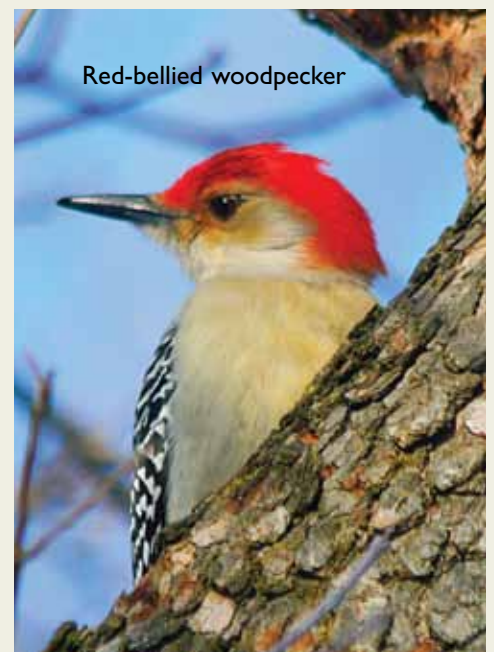
Our analysis certainly offers some good news about the state of the Commonwealth's birdlife. For example, our populations of bald eagle, osprey, and eastern bluebird—all species that suffered severe declines in the recent past—have made spectacular recoveries, largely resulting from management strategies based on sound science and on-the-

ground support from thousands of citizen conservationists. For instance, the construction of osprey platforms and bluebird boxes by volunteers directly contributed to the revival of these two species. It is also evident that Massachusetts birdlife is growing richer in species (partly as a result of a warming climate, with southern species moving north as our region grows more temperate) and that our cities and suburbs are providing office-building and skyscraper habitat for increasing numbers and kinds of birds, including such iconic species as the peregrine falcon.

On the other hand, some of the trends that emerge from the data are disturbing. It's not just in birders' imaginations that populations of a number of formerly common species have declined precipitously.

For example, the exquisite American kestrel has declined by 29 percent in the state between 1980 and 2008, according to the BBS, and nest records dropped by 41 percent between Breeding Bird Atlas 1 (1975-1979) and BBA2. Once common all over Cape Cod, the little

Red-bellied woodpecker



falcon is now all but extinct there. What's more, no obvious single cause for the decline is evident, pointing perhaps to some combination of factors.

The birdlife of certain habitats (e.g., grassland and shrubland) is suffering especially steep declines, as are ground-nesting birds—possibly linked to increased predation and deer browsing. Perhaps of most concern: Populations of many “backyard” species that are still locally numerous and superficially appear to be thriving (e.g., white-throated sparrow, song sparrow, flicker, and even blue jay) have lost ground steadily over recent decades, with the rate of decline rising as time goes on.

Learn More and Get Involved

Our *State of the Birds* report includes detailed accounts of individual species, habitats, and overall trends; descriptions of the major threats facing Massachusetts birds; recommendations on how to reverse or stabilize some of the declines, including actions that all of us can take to help our native bird populations; and a reminder of the many benefits that birds bring to our lives. It also contains many easy-to-understand tables and a wealth of spectacular photographs of Massachusetts birds and their habitats.

Further, we have added a major new component to our website (at www.massaudubon.org/stateofthebirds), giving access to the data we used in drawing our conclusions, including species-by-species trends. This website will be updated as we continue to monitor trends in Massachusetts birdlife.

We believe that this is the most detailed and comprehensive analysis ever undertaken on the status of Massachusetts birds and that it contains important implications for the quality of human life as well as birdlife. We urge you to give it a thorough reading, and, if you are as moved by its conclusions as we have been, we hope you will join us in taking action on behalf of our common wealth of birds.

Robert Verity Clem



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Ipswich River: Room to Grow

Ipswich River, one of Mass Audubon's largest and most popular wildlife sanctuaries, is about to get a major makeover. And the more than 36,000 people who visit each year will be the chief beneficiaries.

This bustling center for environmental education and nature exploration in Topsfield has undergone tremendous growth over its 60-year history. Fulfilling Ipswich River's evolving potential, however, requires expanded indoor space for serving the growing number of visitors and program participants who walk through the door and onto the trails every day. It also demands new infrastructure to meet the nature center's commitment to accessibility and increasingly broad public engagement.

With more than 22 years at Ipswich River, Sanctuary Director Carol Decker has witnessed its transformation into a North Shore hub for connecting with nature.

"I cannot express how thrilling it is to watch our programs flourishing, and our staff growing as we respond to the expanding number of individuals, families, and groups. Yet our buildings have not grown to accommodate the

numbers and needs of our visitors," Decker says. "We have incredible staff, from our field teachers and property crew to volunteer

weekend docents. They need and deserve facilities that allow us to engage and guide the greatest number of people in the most productive ways we can."

Now it's happening, thanks to *The Campaign for Ipswich River Wildlife Sanctuary*.

The \$900,000 renovation/expansion will result in a sanctuary experience that welcomes people to a new and accessible Visitor Center in a bright and friendly atmosphere. It will also create a collaborative workspace for more than 30 educators and bolster Ipswich River's conservation and stewardship activities.

The project, with a goal to meet our ambitious fundraising target by December 2012, is planned in two phases:

PHASE I (underway) – \$395,000

Bradstreet House Gateway—The centerpiece of a welcoming, all-persons-accessible entryway will be a new visitor center and gift shop, to be created by enclosing and renovating the current porch area. An accessible bathroom will also be built to accommodate staff, volunteers, and visitors.

PHASE II – \$505,000

The Educators' Place—A working environment for teachers to plan activities will be created in the footprint of the current maintenance workshop. Features will include work tables, ample storage for

materials, and a corridor linking the new space to Bradstreet House.

Conservation Barn—Property stewardship and maintenance, currently spread across three outdated buildings, will be consolidated in a single new structure. This project will allow for the removal of the maintenance garage adjacent to the main parking area.

Campaign Manager Liz Albert shares Decker's commitment to meeting visitors' expanding needs, noting that education programs at Ipswich River have tripled over the last decade.

"That growth shows that there is a real need in the communities surrounding the sanctuary for what we're offering," Albert says. "With this campaign, we see Ipswich River being in a position to better engage our growing visitor base by making our facilities and staff more accessible to everyone. We envision a visitor experience that leaves people wanting to return again and again."

Thanks to the generosity of many donors, we have raised more than \$400,000 for the project. Your support today will help us reach our goal of \$900,000. We can't do it alone.

To support The Campaign for Ipswich River Wildlife Sanctuary, please contact Campaign Manager Liz Albert at 781-259-2104, lalbert@massaudubon.org.

ADVOCACY

Advocacy plays a key role in Mass Audubon's mission to forge a stronger bond with the natural world, conserve habitats, and address climate change. In the Legislative Affairs office, we work on Beacon Hill to get important environmental legislation passed, always with an eye toward protecting the nature of Massachusetts. Here's a quick summary of our top priorities for this legislative session:

Protecting Open Spaces in Local Communities

The Community Preservation Act (CPA), which was passed in 2000, allows cities and towns to create a local fund for open space protection, historic preservation, and affordable

Protecting Our Rivers and Streams

Many towns rely on rivers for clean drinking water, recreation, and tourism. During summer, when water usage peaks, it can be difficult to meet demands and many rivers go through dry periods.

Protecting Rare Forests

The Act Relative to the Protection of Old Growth Forests provides much-needed protection for the last of our stands of ancient trees—known as old growth—found on state lands. Old-growth forests are extremely rare, scattered throughout the state in small patches. Human activities such as timber cutting and farming have not significantly impacted these forests, but natural disturbances, including severe winds and ice, have made their mark.

Old growth serves as a biological library for studies of forest development, tree genetics, and climate change, and contains a wide diversity of wildlife. In Massachusetts, these forests are not currently protected from timber cutting by any law, only by administrative policy that could change at any time.

We work on Beacon Hill to get important environmental legislation passed, always with an eye toward protecting the nature of Massachusetts.

housing. Money is raised locally with a surcharge of 3 percent or less on property taxes, and a statewide Community Preservation Trust Fund provides financial matches to the municipality. A local committee is also created to make CPA project recommendations.

The CPA has been adopted by more than 40 percent of Massachusetts communities and has helped preserve more than 13,000 acres of open space, ranging from wetlands to farmlands.

Once passed, **An Act to Sustain Community Preservation** will make improvements to CPA, stabilizing the match through raising the deeds fee and allowing CPA funds to be used to enhance existing parks and recreational resources, not just those originally purchased or created with CPA funds. This advance would benefit larger urban communities with older parks, but less available open space.

To find out if your city has adopted CPA, visit www.communitypreservation.org.

Less water flow means more water pollution, negative impacts on fisheries, and reduced recreational opportunities.

Massachusetts is home to 160 rivers and streams impacted by seasonal drops in flow, and this number is increasing. Paved surfaces, dams, and storm drainage can all result in altered river flows, and climate change in New England is expected to bring more droughts and more intense storms.

The **Sustainable Water Resources Act** would develop stream flow standards so both fish and freshwater species are protected while allowing communities to meet water-supply needs. The bill would permit water suppliers to use a "water banking" system, charging a small fee for new water withdrawals or increased sewer use. These funds would go toward conserving water supplies and investing in greener infrastructure. The bill also includes dam removal as an option for dealing with obsolete dams, rather than just patching up failing dams and continuing to divert water unnecessarily.

This bill would establish a system of permanent old-growth reserves on state lands, ensuring that these ancient trees are not cut for timber and are protected for the ages.

Get Involved!

Want to learn more about Mass Audubon's legislative work? Sign up for our weekly e-newsletter, the *Beacon Hill Weekly Roundup*. We'll keep you in the loop about what's going on at the State House, provide updates on our priorities, and let you know what you can do to help through our Action Alerts.

You are an important part of the legislative process, and it makes a real difference when you contact your state senator and representative to tell them the environment is important to you. To sign up for the *Roundup*, visit:

www.massaudubon.org/advocacy

What is *Compost*?

Compost is the result of organic matter, such as leaves, food scraps, and grass clippings, breaking down into nutrient-rich soil. All organic matter decomposes over time, and we can help it along through the process of composting. The final product helps make soil healthier and serves as an ideal component in vegetable and flower gardens.

ready,
set,
Go Outside!

Skills Learned:

Concepts: food webs, nutrient cycling, decomposition, ecological relationships, life cycles, and soil production

Skills: planning and design, observation and comparison, sorting, decision-making, problem solving, household recycling, landscaping, and gardening

Experimentation: measurement, forming and testing hypotheses, comparing results

ONLINE BONUS!

Learn more at:
www.massaudubon.org/go

- ▶ A Kitchen Compost Bucket
- ▶ Brew Some Compost Tea
- ▶ Try Vermicomposting
- ▶ Compost Problems? Solved!

Composting is Cool (Well, Actually it's Hot)

Composting your yard waste, fruit and veggie scraps, and wood ashes reduces the amount of garbage you generate. Compost nourishes the plants in your garden (just like food nourishes you) and improves the soil in your yard. If you want to reduce, reuse, and recycle in a big way—compost!

The Science of Composting

When you set up a composting system, you help speed up this natural process of decomposition by mixing the materials in your pile and keeping them moist and aerated.

A compost pile is rich with microscopic life—tiny organisms that feed on the carbon and nitrogen found in plant materials. The bacteria will break down the plant tissue, and next the fungi and protozoa join in. Then centipedes, millipedes, beetles, and earthworms get to work, eating up the organic matter and releasing waste rich in enzymes and nutrients. All this activity generates heat, so the center of a compost pile can become quite hot—up to 150 degrees.

Setting Up Your Own Compost System

It's pretty easy to get started without using any special materials. Here's what you need:

A container. You can reuse an old kiddie pool, an open bin, a large garbage can, a circle of fencing material, or whatever you have—approximately 3- to 4-feet wide and 3- to 4-feet tall.

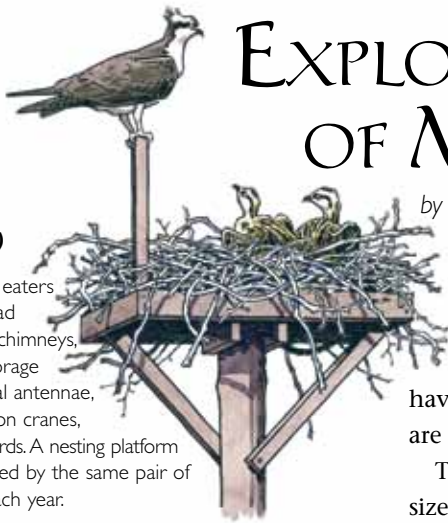
Some base material. Place at least four inches of sticks and twigs on the bottom.

Fresh plant material. Over the next year or two, add food scraps and yard refuse. You can also add coffee grinds, tea bags, and eggshells. (Meat and dairy should be left out.)

Water (optional). You can add water occasionally to keep the pile somewhat moist.

Patience. It can take up to two years for your compost pile to turn into dirt. Turning over the pile helps speed up the process.

The **compost is ready** for the garden when you can no longer recognize the original ingredients and the whole batch resembles rich, coarse soil.



Osprey
(*Pandion haliaetus*)

These fish eaters nest in dead trees and chimneys, and on storage tanks, aerial antennae, construction cranes, and billboards. A nesting platform is often used by the same pair of ospreys each year.

Naturalists revel in the variety of bird nests—their intricate design and ingenious architecture, and the sometimes quirky materials used in their construction. Like all things in nature, nests serve an important biological function. Primarily, bird nests are places to raise young somewhat protected from predators and adverse weather. When you take a closer look at nests, you'll see that they often vary as much as the birds that build or borrow them. And now's the time to get a good look: Nests are most conspicuous in late summer and autumn, after the leaves



Ruby-throated Hummingbird
(*Archilochus colubris*)

The nests are difficult to spot, not only because of their diminutive size, but also because of their camouflaged outside walls that are typically covered with greenish gray lichen. When viewed from the ground, the nests resemble mossy knobs on tree limbs.

EXPLORING THE NATURE OF MASSACHUSETTS

by Lucy Gertz, Visitor Education Coordinator

Birds Nests

have fallen but before the structures are blown about by winter winds.

The size of a nest usually hints at the size of the bird, from tiny, ping-pong ball-sized hummingbird nests to four-foot-high eagle nests (which can become so heavy they sometimes topple the trees



Baltimore Oriole
(*Icterus galbula*)

These intricately woven, silvery-colored, deep pouches are often attached to the drooping branches of maples, sycamores, cottonwoods, and elms.

on which they sit!). Nest structure varies widely as well, from an oystercatcher's simple hollow scrape in beach sand to the familiar cup nests constructed by most songbirds. We also admire platform nests built atop tall trees by great blue herons and pendulous nests woven in leafy branches by orioles.

There are seemingly no limits to the array of materials birds employ in nest construction. Twigs, grasses,



Black-capped Chickadee
(*Poecile atricapillus*)

Cavities provide nest sites for the state bird of Massachusetts. These birds either excavate soft rotting wood or use abandoned woodpecker holes. They may also nest in bird boxes—preferring locations four to 10 feet aboveground and with entrance holes slightly less than 1.5 inches in diameter.

leaves, lichens, and mud are commonly used. Some birds incorporate string, yarn, or hair. Barn swallows plaster their nests to walls or ledges with mud while hummingbirds attach their tiny nests to tree limbs with spider silk.

By protecting woodland, grassland, and wetland habitats, we help maintain suitable nesting sites for birds. But sometimes that is not enough, which is why Mass Audubon also erects dozens of platforms and hundreds of bird boxes for some species of waterfowl, raptors, and songbirds that breed in Massachusetts.



Eastern Phoebe
(*Sayornis phoebe*)

Their well-constructed semicircular nests, made of mosses, grasses, fibers, and mud pellets, are typically found mounted atop window frames, support beams, or other shelf-like projections.

Illustrations by: Barry Van Dusen©

Visit our sanctuaries this autumn to see these distinctive nests and more.

Broadmoor, Natick – Look for holes about an inch in diameter and located low on the trunks of trees that are dead and decaying; these are probably chickadee nests. A nest hole higher up and a little larger in diameter could be used by a red-bellied woodpecker. Both are common at Broadmoor and easily seen.

Felix Neck, Edgartown – Though the ospreys have left for the season, their impressive nest platforms remain. Ospreys are the ultimate recyclers, incorporating bits and pieces of natural and human-made materials into their nests. Use binoculars to scope out what the ospreys gathered to complete their lofty summer sites.

Ipswich River, Topsfield – Beech Island is a narrow woodland dominated by American beech trees. The area is bounded by the Ipswich River to the east and Bunker Meadows to the west, making it ideal wood duck habitat. On a hike to Beech Island, look for large holes in these trees where wood ducks nest each spring.

Daniel Webster, Marshfield – The purple martins here, which nest in the hanging gourds each summer, represent about one-third of the nesting population in Massachusetts. The gourd array at Daniel Webster overlooks the wet panne and Webster Pond, giving these aerial acrobats quick access to high-flying bugs that frequent the fields and ponds.

Ashmet Holly, East Falmouth – The barn swallows have faithfully returned each season since 1935, undaunted even when their mud and grass nests were relocated to a new barn in the 1990s.

Stony Brook, Norfolk – The walk down to the boardwalk provides opportunities to see oriole nests and the nest of a warbling vireo built over the water.

www.massaudubon.org/sanctuaries

www.massaudubon.org/birds

PROTECTING LAND AND HABITAT

Great Marsh, Grand Opportunity

Welcome: Rough Meadows Wildlife Sanctuary

by Michael O'Connor, Public Relations and Communication Manager

Q. What are salt marshes?

A. Salt marshes are coastal grasslands that are flooded by ocean tides twice a day and include plants and animals that are well adapted to regular tidal inundations.

- They form in the sheltered lagoons behind barrier beaches or along tidal rivers. Plum Island and Crane Beach protect much of the North Shore's Great Marsh.
- These marshes are usually "sweetened" by freshwater from rivers entering from the landward shore; this often-substantial aquatic environment, such as the Great Marsh or Cape Cod's Waquoit Bay, is called an estuary.
- The organic soils of salt marshes are formed by the decay of the salt marsh *Spartina* grasses, which grow into deep peat deposits over millennia. Marsh soils are also built up by sediments brought in from the ocean and rivers and trapped by the dense network of marsh plants.

Along the meandering stretch of Route 1A between Ipswich and Newburyport, MA, you catch peeks, glimpses, and occasional broad vistas of one of the Northeast's most spectacular coastscapes: the Great Marsh. This sprawling, 25,000-acre ecosystem of estuaries, marshes, uplands, and tidal watercourses—the largest north of Chesapeake Bay—stretches from Cape Ann on the North Shore to southern New Hampshire.

Yet, for much of the public, the Great Marsh has historically remained as inaccessible and as unknown as a star.

The reason: a centuries-old tradition of private land holdings, followed in more recent decades by rampant development. The remedy: committed efforts by government wildlife agencies and nonprofit conservation organizations—including Mass Audubon—to secure the Great Marsh's future through landscape-scale conservation and public engagement.

An Integral Piece of a Puzzle

In a major commitment to this mission, Mass Audubon is working hard to raise \$3 million to secure a 75-acre parcel in Rowley that, when combined with an adjacent 125 acres we've already conserved, will be the site of a new wildlife sanctuary called Rough Meadows.

This effort can only succeed with the help of many generous donors and funders. A \$1 million grant from the North American Wetlands Conservation Act Grant Program and \$250,000 from the Open Space Institute have provided a major boost to the effort, as has the town of Rowley, which committed \$250,000 in Community Preservation Act funding. (Read more about CPA on page 6 of this issue.)

Rough Meadows is mostly tidal marsh, interrupted only by an archipelago of island-like oak and hickory woodlands, which dot the wide expanse of salt grasses.

The newly protected land closes a crucial gap in a larger mosaic of 3,000 acres owned and managed by federal and state wildlife agencies and other regional nonprofit conservation organizations.

Why Protection?

Salt marshes comprise some of the planet's richest ecosystems (perhaps second only to rain forests for biodiversity) and help manage flood and erosion control. And because of their coastal locations and sponge-like abilities to soak up both storm tides and freshwater runoff, they can also provide the first line of ecological defense against sea-level rise associated with climate change.

Director of Land Protection Bob Wilber notes that Rough Meadows is especially significant for how it provides opportunities to address Mass Audubon's top three strategic goals. "It's like hitting the trifecta," says Wilber. "Projects such as this one really help strengthen the bond between people and nature, preserve and nurture important habitats, and also help the region combat the effects of climate change."

"It's going to be a wonderful place for people just to stroll, and learn more about the importance of salt marshes"

Wilber also notes that digital mapping and other analytical tools helped Mass Audubon determine that protecting the comparatively modest Rough Meadows parcel would secure the integrity of a much larger landscape. "By conserving 200 acres in this strategic location, we are able to connect a mosaic of thousands of acres of protected land fronting on the ocean," he says. "Where else can you do that now in New England?"

The Importance of Partnership

Essex County Greenbelt Association (ECGA), a regional land trust that has protected nearly 14,000 acres, including parcels adjacent to Rough Meadows, has partnered with Mass Audubon in this project. "Essex County Greenbelt has a

long proud history of protecting land at the Great Marsh and across the North Shore generally," Wilber says. "By joining forces in this effort, our combined ability is impressive—addressing the many challenges involved and moving this compelling project to a successful outcome."

ECGA Executive Director Ed Becker notes that the land trust has been active in the Rowley area for years, "so all that land is very important to all of us. Mass Audubon is now taking the lead on the final critical piece."

A Resource for the Region

Bill Gette, director of the Joppa Flats Education Center in nearby Newburyport, considers Rough Meadows' potential as unprecedented. "The key thing is that this new wildlife sanctuary, which will offer close proximity to both salt marsh and upland forest, can provide innovative opportunities for programming, education, and public engagement," Gette notes.

He muses about the positive impact on schoolchildren who stand awestruck before hundreds of acres of open space—with that same expression of wonder on the faces of adults, especially those who've had limited experience in the outdoors. "Imagine," the Joppa Flats director says, "walking out onto the site, right off busy Route 1A, and not seeing any houses at all, just open land to the horizon."

Gette foresees a near future when Mass Audubon's Rough Meadows Wildlife Sanctuary provides visitors with truly unique experiences in nature. "It's going to be a wonderful place for people just to stroll and learn more about the importance of salt marshes," he predicts. "Perhaps most importantly, they'll get a closer look at this fragile and crucial coastal resource that much of the public will experience for the first time."

Rough Meadows still needs you! To support this project, please contact Campaign Director Liz Albert at 781-259-2104, email: lalbert@massaudubon.org.

- The abundance and variety of life-forms found in salt marshes depend on the recycling of detritus, mostly dead grasses that are distributed by the action of the tides and broken down by bacteria and a variety of tiny invertebrates. These are the basis of a complex food web that ultimately supports fish and bird populations.
- Farmers once mowed the salt marshes and the hay was used for livestock. These days the hay provides popular mulch for gardens.

Q. What will I see there?

A. Salt marshes change in color and aspect with the seasons and are home to interesting life-forms at all times of year.

- In fall succulent glasswort plants turn into large patches of flaming red while the marsh hay turns a rich tawny color and golden tips burnish the saltwater cordgrass lining tidal creeks. In summer the delicate blue flowers of sea lavender dot the emerald marshes.
- Salt marsh pools and tidal flats are alive with worms, mollusks, crustaceans, and fish, which in turn feed egrets and other



wading birds that nest locally, as well as myriad shorebirds (sandpipers and plovers) that migrate.

- Seaside and saltmarsh sparrows are "endemic" to salt marshes, meaning that they can nest in no other habitat.
- Many fish species, such as striped bass and bluefish, use salt marshes during part of their life cycles. These fish are prey for ospreys that often nest near this habitat.
- Northern harriers are often seen courting slowly over salt marshes, especially in spring and fall. In winter snowy owls hunt on the frozen marsh.

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Annual Meeting



Mass Audubon's Annual Meeting will be held on

**Tuesday, November 15,
at 5:30 pm**

**at Wellesley College Club,
Wellesley, MA.**

For more information,
contact Kristin Barr at
781-259-2101 or email kbarr@massaudubon.org.

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FALL PROGRAM SAMPLER

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

Exploring Lime Kiln Farm Wildlife Sanctuary

November 12: 10 am-noon
BERKSHIRE SANCTUARIES, Lenox,
413-637-0320

Rockin' with Raptors

September 24: 1-4 pm
BOSTON NATURE CENTER, Mattapan,
617-983-8500

Halloween Hike at Boo Meadow Brook

October 14 & 15: 6:30-8:30 pm
BROAD MEADOW BROOK, Worcester,
508-753-6087

Fall Foliage Canoes on the Charles

Saturdays/Sundays, October 2-16
BROADMOOR, Natick, 508-655-2296

Signs of Large Mammals: Moose, Bear, Deer, and More at West Mountain Wildlife Sanctuary

October 15: 10 am-2 pm
CONNECTICUT RIVER VALLEY SANCTUARIES,
Northampton, 413-584-3009

Tales of the Night

October 27 & 28: 6:30-9 pm
DRUMLIN FARM, Lincoln, 781-259-2200

Fall Festival

November 25: 11 am-3 pm
FELIX NECK, Edgartown, 508-627-4850

Affordable Solar Power for Your Home

September 24: 9:30-11 am
HABITAT, Belmont, 617-489-5050

Big Woods Hike

November 20: (every 15 minutes from
noon-1:30 pm)
IPSWICH RIVER, Topsfield, 978-887-9264

Those Little Brown Things: Sparrows Workshop

October 16: 9 am-3 pm
JOPPA FLATS, Newburyport, 978-462-9998

Cape Cod Wildlife Festival

September 17: 10 am-3 pm
LONG PASTURE, Barnstable, 508-362-7475

Halloween Prowl

October 28: 6:15-8 pm
October 29: 5:50-8 pm
October 30: 5:30-7:30 pm
MOOSE HILL, Sharon, 781-784-5691

Spooktacular

October 22: 6-9 pm
OAK KNOLL, Attleboro, 508-223-3060

Allens Pond Annual Butterfly Census and Walk

September 10 & 17: 10 am-12:30 pm
SOUTH COAST SANCTUARIES, Dartmouth,
508-636-2437

Farm Day at Daniel Webster

September 24: 10 am-4 pm
SOUTH SHORE SANCTUARIES, Marshfield,
781-837-9400

34th Annual Fall Fair

September 24: 10 am-4 pm
STONY BROOK, Norfolk, 508-528-3140

Fall Fest

October 22: 10 am-3 pm
VISUAL ARTS CENTER, Canton, 781-821-8853

Hey Day/Farm Day

October 1: 11 am-4 pm
WACHUSETT MEADOW, Princeton,
978-464-2712

Sea Turtle and Marine Animal Strandings Field School

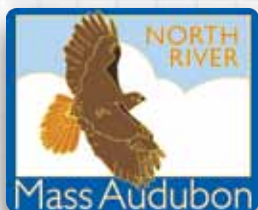
November 11: 3-9 pm
November 12: 8 am-5 pm
November 13: 8 am-4 pm
WELLFLEET BAY, Wellfleet, 508-349-2615



www.massaudubon.org/programs

Walk the Walk

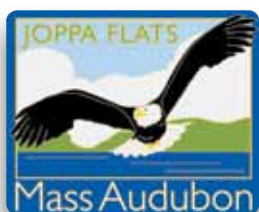
Marshfield—What could be better than reading a book about the outdoors? Reading while outdoors, of course! At **North River Wildlife Sanctuary**, families, kids, teachers, and



caregivers can now experience the StoryWalk™ project, which combines literacy and physical activity in a natural environment. Weatherproof pages from a storybook

guide readers along walking trails while sparking conversation, learning, and an appreciation of nature.

The books will be changed with the seasons, and will be posted year-round. The StoryWalk™ project was created by Anne Ferguson of Montpelier, Vermont, and developed in collaboration with the Vermont Bicycle & Pedestrian Coalition and the Kellogg-Hubbard Library. For more information, visit www.massaudubon.org/northriver or call 781-837-9400.



Sweeping Up on Plum Island

Newburyport—In an annual tradition of public service, the

Joppa Flats Education Center is again organizing the COASTSWEEP beach cleanup on Plum Island, in cooperation with the Parker River National Wildlife Refuge. Last year, more than 200 volunteers picked up approximately 4,000 pounds of debris. In the past, crews have come across such oddities as refrigerators, sofas, mattresses, and car engines.

Join Joppa Flats on September 17, anytime from 9 am to 5 pm at parking lot #1 on the Parker River National Wildlife Refuge, rain or shine. For more information, email dlarson@massaudubon.org or call 978-462-9998.

Hardy No More!

Lenox—Don't be fooled by the sweet name: Hardy kiwi (*Actinidia arguta*) is an aggressive plant that has taken a bitter hold of some forested land in Massachusetts. Fortunately, a partnership coordinated by Regional Scientist Tom Lautzenheiser is expecting to change that at **Pleasant Valley Wildlife Sanctuary** and adjacent Kennedy Park. Across 100 acres, the partnership is working to rid the forest of the hardy kiwi's fast-spreading vines before the problem becomes more severe.



Left unchecked, hardy kiwi vines climb trees to form dense, intertwined mats that overwhelm trees, leading to canopy destruction and eventual forest collapse.

This two-year effort to map and manage the pesky plant was made possible by a grant from the US Forest

Service's Forest Health Protection program. Mass Audubon, in partnership with the Forest Service, the town of Lenox, Berkshire Community College, the Massachusetts Department of Conservation and Recreation, and CPS-Timberland, began active control efforts this summer; follow-up monitoring and control will continue through 2012.

Help nip this vine in the bud! Pleasant Valley is hosting a special volunteer day on September 17, 9 am-noon.

For more information on hardy kiwi and other invasive species, check out www.massaudubon.org/invasives, or contact berkshires@massaudubon.org to sign up for the volunteer day.

Field Notes



Service with a Smile

VOLUNTEER SPOTLIGHT

Every week Alex Vozella and friends from Horace Mann Educational Associates (HMEA), which works with special needs clients, help out at Stony Brook Wildlife Sanctuary in Norfolk. The small group of dedicated volunteers “brightens up any day,” Sanctuary Director Doug Williams says.

Working as a Mass Audubon volunteer brightens up *his* day, Alex says, and Stony Brook has become his personal sanctuary, providing an atmosphere of comfort and camaraderie. “I love it here,” he proclaims. “I’ve been coming since my high school days. They like me here; they love me, actually.”

His association with Stony Brook began several years ago, when his guidance counselor at Franklin High School suggested Alex and Mass Audubon would be a great match. “We just hit it off,” Williams says. “Alex is very comfortable with the routines,” which include everything from weeding and other garden chores to trail work, keeping bird feeders full, and preparing craft materials for children’s programs.

“This is a mutually beneficial relationship,” Stony Brook Administrative Assistant Don Cannon notes. “While he’s working hard to overcome his special needs, what comes through is his intellect and personality”—and Alex’s desire to share his passion with others.

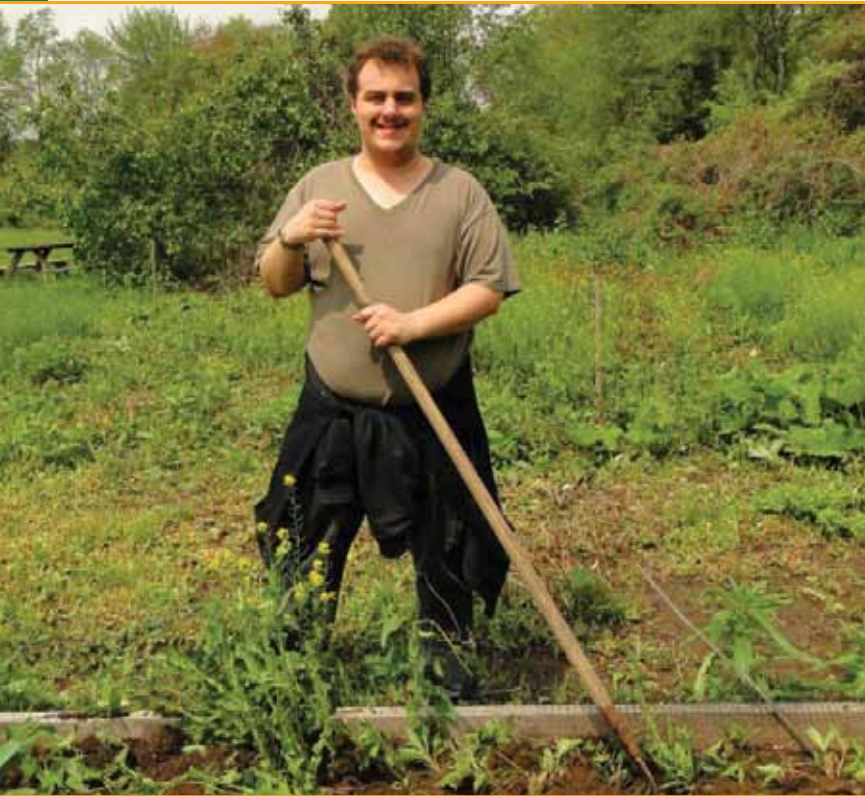
Alex was so committed to his weekly workday at the wildlife sanctuary that he continued volunteering after he finished Franklin High and transitioned to HMEA, which promotes independence in developmentally challenged adults. He spread the word, and now other young people from the agency join him in performing stewardship tasks and seasonal projects at Stony Brook.

On a clear morning in late May after days of rain, Alex’s group arrives. It’s a perfect day to weed the raised beds so they’ll be ready for planting the vegetable garden. Alex leads his friends over to a shed to grab rakes, spades, and other hand tools; then they all head to the back garden.

“We like to get dirty,” he says. “This is hard work, but it’s worth it.” They approach their work seriously, quickly clearing out three raised beds. But Alex says that his favorite

task is filling the feeders. “It’s a lot of fun, and it’s easy,” he says. “We fill all eight of them. Then we watch the blue jays, robins, and finches.”

Back inside the nature center, Don Cannon says Alex’s contributions continue to make a positive difference—for both wildlife sanctuary and volunteer. “He’s been extremely consistent over the years,” Cannon says. “Alex faithfully comes every week, and we are always a better place for his efforts and good cheer.”



“I’ve been coming since my high school days.
They like me here; they love me, actually.”

—Alex Vozella



www.massaudubon.org/volunteer

▲ Ann Prince

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The Natural Inquirer

by John Galluzzo, South Shore Sanctuaries Education Coordinator

Q. Why don't oak leaves turn bright colors in fall?

A. When it comes to flashy foliage, it's true that maples, hickories, birches, and other hardwoods seem to have it all over the oaks. The explanation is really quite simple—while many trees boast chemical pigments that produce blazing reds, bright oranges, and bold yellows, oaks are big on ... tannin.

What color does the pigment tannin produce? Brown! In fact, red and white oaks can initially show off some noble burgundy or purple hues, but brown is their ultimate default color.

Of course, through spring and most of summer, oak leaves show green, as do other hardwood species.

Why? Because of a dominant chemical called chlorophyll, which plays a major role in the ability of plants to absorb the sun's energy and turn it into life-sustaining sugars and starches. This process is called photosynthesis.

Chlorophyll reveals itself to the human eye as green, while blocking the colors of other pigments. Hence we "see" leafy woodlands and forests as a mostly verdant world. But as the temperatures drop and the days grow shorter, chlorophyll breaks down, allowing other pigments to emerge with their familiar palette of foliage colors, including brown.

Thus, it's during the period of weak sunlight and cold weather that oaks show off their new tans.

Natural fact: The tannin in oaks (and especially oak apple galls) provided important dyes during the early colonial period. White oak was prized by colonial shipbuilders because of the wood's strength, its ideal suitability for ship planks and beams, and its general adaptability.

Have a question for *The Natural Inquirer*? E-mail inquirer@massaudubon.org



illustration by:
Clare Walker Leslie ©

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 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.

Photography:

Cover	White-throated sparrow—George McLean©	p. 9	Marsh view—Bob Ford/Mass Audubon©
pgs. 1-2	American kestrel—Jerry Liguori©		Grass—Bob Ford/Mass Audubon©
p. 3	Eastern meadowlark—Robert Blanchard©	p. 10	Egret—Joy Marzolf/Mass Audubon©
	Red-bellied woodpecker—John Harrison©	p. 11	Owl silhouette—Mark Brown©
p. 4	Ospreys—Jim Fenton©		Crowned cranes—Classic Escapes©
p. 5	Canoeing—Joy Marzolf/Mass Audubon©	p. 13	Alex Vozella—Ann Prince/Mass Audubon©
p. 6	Misty lake—pazham©	p. 15	Winding river—Art Donahue©

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 225,000 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 wildlife sanctuaries, in 90 Massachusetts communities, welcomes visitors of all ages and serves as the base for our work, to support these important efforts, call 800-AUDUBON (283-8266) or visit www.massaudubon.org

Autumn Escapes

at a Mass Audubon Sanctuary Near You



Mass Audubon has 51 wildlife sanctuaries open to the public year-round. They provide important habitat for wildlife and opportunities for you to enjoy and appreciate nature.

Oak Knoll

A trail loops around Lake Talaquega, where a pre-WWI trolley stop drew visitors to hear musicians play on a floating platform.

- 32 Boston Nature Center, Mattapan
- 33 Blue Hills Trailside Museum, Milton
- 34 Visual Arts Center, Canton

South of Boston

- 35 Moose Hill, Sharon
- 36 Stony Brook, Norfolk
- 37 Oak Knoll, Attleboro
- 38 Attleboro Springs, Attleboro
- 39 North River, Marshfield
- 40 Daniel Webster, Marshfield
- 41 North Hill Marsh, Duxbury
- 42 Allens Pond, Dartmouth and Westport
- 43 Great Neck, Wareham

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 Conway Hills, Conway
- 7 Graves Farm, Williamsburg and Whately
- 8 Lynes, Westhampton
- 9 Arcadia, Easthampton and Northampton
- 10 Laughing Brook, Hampden

Central Massachusetts

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

North of Boston

- 21 Nashoba Brook, Westford
- 22 Joppa Flats, Newburyport
- 23 Ipswich River, Topsfield
- 24 Endicott, Wenham
- 25 Eastern Point, Gloucester
- 26 Marblehead Neck, Marblehead
- 27 Nahant Thicket, Nahant

Greater Boston

- 28 Habitat, Belmont
- 29 Drumlin Farm, Lincoln
- 30 Waseeka, Hopkinton
- 31 Broadmoor, Natick

Cape Cod and the Islands

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

FOREVER

By remembering Mass Audubon in your will or estate planning, you'll leave a lasting legacy toward conservation. Your generosity will be appreciated for generations to come.

Please contact Nora Frank for more information at nfrank@massaudubon.org or call 781-259-2125.



www.massaudubon.org/sanctuaries