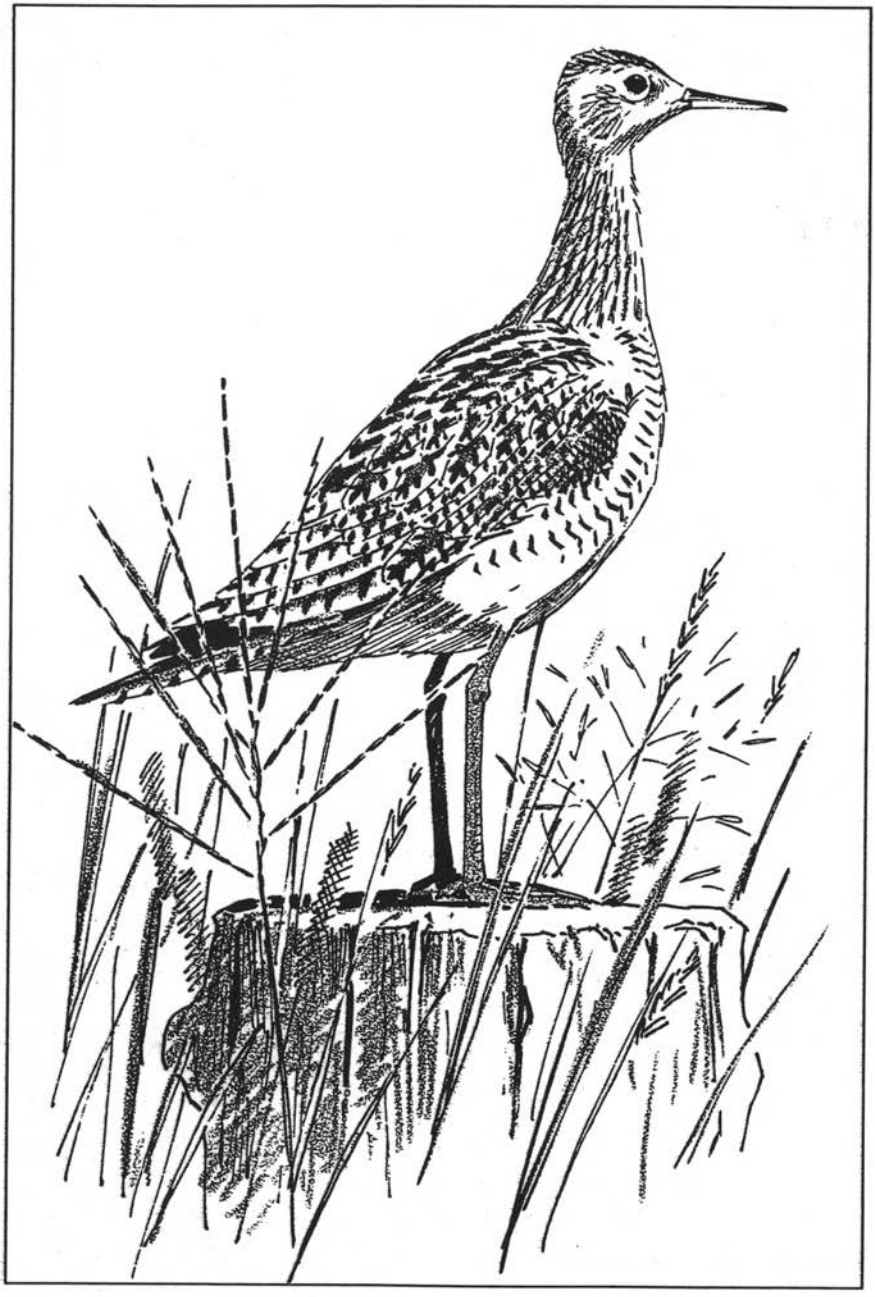
# BIRD OBSERVER



© Barry W. Van Dusen

VOL. 23 NO. 2

APRIL 1995

# BIRD OBSERVER

• a bimonthly journal •

*To enhance understanding, observation, and enjoyment of birds.*

**VOL. 23, NO. 2, APRIL 1995**



**Editor in Chief**
Martha Steele

**Associate Editor**
Janet L. Heywood

**Department Heads**
*Cover Art*
William E. Davis, Jr.
*Where to Go Birding*
Jim Berry
*Feature Articles and Field Notes*
John C. Kricher
*Book Reviews*
Alden G. Clayton
*Bird Sightings*
Robert H. Stymeist
*At a Glance*
Wayne R. Petersen

**Corporate Officers**
*President*
William E. Davis, Jr.
*Treasurer*
Lee E. Taylor
*Clerk*
Glenn d'Entremont

**Subscription Manager**
Matthew L. Pelikan

**Advertisements**
Robert H. Stymeist

**Associate Staff**
Theodore Atkinson
Simon Perkins

**Board of Directors**
Dorothy R. Arvidson
Alden G. Clayton
Herman H. D'Entremont
H. Christian Floyd
Richard A. Forster
Janet L. Heywood
Harriet E. Hoffman
John C. Kricher
Wayne R. Petersen
Marjorie W. Rines
John A. Shetterly
Martha Steele
Robert H. Stymeist



*BIRD OBSERVER* (USPS 369-850) is published bimonthly, COPYRIGHT © 1995 by Bird Observer of Eastern Massachusetts, Inc., 462 Trapelo Road, Belmont, MA 02178, a nonprofit, tax-exempt corporation under section 501 (c)(3) of the Internal Revenue Code. Gifts to Bird Observer will be greatly appreciated and are tax deductible.

POSTMASTER: Send address changes to *BIRD OBSERVER*, 462 Trapelo Road, Belmont, MA 02178. SECOND CLASS POSTAGE PAID AT BOSTON, MA.

SUBSCRIPTIONS: $16 for 6 issues, $30 for two years in the U. S. Add $2.50 per year for Canada and foreign. Single copies $4.00. An Index to Volumes 1-11 is $3. Back issues: inquire as to price and availability.

CHANGES OF ADDRESS and subscription inquiries should be sent to
Bird Observer Subscriptions, P. O. Box 236, Arlington, MA 02174.

ADVERTISING: full page, $80; half page, $40; quarter page, $25. Send camera-ready copy to Bird Observer Advertising, P. O. Box 236, Arlington, MA 02174.

BIRD SIGHTINGS: Send reports of any given month in writing by the eighth of the next month to
Bird Sightings, Robert H. Stymeist, 94 Grove Street, Watertown, MA 02172.

MATERIAL FOR PUBLICATION: *BIRD OBSERVER* welcomes for publication contributions of original articles, photographs, art work, field notes, and field studies. Please send these or other suggestions to the editor in chief:
Martha J. Steele, P. O. Box 236, Arlington, MA 02174.
Manuscripts should be typed double-spaced on one side only of 8.5-by-11-inch paper. Manuscripts longer than 15 typed pages (about 4500 words) may be shortened when edited. Use the current A.O.U. Check-List for bird names and sequence. Type tables on separate pages. Black-and-white photographs and graphics are best. Include author's or artist's name, address, and telephone number and information from which a brief biography can be prepared. Indicate whether an IBM-compatible 5.25-inch diskette containing the article in ASCII or Microsoft Word can be supplied. Scientific and technical articles are peer reviewed. Views expressed in *BIRD OBSERVER* are those of the authors and do not necessarily reflect an official position of Bird Observer of Eastern Massachusetts, Inc.

ISSN: 0893-4630

# CONTENTS



## 1995 ARTHUR A. ALLEN AWARD

## TO KATHLEEN ANDERSON

The Cornell Laboratory of Ornithology presented the 1995 Arthur Allen Award to Kathleen Anderson on April 1, 1995, at Stonehill College in North Easton, Massachusetts. This prestigious award, of which Roger Tory Peterson was the first recipient, recognizes Ms. Anderson for her many years of distinguished service to the field of ornithology. In announcing the award, the Cornell Laboratory of Ornithology had this to say:

> In all phases of her work, Kathleen Anderson has fully embodied the ideals and teachings of Arthur Allen, from the early days of Operation Recovery to the founding and directorship of Manomet Bird Observatory. Programs like the MBO intern program, which

she started, have encouraged numerous students to pursue careers in ornithology and bird conservation. In these endeavors, and in so many others, Kathleen Anderson's willingness to share her enthusiasm, knowledge, and sensitivity have made a unique and lasting contribution to the welfare of North American birds and the people who study them.

---

## JUNE WORKSHOPS

***The Barrens and their Beasts - A Workshop on Pine Barren Ecology***

Southeastern Massachusetts lies close to the northern edge of a unique association of plants and animals called the pine barrens. To the uninitiated, pine barrens appear desolate and relatively devoid of life, yet several of the state's rarest plant and invertebrate species occur there. Breeding birds in the pine barrens include species with a southern affinity, such as Whip-poor-will and Fish Crow, and more northern species, like Hermit Thrush and Nashville Warbler. Participants will be introduced to the interesting and often understated ecology of the pine barrens. The indoor session will present an overview of the environment and its bird life, and the field trip to the Myles Standish State Forest in Plymouth will offer the opportunity to observe firsthand some of the representative birds and plants. Leader: Wayne R. Petersen.

Seminar: Friday, June 2, 1995 (7:30-9:30 P.M.).
Field Trip: Sunday, June 4, 1995. Cost: $35.

***Massachusetts Breeding Birds - What are They and How do They do it***

Approximately 200 bird species breed in Massachusetts. These species occur in a multitude of habitats between the Cape and the Berkshires. Some are rare and local; others breed throughout the state in a wide variety of habitats. In addition to this variety in habitats, there is an equally great variety of breeding strategies, nest types, and interesting behaviors that are associated with nesting. This workshop will focus on the state's breeding birds and will specifically examine some of the important biological phenomena associated with the breeding season. A field trip to the Quabbin area will explore the rich breeding populations there and will provide an opportunity to see breeding bird activity near the height of the nesting season. Leader: Wayne R. Petersen

Seminar: Friday, June 23, 1995 (7:30-9:30 P.M.).
Field Trip: Sunday, June 25, 1995. Cost: $35.

**These workshops are cosponsored by *Bird Observer* and the Needham Bird Club.** Seminar sessions will be held in Needham, MA, from 7:30-9:30 P.M. Directions to the seminars will be sent to registrants. Details about the field trips will be announced at the seminars preceding them. If you have questions, please call 617-666-8934 (evenings). Workshops limited to 20 participants. Preregistration is required.

**To register,** send your name, address, and phone numbers with your check (payable to *Bird Observer*) to Bird Observer Workshops, c/o H. D'Entremont, 45 Montrose Street, Somerville, MA 02143.

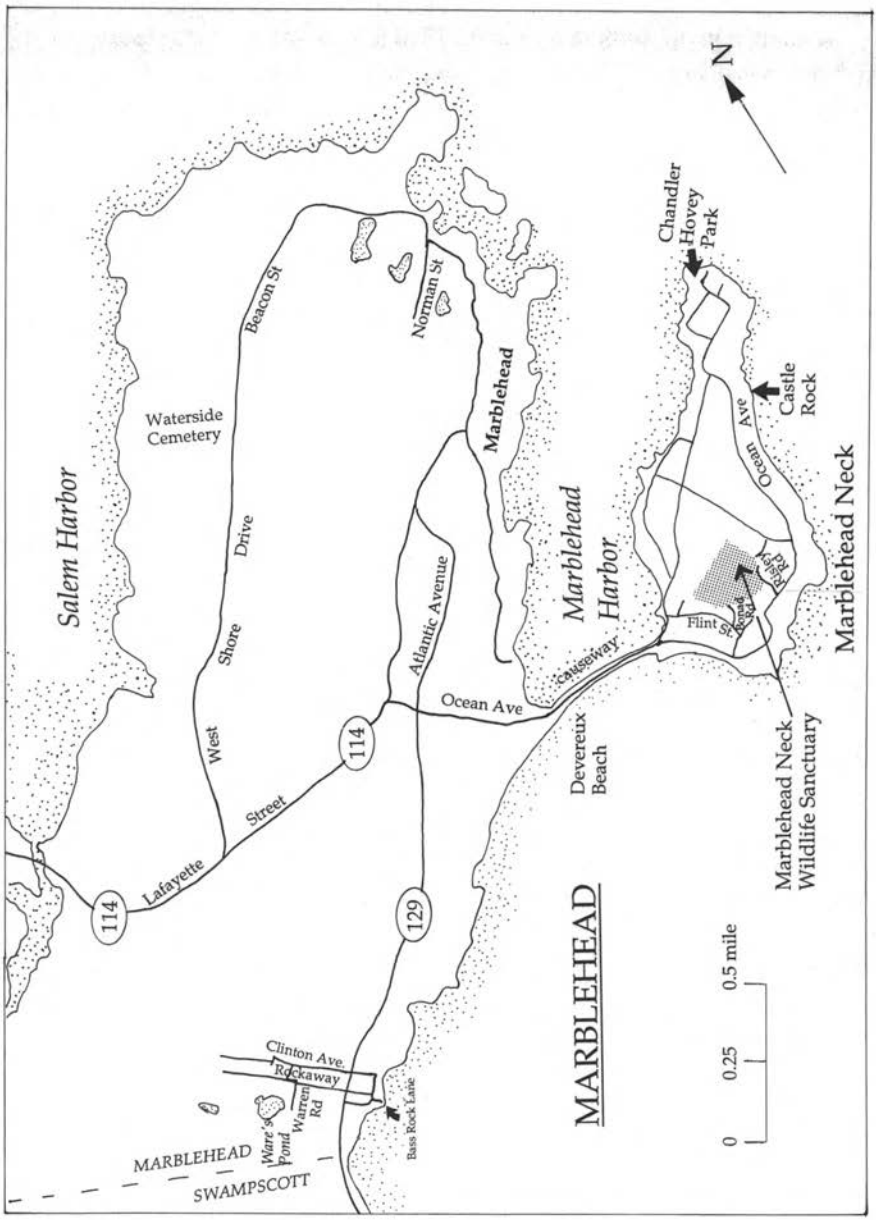
## BIRDING MARBLEHEAD: MARBLEHEAD NECK WILDLIFE SANCTUARY AND BEYOND

by Jan Smith

Although in most birders' minds Marblehead means the Massachusetts Audubon Sanctuary on Marblehead Neck, other locations in town hold interest for the persistent birder. Marblehead has justifiably established its birding reputation as a spring and fall migrant trap, but one can always see birds at other times of the year and at other localities in town. This article updates a previous article by Dorothy Snyder on the Marblehead Neck Wildlife Sanctuary (MNWS) in *Bird Observer* seventeen years ago (*Bird Observer* 6(5):157-165). Snyder's article had a comprehensive bird list and a delightful account of the sanctuary's history. The bird list provides a good basis for what species to expect, but the birding and the habitats have steadily changed over the years. After updating the MNWS area, I also suggest other locations to be checked for those with a little extra time and inclination.

### Marblehead Neck Wildlife Sanctuary

Most birders engaging in a big day effort in May include a stop at the MNWS because the quality of birding can often be spectacular during migration. The sanctuary has always been undervisited, probably due to its off-the-beaten-path location. Access to Marblehead from the south is from Route 1A to Route 129, or from the north and west on Route 114, all of which can be very congested. Marblehead is a peninsula, and Marblehead Neck is basically an island connected to the mainland by a 0.4-mile causeway. If you are coming from the south, take Route 1A to Route 129 north. From the Marblehead-Swampscott town line, Ocean Avenue is 1.4 miles along Route 129. Coming from the north, Ocean Avenue is 1.4 miles along Route 114 from the Salem-Marblehead town line. From Route 114 (right at the fire station) or Route 129 (the second set of lights after entering town), turn right onto Ocean Avenue, go about 0.5 mile to the causeway, and cross the causeway. At the end of the causeway, as you enter Marblehead Neck, the road forks. Stay on Ocean Avenue, the right fork. After 0.5 mile, watch for Risley Road on the left, which dead-ends at the parking lot for the sanctuary. It is nice to report that a local police officer has taken up residence over a recently renovated garage next to the parking lot, and his presence appears to have almost eliminated the late night visitors who often deposited their garbage in the parking lot and often throughout the sanctuary itself. Occasionally a cord blocks the entrance to the parking lot in the very early morning, but there is no lock, and it is easily removed. Also, parking on the street is never a problem here. Once in a while a lazy neighbor will let their dog run loose in the sanctuary, but that is the only problem you are likely to encounter.


Salem Harbor
Waterside Cemetery
Beacon St
Norman St
Marblehead
Chandler Hovey Park
N
Castle Rock
Ocean Ave
Drive
Shore
West
Street
Lafayette
Atlantic Avenue
Ocean Ave
Causeway
Marblehead Harbor
Flint St
Broad Rd
Lafayette Rd
Marblehead Neck
114
114
129
Devereux Beach
Marblehead Neck Wildlife Sanctuary
MARBLEHEAD
Clinton Ave
Rockaway
Warren Rd
Ware's Pond
Bass Rock Lane
MARBLEHEAD
SWAMPSCOTT
0
0.25
0.5 mile

A bulletin board with a map of the sanctuary and other notices is located fifty feet into the sanctuary. On the back side of the bulletin board is a record book containing recent bird sightings. The basic layout of the sanctuary trails has remained the same over the years, but the trees and shrubs have steadily grown and closed in many of the trails over the last two decades. The large old red maples, some with nice snags, which reliably attracted and held Tennessee Warblers and Olive-sided Flycatchers, are almost all gone, felled by old age and storms. The birds still show up but move around more. The best view over extensive vegetation is from the shore of the main pond down the main trail, which goes left from the entrance. Rough-winged Swallows usually skim the surface. The few open areas have mostly filled in, so that Indigo Buntings, Field Sparrows, Eastern Meadowlarks, and Bobolinks seldom stop anymore. However, these species, especially Bobolinks, are still easily detected flying over. Dickcissels can also be seen; the sanctuary has several records annually, almost all in the fall. Alder swamps and multiflora rose tangles have become quite dense in places and annually attract Worm-Eating Warbler and other shy land birds. MNWS now houses four to five pairs of resident Carolina Wrens, formerly a rare visitor, and White-eyed Vireos, which also turn up every spring, nested somewhere in the multiflora rose in the late 1980s near the main sanctuary pond.

A second pond has been excavated on private property just off the north side of the sanctuary where the boardwalk ends. This area is also excellent for birds, but in 1994 the new owners posted no-trespassing signs where birders once had access around the pond with no objection from the previous owner. The pond can still be viewed from the end of the boardwalk, and most birds will still be within earshot. Prothonotary Warblers seem to turn up here almost annually.

Spring migration is variable and quite unpredictable. Cold and damp winds often make the MNWS a bleak place, but when the winds are right (usually west or southwest), land-bird numbers can be spectacular. On these days, in fact, the unexpected can turn up anywhere on Marblehead Neck. Migrant Louisiana Waterthrush start turning up in mid- to late April every year along the stream passing parallel to the main trail to the pond, and Yellow-rumped Warblers can occur in incredible fallouts, as in the early May morning a few years ago when, after a dull start to the day's birding, I witnessed a sudden rush of thousands of Yellowrumps pour across the sanctuary, apparently coming in off the ocean. An hour later they were gone. Flint Street, just outside the west end of the sanctuary, goes over a hill and can be excellent birding over its entire length. Twenty-five years ago, twenty-five species of warblers were a regular spring occurrence for me, but the number averages closer to twenty species today. My records also indicate that overall numbers are lower. Still, almost anything can turn up, such as the cooperative Chuck-will's-widow, which sat perched on an

exposed branch for a day a few Mays back. Single Pine Siskins and Evening Grosbeaks regularly fly over in May even in nonwinter finch flight years. Late May and early June almost always result in a good showing of Empidonax flycatchers, including Acadian almost annually, and up to six Mourning Warblers at a time. Look for the Mourning Warblers anywhere near jewelweed patches. Philadelphia Vireos are annual in spring. Warbling Vireos are by far the rarest of the vireos to turn up here. Almost all of the "southern" warblers put in an annual appearance, some staying for weeks. Kentucky Warblers seem especially prone to hanging around in the dark understory for several weeks.

My strategy for birding the MNWS in spring is to get there early in the morning, with 5:30 AM being optimal, because I have found that many birds sing for a short while early before they start feeding and moving about. Song seems to increase again about 8 AM for those birders that have to come longer distances. The hill above the main pond always seems a good spot to listen and watch for flyovers.

From the middle of June to late July, the sanctuary generally has only common breeding species, which still include Wood Thrush, with occasional fall migrants (e.g., Tennessee Warbler, Swainson's Thrush) starting to appear by mid-July.

Fall migration, starting in August, seems more predictable than the spring migration. Shorebirds can be regularly heard migrating overhead in early morning in August, and land-bird migration starts in earnest in mid-August. Mid-September continues to be the peak and continues to be as good as ever. One September 19 about six years back was as good a birding day as I have ever had in Massachusetts, yielding twenty-one Philadelphia Vireos and many other large species totals. Birds of prey, especially Sharp-shinned Hawks, turn up in numbers also to enjoy the large numbers of migrants. The dense foliage makes it difficult to spot birds in the fall, but circling around the trails several times can continue to yield new finds. Of course, the bird for which the sanctuary is the most famous is the Painted Redstart, which was discovered in October 1947. Birding can be interesting through November and into December for late migrants like Connecticut Warbler, but generally it is pretty dull after mid-December--except for the winter of 1993-1994, when every winter finch except Red Crossbill turned up. Winter Wrens often survive the winter, and a Red-bellied Woodpecker often settles in for a few months.

Since Dorothy Snyder's article, several more species of shorebirds have been added to her sanctuary list, including Upland and Buff-breasted sandpipers. The status of many birds has also changed. Barred Owls are now almost annual in winter. Red-bellied Woodpecker is regular, and Carolina Wrens are resident. Other new species added to the sanctuary list include Common Raven, Fish Crow, Blue Grosbeak, Snow Bunting, and Yellow-headed Blackbird. Warbler numbers seem lower than twenty years ago, but the diversity still seems the

same. Some migrants, such as Blue-gray Gnatcatcher, have increased substantially.

Please remember to add any of your sightings to the record book on the back of the bulletin board.

**Elsewhere on Marblehead Neck**

On peak migration days, walking and listening on any of the residential streets, particularly Flint Street, can yield interesting species. Flint Street can be reached by walking straight out of the sanctuary on the main trail after passing the pond onto Bonad Road, which runs into Flint Street. A couple of boulders and some poles mark the boundary. This is the back entrance, which is gradually becoming more hidden every year by overgrowth.

Leaving the sanctuary from the main entrance on Risley Road, it can be worth turning left out on Ocean Avenue again for 0.7 miles to Castle Rock. Park on Ocean Avenue near the "castle," an impressive stone residence on the right. Walk down the public lane just to the left of the castle property for good views of the ocean. For big days in May, Castle Rock is a sure bet for Rough-winged Swallow, in case you missed it at the MNWS. The swallows nest in the cracks of the retaining wall for the castle's swimming pool on the right. Lingering seabirds such as loons, grebes, Common Eider, scoters, and mergansers can also be seen, as well as possibly Purple Sandpipers anywhere on the rocks. In winter, seabirds are plentiful, especially Common Eider, but Purple Sandpiper, Black Guillemot, and even Thick-Billed Murre have turned up.

In another 0.4 mile on Ocean Avenue, the northeastern tip of Marblehead Neck has a small public park with a lighthouse—Chandler Hovey Park. The park is also a good spot to check in winter, as well as for land birds during migration. A single Pine Grosbeak once flew in off the ocean in October here.

Retracing your route down Ocean Avenue, you probably will notice the great views toward Boston when you reach the end of the causeway. This section of the shore often contains shorebirds, including a Buff-breasted Sandpiper, which once spent ten days feeding in the wrack line in August, and a Semipalmated Plover in late January. An Eared Grebe once spent the winter just offshore, and even an orca (i.e., killer whale) turned up within one hundred yards of shore one May. In April and early May large flocks of Red-necked Grebe, up to 200 individuals, congregate here just offshore for a few weeks. In late May 1994 two Red-necked Grebes were still present in beautiful breeding plumage. Technically no parking is allowed along this stretch, but I have always been able to hop out and scope the water briefly without any problems. If the tide is out, the mudflats in the harbor can attract shorebirds, including the occasional Lesser Golden Plover. The beach parking lot (Devereux Beach) on the mainland end of the causeway is handy for parking and scoping the ocean (free entrance during fall, winter, and spring).

## Other Spots

If you are heading back toward Boston on Route 129 (Atlantic Avenue), just after a set of lights where Atlantic Avenue crosses Clifton Avenue (1.2 miles after the junction of Ocean Avenue and Route 129), turn left on Rockaway Avenue, follow it to the end, turn right, and immediately look for a place to park (again technically not legal but I have never had any trouble with a quick stop), and walk out Bass Rock Lane, a short lane with a view from Bass Rock over the ocean at the end. Check for seabirds, because on a big day I have seen Common Eider, scoters, mergansers, and even a Harlequin Duck here. Returning down Rockaway Avenue in the opposite direction, cross over Atlantic Avenue, continue on Rockaway for a short distance, and turn left on Warren Road, a dead-end road. Park here, and look for an entrance to Ware's Pond, a conservation area with a trail around it. Herons and migrants are sometimes attracted to this area.

If you are heading out of town on Route 114 (Lafayette Street), stop at the Marblehead-Salem line at Forest River, which is at the bottom of a long hill where Salem Harbor comes into view. The road is wide here, and parking is allowed on the Salem Harbor side of the road, adjacent to the conservation land along a former railway bed, now a foot trail. A glance inland up the Forest River estuary may yield ducks such as Gadwall or Northern Pintail, or a kingfisher, which nests somewhere in the nearby bank, perched on a snag. If the tide is out (and the tidegates are open), shorebirds and herons feed on the flats. A scan of Salem Harbor can also turn up ducks and shorebirds in season, and possibly terns and herons. A walk along the foot trail toward Marblehead leads to an extensive conservation area called Wyman Woods. The beginning section is one of the last spots where Indigo Bunting nests in town. The woods on the right have several trails, and migrants can sometimes be observed anywhere along the foot trail. Winter, Carolina, and House wrens have all been observed along the foot trail in January. The trail continues across a major roadway (West Shore Drive) and passes several ponds and wetlands where Green Heron, Cattle Egret, Virginia Rail, and Solitary Sandpiper have turned up. This area is used by joggers and bicyclists, and you will likely have to share the trail.

If you enter Marblehead on Route 114, other spots to check during migration include Waterside Cemetery and Steer Swamp. From Route 114, turn left onto West Shore Drive at the first set of traffic lights (0.6 mile from Forest River). Continue straight through another set of lights (a little less than a mile), and after about another half mile, start watching for the entrance to Waterside Cemetery on the left (open sunrise to sunset). Drive in, and park almost anywhere. The plantings attract lots of migrants in May, especially the bigger trees near the edge of Salem Harbor.

Continue along West Shore Drive, which becomes Beacon Street in about 0.4 mile from the cemetery. Continue on Beacon Street as it becomes small and

winding, until you pass by a view of a small rocky beach and cove on your left, where there are sometimes ducks in winter (about 1.2 miles from the cemetery). The road bends to the right and changes its name again to Norman Street. At this point, watch on the right after about 200 yards for the entrance to Steer Swamp Conservation Area, with a small parking area. It is a wet area with several trails that often attract migrants, particularly in spring, when Prothonotary Warbler and other "southern" specialties have been seen. The best way out is to retrace your steps to Route 114 unless you have a good sense of direction, a good map, or a desire to get lost or go shopping in the densely settled historic part of town.

While the Marblehead Neck Wildlife Sanctuary remains the best and most reliable place to see exciting flocks of migrant land birds, other areas may yield exciting finds with regular checking, as the peninsular geography of Marblehead suggests.

**JAN SMITH** works for the state Coastal Zone Management Office as a water quality planner. He is currently working on developing and implementing a state plan for managing pollution in storm-water runoff. Jan started birding in Marblehead in 1962 and received some early tutoring from Dorothy Snyder. He also worked in Brazil for the World Wildlife Fund in 1985-1986, looking at the effects of deforestation and forest fragmentation on bird populations and species diversity.


**Bird Watcher's Supply & Gift**

Steve & Staci Grinley, Proprietors

**Your birding stop in Newburyport for:**

Binoculars - Spotting Scopes - Field Guides and Bird Books - Audio - Video - Computer Software
Bird Feeders - Seed - Houses - Baths and Fountains
Wood Carvings - Stained Glass - Porcelains - Art - Craftings - Collectibles & Unique Gift Items

**Local Bird News & Information Center**

Coffee's always on, rest room available - stop in to catch up on the latest birds, to browse or just to "chat"

**Route One Traffic Circle, Newburyport; 508-462-0775**

Mon.-Fri. 9am-6pm Thurs.'til 8pm Sat./Sun. 7am-5pm

# Bird Watcher's General Store

Featuring: The Amazing **AVIARIUM** In-House Window Birdfeeder. One-way mirrored plexiglass allows you to watch the birds for hours but they can't see you!
Come see this exceptional birdfeeder in action.

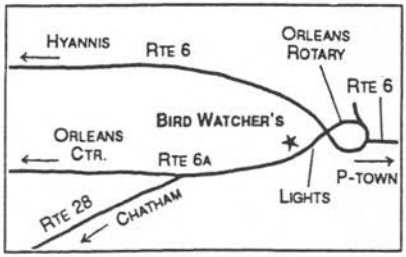
**OTHER BIRD-LOVER ITEMS INCLUDE:**

- Bird Mugs
- Bird Note Cards
- Bird Carvings
- Bird Field Guides
- Bird Books
- Bird Key Chains
- Bird Jewelry
- Bird Door Knockers
- Bird Telephone
- Bird Houses
- Bird Baths
- Bird Gift Wrap
- Bird T-Shirts
- Bird Photos
- Bird Prints
- Bird Calls
- Bird Recordings
- Bird Potholders
- Bird Towels
- Bird Carving Kits
- Bird Welcome Mats
- Bird Thermometers
- Bird Sun Catchers
- Bird Calendars
- Bird Pillows
- Bird Place Mats
- Bird Mobiles
- Bird Fountains
- Bird Bath Heaters
- Bird Switch Plates
- Bird Puzzles
- Bird Bookmarks

- **A complete line of Binoculars, Spotting Scopes and Tripods**
- **A children's section with birdhouse kits, beginner books,and other fun and educational items**

PLUS over 100 different types of bird feeders including Bluejay and Squirrel-proof feeders that work,GUARANTEED, plus ten different types of Bird Seed

GIFT CERTIFICATES & U.P.S. SHIPPING • OPEN YEAR ROUND




**Bird Watcher's General Store**
36 Route 6A • Orleans, MA 02653
**(508) 255-6974**
**or**
**1-800-562-1512**

# CONSERVATION OF GRASSLAND BIRDS IN THE NORTHEAST

by Robert A. Askins

The three articles on grassland birds in this issue reflect a growing interest in the future of grassland birds in eastern North America. The recent concern about these species comes surprisingly late in the course of population declines that have proceeded steadily for many decades. Although considerable attention has focused on migratory forest birds, grassland birds have shown much more severe and consistent declines (Peterjohn 1994). In fact, Breeding Bird Surveys indicate that the majority of woodland bird species in eastern North America have shown increasing population trends since 1966, while the majority of grassland and savanna species, such as Northern Bobwhite, Vesper Sparrow, Grasshopper Sparrow, Henslow's Sparrow, and Eastern Meadowlark, declined on eastern Breeding Bird Survey routes by more than two percent per year between 1966 and 1991. These species will soon disappear if this rate of decline continues. Already, many grassland species are listed as endangered, threatened, or species of special concern in New England and New York (Vickery 1994). The Upland Sandpiper and Grasshopper Sparrow (both of which were common in the nineteenth century) have disappeared from most of New England, and the Henslow's Sparrow is virtually extirpated from the region. We face the prospect of losing almost an entire community of bird species from the region.

Although the steady decline of grassland birds has been obvious for decades, it was largely ignored by conservation organizations and wildlife agencies. Grassland birds are typically found in hay meadows, pasture, or the mowed areas around airport runways. These artificial environments are of little interest to organizations dedicated to protecting wild nature, and a common interpretation is that the decline of grassland birds is an inevitable consequence of the return to the heavily forested conditions that characterized New England before the land was cleared by Europeans (Whitcomb 1987). However, historical descriptions of New England at the time of European settlement indicate that there were many openings in the forest, and that some areas were treeless and grassy (Whitney 1994). Most of these open landscapes were probably created by Indians, who burned large areas to improve hunting and to clear land for farming (Day 1953). Fields were abandoned when soil fertility declined after a few years of farming. Consequently, forest was constantly cleared to create new fields, resulting in a mosaic of old fields and forest in various stages of succession (Whitney 1994).

Some sandy, fire-prone areas may have been open grassland even before agriculture first appeared in the Northeast about 3000 years ago. Moreover, transitory grasslands were continually produced by various types of natural

disturbance. Grassy meadows grow in the dry beds of abandoned beaver ponds (Remillard et al. 1987), and low vegetation was occasionally produced by intense fires. Thus, many grassland bird species may be ancient components of the New England landscape rather than recent interlopers from the midwestern prairies.

Although there are historical records of the eastward spread of Horned Larks and Dickcissels from the Great Plains to the East Coast (Hurley and Franks 1976), most eastern grassland species were recorded along the East Coast by John James Audubon, Alexander Wilson, and other early ornithologists. If these species moved from western prairies to eastern farmland, the process must have occurred immediately after European settlement. Significantly, two grassland specialists, the Henslow's Sparrow and the Greater Prairie Chicken, have eastern populations that are distinctive enough from the populations of the western prairies to have been classified as subspecies. The Eastern Henslow's Sparrow (*Ammodramus henslowii susurrans*) has a breeding range restricted to central New York and southern New England south to Virginia, eastern West Virginia, and North Carolina (Smith 1968). It is darker than the western subspecies of Henslow's Sparrow, with a stouter bill, more buff on the underparts, and more yellow in the wing (Smith 1968). The eastern subspecies of the Greater Prairie Chicken was the extinct Heath Hen (*Tympanuchus cupido cupido*). During the early years of European settlement, Heath Hens were common or even abundant in open grasslands and scrublands on Long Island and around Boston, and they ranged along the coast from southern Maine as far south as Virginia (Gross 1932). The existence of these two distinct East Coast forms indicates that grassland habitat has been present long enough for distinctive populations to evolve.

Hence, we have evidence that both grassland habitats and grassland birds were part of the landscape of the East Coast long before European farmers cleared the land. Early successional species, including grassland species, are an important component of regional biological diversity. They generally have not received as much attention as forest and wetland species, however, because they primarily depend upon artificial or semi-natural habitats such as fallow farmland or hay meadows. Beavers and wildfires do not produce natural grasslands and shrublands as frequently as they did in the pre-settlement landscape.

The papers in this volume illustrate two of the approaches that are needed to preserve grassland birds: locating and maintaining existing populations, and creating habitat that will support new populations. Andrea Jones and Peter Vickery describe a statewide survey of grassland birds in Massachusetts that was organized by the Massachusetts Audubon Society (an organization that has taken a leading role in efforts to protect grassland communities). They show that a handful of sites accounts for most of the state population for several species of grassland birds. Most of these sites are airfields with extensive mowed grassland

around the runways. Without careful habitat management at these sites, these species are likely to disappear from Massachusetts. The successful attempt to increase the nesting success of Grasshopper Sparrows and Upland Sandpipers at Westover Air Base (Melvin 1994) shows that habitat management can be effective.

The two papers by Steve Ells also illustrate the effectiveness of careful management for the recovery of grassland bird populations. Bobolinks in hay meadows that were not cut until after the breeding season had much higher reproductive rates than those in meadows that were mowed in early summer. Most surprising, one of the fields that was managed for Bobolinks attracted a breeding pair of Henslow's Sparrow, a species that has almost disappeared from Massachusetts (Veit and Petersen 1993). This is an extreme example of the ability of grassland birds to colonize favorable habitats. This capability was also dramatically demonstrated when abandoned strip mines in heavily forested areas of West Virginia were restored and seeded with grass. Horned Larks, Eastern Meadowlarks, Savannah Sparrows, Vesper Sparrows, and Grasshopper Sparrows colonized these new grasslands (Whitmore and Hall 1978), showing that even extremely isolated grasslands can attract breeding populations of grassland birds.

Grassland birds can be retained in New England and other parts of eastern North America not only by identifying and maintaining appropriate habitat at localities where they presently occur, but also by creating new nesting habitat in places where they have disappeared. Because their habitat can be sustained only through mowing, burning, or other types of vegetation disturbance, the future of grassland birds in eastern North American will depend largely on how much favorable habitat is created for them as a result of activities such as farming and airport maintenance.

## References


Askins, R.A. 1993. Population Trends in Grassland, Shrubland, and Forest Birds in Eastern North America. In Power, D. (ed). *Current Ornithology*, Volume 11. New York: Plenum Press.

Day, G.M. 1953. The Indian as an Ecological Factor in the Northeastern Forest, *Ecology* 34:329-346.

Gross, A.O. 1932. Heath Hen. In Bent, A.C. (ed). *Life Histories of North American Gallinaceous Birds*. U.S. National Museum Bulletin 162.

Hurley, R.J., and E.C. Franks. 1976. Changes in the Breeding Ranges of Two Grassland Birds, *Auk* 93:108-115.

Melvin, S. 1994. Military Bases Provide Habitat for Rare Grassland Birds. Massachusetts Division of Fisheries and Wildlife, *Natural Heritage News* 4:3.

Peterjohn, B. 1994. The North American Breeding Bird Survey, *Birding* 26:386-398.

Remillard, M.M., G.K. Gruendling, and D.J. Bogucki. 1987. Disturbance by Beaver (*Castor canadensis* Kuhl) and Increased Landscape Heterogeneity. In Turner, M.G. (ed). *Landscape Heterogeneity and Disturbance*. New York: Springer Verlag.

Smith, W.P. 1968. Eastern Henslow's Sparrow. In Austin, O.L., Jr. (ed). *Life Histories of North American Cardinals, Buntings, Towhees, Finches, Sparrows, and Allies.* Part Two. New York: Dover Publications.

Veit, R.R., and W.R. Petersen. 1993. *Birds of Massachusetts.* Lincoln, MA: Massachusetts Audubon Society.

Vickery, P.D. 1992. A Regional Analysis of Endangered, Threatened, and Special Concern Birds in the Northeastern United States. *Transactions of the Northeast Section of the Wildlife Society* 48:1-10.

Whitcomb, R.F. 1987. North American Forests and Grassland: Biotic Conservation. In Saunders, D.A., G.W. Arnold, A.A. Burbidge, and A.J.M. Hopkins (eds). *Nature Conservation: The Role of Remnants of Native Vegetation.* Chipping Norton, Australia: Surrey Beatty & Sons Pty Limited.

Whitmore, R.C. and G.A. Hall. 1978. The Response of Passerine Species to a New Resource: Reclaimed Surface Mines in West Virginia. *American Birds* 32:6-9.

Whitney, G.G. 1994. *From Coastal Wilderness to Fruited Plain.* New York: Cambridge University Press.

**ROBERT A. ASKINS** is a professor of zoology at Connecticut College. He recently was a guest speaker for the Nuttall Ornithological Club on the status of grassland bird species in the Northeast. He has also written extensively on the effects of habitat fragmentation on bird communities.

FREE wild bird watering tips pamphlet,
Happy Bird,
Box 86, Weston, MA
02193, Manufacturer
of Solar Sipper,
1-617-899-7804

# DISTRIBUTION AND POPULATION STATUS OF GRASSLAND BIRDS IN MASSACHUSETTS

by Andrea L. Jones and Peter D. Vickery

A walk along a farm road in the Connecticut River Valley in May reveals a variety of pleasing sounds. Male Bobolinks, as obvious as they are loud, fly above the hayfields. A flash of yellow appears as a meadowlark darts above the grasses singing its clear, melodic song. To the trained ear, the quiet buzzy song of a Savannah Sparrow may be heard from a clump of grasses. If it were the early 1900s, these sounds would most likely be accompanied by a variety of other grassland bird songs; the Upland Sandpiper's shrill "wolf whistle," the Vesper Sparrow's sweet, melodic song, or possibly the Grasshopper Sparrow's insect-like buzz. However, sadly, these sounds are now rarely heard in Massachusetts.

In 1993 the Center for Biological Conservation (CBC) at the Massachusetts Audubon Society (MAS) initiated a two-year project to inventory the distributions and populations of grassland birds in Massachusetts. The survey focused primarily on three species: Grasshopper Sparrow (*Ammodramus savannarum*), Upland Sandpiper (*Bartramia longicauda*), and Vesper Sparrow (*Pooecetes gramineus*). Other species included in the survey were Savannah Sparrow (*Passerculus sandwichensis*), Bobolink (*Dolichonyx oryzivorus*), and Eastern Meadowlark (*Sturnella magna*). Researchers, naturalists, and birders throughout the state helped us identify promising grassland tracts; then, having compiled a long site list, we set out to determine the distribution and abundance of the six species of grassland birds. The data gathered in our study have provided important insights into the continuing story of the rise and fall of grassland bird populations in New England.

Native grasslands occurred sporadically in New England in pre-Colonial times. These grasslands were maintained by fires, either natural or, more frequently, set by Native Americans (Patterson and Sassaman 1988). These open areas provided habitat for grassland birds, including the endemic Heath Hen (*Tympanuchus cupido cupido*), extinct since the 1930s. Because fires are now suppressed, many native grasslands and heathlands are growing up with thick shrub cover that is unsuitable for ground-nesting birds.

There is little doubt that grassland bird populations in Massachusetts reached a zenith in the late eighteenth and nineteenth centuries as eastern forests were cut and converted to large farms. However, in the past century more than sixty percent of New England's farms have disappeared; the forests have reclaimed many of the fields that once supported species such as Vesper Sparrow and Upland Sandpiper. Degradation of remaining grassland is also affecting grassland birds. Some grasslands are no longer maintained, so trees

and shrubs are encroaching, further diminishing the area and quality of grassland habitat. Modern agricultural practices, such as early and more frequent summer mowing of hayfields, can destroy nests before young have fledged, and, because of frequent mowing at most airports, birds are sometimes unable to establish successful nests or are exposed to predators.

Additionally, many farms have been converted into suburban areas. Loss of habitat appears to be the primary reason for the decline of grassland birds in the Northeast (Askins 1993). These birds are now reduced to breeding primarily at airports, a few remaining large hayfields and pastures, and some meadows in conservation areas. The majority of grassland sites in Massachusetts are currently concentrated in the Connecticut River Valley and on offshore islands (e.g., Martha's Vineyard, Nantucket, and the Elizabeth Islands). However, development and fragmentation of many of these sites are continuing causes of concern for their future ability to support breeding populations of grassland birds.

Nearly all grassland birds have specific habitat requirements for types of vegetation and size of grassland area. Many fragmented grasslands are now too small to support grassland bird species. Upland Sandpipers, for example, need breeding areas of at least 100 acres and preferably greater than 400 acres. Vesper Sparrows need areas of roughly fifty acres, and Grasshopper Sparrows prefer areas of at least 200 acres (Vickery et al. 1994). Eastern Meadowlarks, Bobolinks, and Savannah Sparrows are less dependent on area and are therefore still breeding in many smaller fields throughout the state. It is suggested that a grassland of at least 500 acres is needed to maintain a diverse population of grassland bird species (Vickery et al. 1994). Although some large-scale monoculture farms still exist throughout New England, these are unsuitable for many grassland birds, such as the Upland Sandpiper, that require a mosaic of grassland habitats and grass lengths.

Landfills have recently become breeding habitats for some grassland birds. As landfills reach full capacity, they are capped with plastic shields that cover the fill material. These shields are topped with eighteen inches of soil and seeded with grass. These dry grasslands must be mowed every year to ensure that the roots of shrubs or trees will not penetrate the plastic cap. Ironically, over the past few years a number of these artificial grasslands have provided breeding habitat for Grasshopper Sparrows, Savannah Sparrows, Bobolinks, and Eastern Meadowlarks.

## Summary of the Status of Three Grassland Bird Species Prior to Survey

**Grasshopper Sparrow.** During the late nineteenth and early twentieth centuries, Grasshopper Sparrows were considered abundant, particularly in central Massachusetts, the Connecticut River Valley, Cape Cod, and the islands.

Early literature cites "In our central valley, the Grasshopper Sparrow, though little known, has long been, locally, abundant . . . in the wide fields along the Amherst/Hadley line it is now far from rare" (Bagg and Eliot 1937). However, within a few decades, there was a decline: "Formerly an abundant summer resident (Cape Cod, Nantucket, Martha's Vineyard) occurring more locally north to Essex County and in the two inland river valleys. It has greatly decreased and is now becoming rare and local" (Griscom and Snyder 1955). In recent literature, this species is described as a "rare to uncommon breeder" (Veit and Petersen 1993) in Massachusetts. Grasshopper Sparrows, currently listed as a species of special concern in Massachusetts, are state-listed by six of the seven states in the New England-New York area (endangered in two states, threatened in one, special concern in three) (Vickery 1992), have declined in Massachusetts to a few remaining strongholds. These include Westover Air Reserve Base (ARB) and Nashawena Island (one of the Elizabeth Islands).

**Upland Sandpiper.** Upland Sandpipers were considered to be a common summer resident during the peak agricultural era in Massachusetts (Griscom and Synder 1955). In the mid-nineteenth century, Upland Sandpipers were documented as a common species: "breeds, and towards autumn is often very common" (Allen [1864] in Bagg and Eliot 1937). By the turn of the century, this species was already declining, and it was soon noted that "this once well-represented tattler has come close to extinction in our region during the past thirty years" (Bagg and Eliot 1937). Most recently, they have been described as a "local and very uncommon breeder, greatly decreased since the 1800s" (Veit and Petersen 1993). They have declined rapidly to the point of becoming a state-listed species in all seven states within the New England-New York region (Vickery 1992). They are listed as endangered in two states (including Massachusetts), threatened in three, and special concern in two (Vickery 1992).

**Vesper Sparrow.** Vesper Sparrows have significantly declined throughout New England; they are listed as endangered in two states and special concern in three states in the New England-New York area (Vickery 1992). During the late nineteenth and early twentieth centuries, Vesper Sparrows were common, particularly along the Connecticut River Valley and on Cape Cod, inhabiting dry farmlands and sandy areas. Vesper Sparrows were noted as a "common summer resident" (Bagg and Eliot 1937) and "in 1864 . . . abundant breeding in open sandy fields and dry pastures" (Allen [1864] in Bagg and Eliot 1937). A decline in this species became evident by the mid-twentieth century, at which time they were noted as "formerly an abundant summer resident in open farming country throughout the state, now rapidly decreasing and becoming rare and local with the decline of agriculture" (Griscom and Snyder 1955). As this decline has continued, the species is noted most recently in *Birds of Massachusetts* as an "uncommon and local breeder" (Veit and Petersen 1993).

## Survey Methods

Our primary survey efforts were concentrated on the three species that we considered to be in the greatest jeopardy: Grasshopper Sparrow, Upland Sandpiper, and Vesper Sparrow. For these species a complete statewide survey at 150 sites was conducted during the 1993 and 1994 field seasons. These sites included small hayfields, farm pastures, private and public airports, and large military air bases. Locations ranged from the Berkshires to Provincetown, and included the Elizabeth Islands, Martha's Vineyard, and Nantucket. Knowledgeable ornithologists and naturalists were contacted statewide to identify historical or current grassland bird sites. These 150 sites were also surveyed for Savannah Sparrow, Eastern Meadowlark, and Bobolink, but the numbers for these species were not complete statewide population estimates.

Surveys were conducted using a point census technique with a 100-meter radius. For five minutes, all birds seen or heard were recorded. A tape of Vesper Sparrow, Grasshopper Sparrow, Upland Sandpiper, Savannah Sparrow, Eastern Meadowlark, and Bobolink songs was then played. Each song was approximately thirty seconds long with a thirty-second interval between each song. Birds responding to the tape were counted. Birds seen or heard while walking between census points were also counted. Three to five point censuses were conducted at each site, depending on the size of the grassland. A second survey was conducted for some of the larger and more productive sites. At these sites, a complete walk-through of the grasslands, while periodically playing the tape, gave a more precise census of grassland birds numbers.

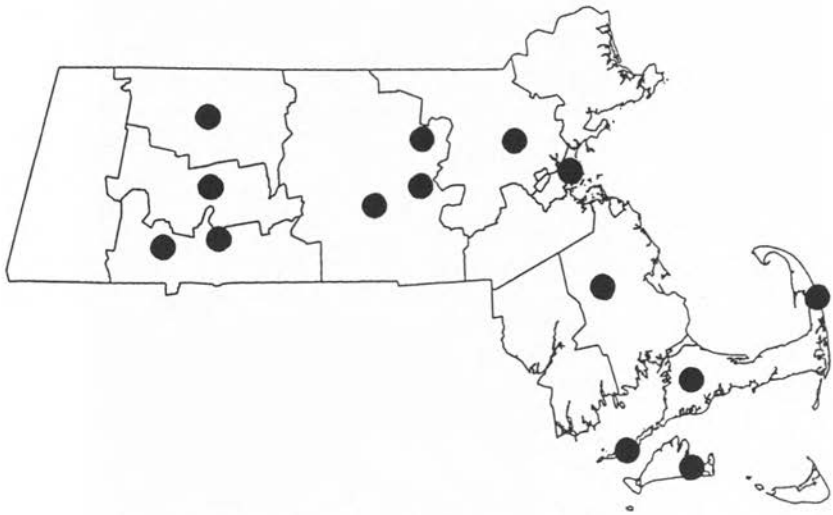


**Figure 1. Major Grassland Sites in Massachusetts**

## Results

Figure 1 and Table 1 summarize the survey results. The most important grassland/heathland sites (based on number of pairs and diversity) censused were Logan Airport, Hanscom Field, Cumberland Farm, Fort Devens parachute landing, Clinton landfill, Worcester Municipal Airport, Westover ARB, Barnes Municipal Airport, Marconi Barrens, Katama Airfield, Turner's Falls Airport, South Maple Street (Hadley), Camp Edwards cantonment, Otis ANG Base Airfield, Burts Pit Road (Northampton), and the Elizabeth Islands. Of these sites, surveys at Fort Devens parachute landing, Westover ARB, Camp Edwards cantonment, and Otis ANG Base Airfield were also conducted by the Massachusetts Division of Fisheries and Wildlife staff. They surveyed these larger sites for several mornings, which provided a more accurate inventory (Melvin 1993).

**Grasshopper Sparrow** (state listed: special concern). Approximately 350 singing male Grasshopper Sparrows were counted at thirty-three sites. The following fourteen sites had more than four pairs: Hanscom Field; Worcester landfill; Fort Devens parachute drop zone; Worcester Municipal Airport; Clinton landfill; Westover ARB; Barnes Airport; Turner's Falls Airport; Katama

**Table 1. Numbers of Grassland Birds Counted During 1993-1994 Field Seasons**

| Species | Numbers | Number of Sites |
|---|---|---|
| Upland Sandpiper | 85[1] | 10 |
| Vesper Sparrow | 96 | 28 |
| Grasshopper Sparrow | 350[1] | 33 |
| Eastern Meadowlark | 198 | 41 |
| Bobolink | 579 | 55 |
| Savannah Sparrow | 434 | 66 |

[1] Approximate numbers

Numbers are singing males for Vesper Sparrow, Grasshopper Sparrow, Eastern Meadowlark, Savannah Sparrow, and Bobolink. Numbers for Upland Sandpiper are estimated numbers of pairs based on number of adults counted.

Numbers for Eastern Meadowlark, Bobolink, and Savannah Sparrow do not represent complete statewide population numbers.

Airfield; Dukes County Airport (Martha's Vineyard); Naushon, Nonamesset, and Nashawena islands (Elizabeth Islands); and Burts Pit Road (Northampton). Greater than seventy percent of the state's Grasshopper Sparrow population occurs at only two sites: Nashawena Island and Westover ARB. Should either of these sites no longer support breeding Grasshopper Sparrows, the effect on the state population would be disastrous. The largest Grasshopper Sparrow breeding assemblage in Massachusetts, on the Elizabeth Islands, has declined by fifty-eight percent (to 140 pairs) from 1988 to 1994 (Hatch 1988), whereas the population at Westover ARB has increased from 55 to 168 pairs (Melvin 1994) during the same period. Because there is a major decline across the state, and because such a high proportion of the state's population is limited to just two sites (one of which is declining precipitously), the CBC has recommended that Grasshopper Sparrow be elevated to endangered species status by Commonwealth wildlife authorities.

**Upland Sandpiper** (state listed: endangered). Approximately eighty-five pairs of Upland Sandpipers were counted at ten sites. The following five sites had more than four pairs: Logan Airport, Hanscom Field, Cumberland Farm (a large expanse of farmland in southeastern Massachusetts), Westover ARB, and Camp Edwards cantonment. The other five sites only support one or two breeding pairs of Upland Sandpipers. Westover ARB, the only site actively managing for this species, contains the majority of breeding pairs for the state (101 adults counted in 1994) (Melvin 1994). Should this site or the other airports and military sites close, breeding Upland Sandpipers in Massachusetts could rapidly disappear.

One major reason for the decline in Upland Sandpipers in the region is the amount of breeding habitat they require. At least 100 acres of optimal habitat, with surrounding open country is preferred (Vickery et al. 1994). Very few large expanses of grassland remain: farms have been fragmented by forest encroachment and development, and the expanse of open country no longer exists in most locations.

**Vesper Sparrow.** Only ninety-six singing male Vesper Sparrows were counted at twenty-eight sites. The following nine sites had more than four pairs: Plymouth Airport, Fort Devens parachute drop zone, Agawam Industrial Park, Orange Airport, Provincetown/Truro dunes, Provincetown Airport, Marconi Barrens, Potato Farm-Hawley, and Griffins Island-Wellfleet. The Provincetown/Truro dunes and Marconi Barrens, both on Cape Cod, hold the largest breeding populations of Vesper Sparrows, each with ten pairs. Both of these sites are protected by the Cape Cod National Seashore. However, the number of birds at Marconi Barrens appears to have decreased over the years, as shrubs continue to fill open spaces. Without active management, these sparrows are not secure at this site. The remaining Vesper Sparrows are scattered across the state in small populations at mostly transitory sites. Although Vesper

Sparrows are not currently listed for protective status in Massachusetts, the CBC is recommending to state wildlife authorities that this species be state-listed as endangered. We expect such action will help ensure its protection and will ultimately improve the dwindling numbers found throughout the state.

Thus, Vesper Sparrows are now primarily confined to some remaining large agricultural areas within the Connecticut River Valley and along the protected coastal moors of Cape Cod, and are scattered in small numbers throughout the state at small airports. Unlike Grasshopper Sparrows, there are no large concentrations of Vesper Sparrows anywhere in Massachusetts; their distribution is more widespread, but only a few pairs are found at each site. Most of these sites are unmanaged, and it is uncertain whether they will continue to provide suitable breeding habitat.

**Savannah Sparrow, Eastern Meadowlark, Bobolink.** Because these species do not have as large area requirements as the above-mentioned species for their breeding grounds and have adapted to a variety of agricultural situations, they are still scattered throughout the state, particularly in the Connecticut River Valley, where the majority of the state's farmland still exists. However, numbers of these species are considered declining throughout Massachusetts (Veit and Petersen 1993). For instance, Bobolinks, primarily nesting in hayfields, are threatened by early mowing practices. In Lincoln, Massachusetts, one researcher estimated about eighty percent or more mortality of Bobolink young in active hayfields mowed throughout the breeding season (Ells 1995). Survey efforts will continue throughout the Connecticut River Valley to document further breeding sites for these species.

## Discussion

Interestingly, our inventory of 150 sites revealed that some of the best areas for grassland birds are military airfields. The large grasslands surrounding these runways provide prime breeding and feeding habitat for many grassland birds. Westover ARB in Chicopee, with 1500 acres of grassland habitat, is the most important site for grassland birds in Massachusetts (Melvin 1994). The Natural Heritage and Endangered Species Program has worked closely with environmental engineers on the base to ensure protection of grassland birds and to develop management practices to increase numbers of breeding pairs. The grassland habitat that has been created actually discourages larger flocking birds, such as gulls and waterfowl, which pose a threat to aircraft.

Better habitat management of existing grassland sites provides the best opportunity to protect and enhance grassland bird populations. If mowing can be delayed until the end of the breeding season (approximately July 31), reproductive success will improve. Prescribed burning, which has been a major initiative by MAS on Nantucket and throughout Massachusetts, has been demonstrated to improve habitat for most grassland birds. However, thus far

only a few grassland sites have been burned to provide high-quality bird habitat. The CBC is currently beginning work on a comprehensive grassland management manual to provide management options for all grassland flora and fauna that will be distributed to landowners throughout New England. By using these management tools and educating private, municipal, and military land managers about these practices, we may be able to reverse the decline of these rare birds.

## References


Askins, R.A. 1993. Population Trends in Grassland, Shrubland, and Forest Birds in Eastern North America. *Current Ornithology* 11:1-34.

Bagg, A.C., and S.A. Eliot, Jr. 1937. *Birds of the Connecticut Valley in Massachusetts.* Northampton, MA: The Hampshire Bookshop.

Ells, S.F. 1995. Bobolink Protection and Mortality on Suburban Conservation Lands. *Bird Observer* 23(2):98-112.

Griscom, L., and D.D. Snyder. 1955. *The Birds of Massachusetts.* Salem, MA: Peabody Museum.

Hatch, J.J. 1988. Status of Grasshopper Sparrow, Piping Plover and Northern Harrier on the Elizabeth Islands, Massachusetts 1988. Unpublished report. Massachusetts Division of Fisheries and Wildlife, Boston, MA.

Melvin, S.M. 1993. 1993 Census Results and Management Recommendations for Grassland Birds at Westover Air Reserve Base, Massachusetts. Unpublished report. Massachusetts Division of Fisheries and Wildlife, Boston, MA.

Melvin. S.M. 1994. Military Bases Provide Habitat for Rare Grassland Birds. *Natural Heritage News.* Massachusetts Division of Fisheries and Wildlife 4(2):3.

Patterson, W.A., III, and K.E. Sassaman. 1988. Indian Fires in the Prehistory of New England. Pages 107-135 in *Holocene Human Ecology in Northeastern North America.* (G. P. Nicholas, ed.). New York:Plenum Publishing Corporation.

Veit, R.R., and W.R. Petersen. 1993. *Birds of Massachusetts.* Lincoln, MA: Massachusetts Audubon Society.

Vickery, P.D. 1992. A Regional Analysis of Endangered, Threatened, and Special-concern Birds in the Northeastern United States. *Transactions of the Northeast Section of the Wildlife Society* 48:1-10.

Vickery, P.D., M.L. Hunter, Jr., and S.M. Melvin. 1994. Effects of Habitat Area on the Distribution of Grassland Birds in Maine. *Conservation Biology.* 8(4): 1087-1097.



**ANDREA L. JONES AND PETER D. VICKERY** work for the Center for Biological Conservation of the Massachusetts Audubon Society (MAS) in Lincoln, Massachusetts. Andrea is the Grassland Conservation Coordinator at MAS and has completed two years of research for the Grassland Bird Project. She has a B.S. in Wildlife Biology from the University of Massachusetts, Amherst. Peter has studied habitat requirements and population dynamics of grassland birds in New England for the past twelve years. He has worked throughout New England to promote grassland bird and habitat conservation. He has a Ph.D. in Wildlife from the University of Maine in Orono.

*Buying a used VW?*
Complete Pre-purchase
Evaluation
**Golf - Jetta - Quantum**
**$50.**

(617) 923-0941
GT Shop Inc.
*Formerly Coop Garage*

We service Nissan, Honda,
Saab,Toyota, VW, Volvo

106 Pleasant Street
Watertown Square

***Rip Ryder***
**MONOMOY ISLAND FERRY**
**North & South**
**U.S. Coast Guard Licensed**
*Captain:* **KEITH LINCOLN**
**— Daily Trips — Sight Seeing**
**— BIRDWATCHING**
**(508) 587-4540 • (508) 945-5450**

***Pelagic Trip***  ***September 8-9, 1995***

**from Point Judith, RI** **Wayne R. Petersen, leader.**
***Shearwaters, storm-petrels, jaegers, others.***
**For reservation information, call (203) 259-6305 or write to the Connecticut Audubon Society, 2325 Burr Street, Fairfield, CT 06430**

# BOBOLINK PROTECTION AND MORTALITY ON SUBURBAN CONSERVATION LANDS

by Stephen F. Ells

In 1993 and 1994 I studied the role of conservation lands in Lincoln, Massachusetts, in the protection of the Bobolink *(Dolichonyx oryzivorus)*, a grassland species in regional decline (Bollinger and Gavin 1989; Veit and Petersen 1993). In Massachusetts public and private conservation organizations own hundreds of thousands of acres, some of which are grassland. Municipal conservation commissions, for example, control more than eighty-five thousand acres. Twenty-eight commissions (including Lincoln's) each control at least a thousand acres of land. Also, private conservation owners, such as the Massachusetts Audubon Society's (MAS) Drumlin Farm in Lincoln, control additional grasslands. Wildlife protection, however, is but one of many issues clamoring for their attention.

I studied the Bobolink because it is a declining, although much loved, bird. Its spirited song is a welcomed part of springtime for many townspeople. They would agree with Thoreau's Truro child who asked, "What makes he sing so sweet, Mother? Do he eat flowers?" If even the remnant population of this popular species were not being protected on conservation lands, it would warn of dangers facing less noticeable grassland plants and animals. Also, the Bobolinks are the longest distance migrants of all North American songbirds, flying fourteen thousand miles round-trip and yet often returning to within yards of their previous year's nests.

I wanted to learn what strategies existed to protect the Bobolink on its Lincoln breeding grounds and whether this stewardship would benefit other grassland birds. I was worried about the effect of haycropping and the choice of an appropriate "safe" cutting date. Finally, I wanted to learn whether simple monitoring techniques were feasible for other conservation observers to use to protect Bobolinks on their lands.

Recent writers have pointed out that wildlife-hostile agribusiness practices are transforming farmland throughout the country (Rodenhouse et al. 1992; Butcher 1993; Line 1994). They suggest that soon the only breeding reservoirs for many grassland species may be either less-intensive farms on the metropolitan fringe or public lands, such as airports. Although agribusiness is not as prevalent in Massachusetts, our conservation problems may be comparable. Grasslands continue to be abandoned or developed. For example, our dairy farms, with their hayfields and their pastoral beauty, are leaving the landscape more than half have gone in the last seven years. Some of these farms will remain in some agricultural use, but many will be developed. As I write, a 150-acre grassland farm just outside Boston's outer circumferential highway,

Interstate 495, is now 110 house lots and is on the market for thirty million dollars. Thus, local conservation lands may become even more important, by default, as regional breeding islands for certain grassland species.

Both the Lincoln Conservation Commission (LCC) and the MAS are known as good land managers and have chosen to manage or lease some of their holdings as agricultural land, including 220 acres of hayfields. This beneficial policy attracts open land wildlife (including Bobolinks) and supports the goals of open space and traditional landscape preservation, recreation, education, and community and family farming. Moreover, hay can make money for the conservation owner or can be swapped for free mowing. To produce top-dollar hay for the dairy and beef market, however, the farmer wants to cut the hay at its peak in May or June and again later in the summer. A problem arises when these intensive activities interfere with the conservation owner s mission.

## Methods

In May and June of 1993 and 1994 I surveyed all public and private grasslands in Lincoln (more than fifty parcels) for Bobolink breeding activity. I identified the presence of stable male breeding territories (i.e., those on which one or more females were established) by repeated observation. Although each male's territory may contain more than one nesting female, for the purposes of this study I did not attempt to identify the number of nests per male territory. (Bobolinks are polygynous, i.e., one male mates with more than one female, while each female presumably mates with only one male.) I then noted the start of the hatch by observing a pattern of repeated male and female feeding trips and the carrying of fecal sacs and egg shells. I recorded the date of the haycropping of each of the breeding fields and, using available information in the literature on the Bobolink breeding cycle, estimated the percentage of stable male territories destroyed before any reasonable chance of nestling or fledgling survival. I used that percentage as an estimate of the loss of the year's breeding potential.

In addition, I intensively monitored four breeding fields that contained "cut-later" Bobolink sanctuaries. Three of these fields were active hayfields owned by the town of Lincoln or the MAS. The other was an old hayfield owned by the town of Carlisle. I monitored these four fields until the owner cut or the birds left, or a total of 288 times during the two-year period.

Almost all my observations were made from the field margins or along customary paths. I did not search for, mark, or visit active nests or force-flush new fledglings. Despite the imprecision this introduced, I preferred to substitute patience for intrusion. Field-edge walking is the custom in town, is appreciated by the farmers, and does not attract other users into the fields (e.g., mountain bikes, joggers, and dog walkers). It was also consistent with the objective to use simple monitoring techniques. I did, however, make use of intensive research

done in Oregon and New York on the breeding cycle. Although learning about grassland birds by observing them from the hayfield edge is like learning marine biology by sitting on the beach there is a lot going on that one does not see I learned enough to estimate the loss of Bobolink breeding potential and to record unexpected late-summer activity.

## Results and Discussion

**Bobolink Breeding Territories in Lincoln.** Ninety percent of the fifty-seven Bobolink breeding territories in Lincoln were on conservation lands. This is a much higher percentage than would be expected based on relative acreage, for conservation organizations own or manage only about sixty-three percent of the hayfield acreage in town (or one hundred forty acres). The bird s affinity for conservation hayfields is perhaps caused by two factors: the average size of these hayfields (thirteen acres) is almost twice that of nonconservation hayfields (seven acres); and the past pattern of early haycropping on the latter, with the likely low rate of breeding success, may discourage renesting there.

Furthermore, ninety-five percent of the breeding territories in Lincoln were in hayfields. This also is a much higher percentage than would be expected based on relative acreage, for hayfields amounted to only fifty-two percent of the grasslands in Lincoln. (The other grasslands of comparable size included pastures, passive-use recreational grasslands, athletic field margins, abandoned or rotary-mowed fields, alfalfa or clover patches, grain fields, and recently reseeded hay or cover crops.) Lincoln's breeding hayfields contained a typical mix of grasses (e.g., orchard grass with timothy and Kentucky blue grass) with some patchy alfalfa and clover, and scattered goldenrod, dock, or loosestrife. The fields were periodically fertilized and limed but have not been tilled and reseeded for more than four years. (By way of contrast, in Carlisle, Bobolinks for at least twenty years have bred in an old, sparse, seventeen-acre field, with many weeds and much buckthorn, which a farmer mows gratis in late summer for low-quality hay.) Thus, the attractiveness and importance of these older conservation hayfields in attracting breeding Bobolinks in Lincoln are clear.

**Size of Breeding Fields in Lincoln.** The breeding hayfields in Lincoln are smaller than those usually suggested for the Bobolink. Larger fields (at least twenty-five to seventy-five acres) are said to be needed for Bobolink breeding (Herkert 1991). The Lincoln Bobolinks, however, used smaller, scattered fields for they were the only ones available in this predominantly wooded suburban town. These breeding hayfields ranged from four and one-half acres to twenty acres. At this small scale, arraying these fields by fence line acreage is not a useful way of displaying the openness preferred by these Bobolinks. Instead, I found it helpful to cluster adjacent hayfields, which were often separated only by a row of brush, and to sort both the clusters and the isolated fields into a five-acre distribution pattern, as follows: there were two isolated breeding fields of

*Bobolinks* *Reproduced with permission from E. W. Friedmann*

less than five hayfield acres; five fields or clusters of fields of five to ten acres; two fields or clusters of eleven to fifteen acres; two fields or clusters of sixteen to twenty acres; and two fields or clusters above twenty-one acres. Thus, recognizing the potential of and being careful with small breeding fields is the vest-pocket conservation that is typical of the metropolitan environment.

**Start of Hatching in Lincoln Bobolinks.** Based on parental behavior, I inferred that the hatch in Lincoln started about June 8-9 in 1993 and by June 6 in 1994. As confirmation, on June 10, 1993, I found an early nest with five recent nestlings by observing anxious adults searching under freshly cut hay at Drumlin Farm. (One nestling had been freshly killed and the nest was destroyed the next day by raking equipment.) Other observers in Massachusetts have reported similar hatch starting dates: June 7-10 in 1987, 1988, and 1994 at the MAS Daniel Webster Sanctuary and June 9-14 in 1988, 1989, 1990, and 1994 at the higher elevation of the MAS Wachusett Meadow Sanctuary (Drinkwater 1988; Birch 1994; Choiniere 1993, 1994).

I found the start of the hatch to be the most useful and reliable index date from which other events in the breeding cycle can be measured. It is an event that a conservation observer can infer from field-side by sightings of the carrying of egg shells and fecal sacs, and of repeated parental feeding.

One puzzling historical discrepancy emerged. Based on the observed

hatching dates and an incubation period of about twelve days from the penultimate egg, I estimated the dates for earliest-egg laying in Lincoln as May 21-24, 1993-1994. I found only one other Massachusetts nest record as early as this—a nest with three eggs found at Alford, Massachusetts on May 25, 1932 (Kingsbury 1933). These dates are earlier, however, than dates of June 1 or later recorded for one or more eggs, or a full clutch, or for nesting, by Brewster (1906), Townsend (1920), Samuels (1870, reported in Forbush 1927), Bagg and Eliot (1937), Wetherbee (1945), Bailey (1955), Bent (1958), the Massachusetts Breeding Bird Atlas (unpublished), and the North American Nest Record Program at Cornell (Lowe 1994, pers. comm.). It is possible, although unlikely, that avid "eggers" of those times missed earlier eggs. An alternative inference is that earlier nesting is occurring, perhaps allowed by a warmer climate, changes in hayfield management (Bollinger and Gavin 1989), or the natural selection of earlier breeders under the pressure of a century of ever-earlier haycropping.

**Fledging Dates.** Estimating from the field edge the date of initial fledging (i.e., crawling from the nest) or first-flight was less reliable than estimating hatch dates. Stokes and Stokes (1989) suggest that early flight occurs about two days after fledging, with three more days required to fly well enough to follow the parents and beg for food. In Lincoln, however, early flights were brief and rare, some flights were premature panic flushes, and quick-glance identification clues could be misleading (e.g., some parenting females had lost their tails). The grass, not the sky, is the fledgling's world, and they leave it reluctantly. Thus, the start of fledging could not be easily inferred but probably occurred in Lincoln between June 17-19 in both 1993 and 1994, although fledglings were not conspicuous until the last week of June. This is consistent with the customary hatch-to-fledge time of approximately ten to eleven days (Stokes and Stokes 1989). At other locations, flightless fledglings were monitored at MAS Daniel Webster crawling on grass stems on June 17, 1994, and were flying two days later. Monitors also saw fledglings flying on June 23-24, 1993, at MAS Wachusett Meadow, and on June 25, 1994 (weakly) at Wayland's Heard Farm (Patterson 1994 pers. comm.).

**Estimated Nestling and Fledgling Mortality.** Based on my observations of nesting activity and on published data on the Bobolink breeding cycle, I estimated that haycropping in Lincoln killed about eighty percent or more of the young Bobolinks in fields where haycropping went on normally. This probable severe result occurred on all normally cut hayfields, whether they were owned by the LCC, the MAS, the private land trust, small farmers, a neighborhood association, the airport, or others. In 1993 and 1994, out of a total of fifty-seven established male breeding territories, forty were in unprotected fields. Although in both 1993 and 1994 the weather and other reasons delayed haying, seventy percent of the unprotected hayfields were cut before mid-June, and all fields were cut by June 28 in 1993 and July 10 in 1994. Because haycropping kills

essentially all nestlings and at least fifty percent of recently fledged young (Bollinger and Gavin 1989), a comparison of the timing of the hatch or observations of fledglings with the date of the cut made it clear that in only eight territories could some of the young birds have survived.

Bollinger et al. (1990) have also measured the effect of haycropping on Bobolink mortality. Their widely cited report of sixteen to forty percent mortality of Bobolink young in hayfields in upstate New York, however, may reflect the fact that many fields (particularly the older ones, which produce the most Bobolinks) were not cut until mid-July. The authors acknowledged that earlier cutting would have produced higher mortality in their study area. Lincoln's earlier completion of cutting, presumably resulting in higher Bobolink mortality, may be much closer to the norm in eastern Massachusetts.

**Nesting Success on Small Cut-later Sanctuaries.** Even small cut-later sanctuaries, despite their disadvantages, were very important in an otherwise hostile landscape. By 1994 the LCC and the MAS had created three small areas within larger hayfields and delayed the first cut until at least July 15. These cut-later sanctuaries contained, in total, only nine acres and represented only four percent of the total hayfield acreage in town. These small sanctuaries, however, accounted for about seventy percent of the Bobolink breeding territories that likely produced at least some young. That is, the nine acres of Bobolink sanctuaries contained seventeen territories that were not destroyed by haycropping. But the other 210 acres of unprotected public and private hayfields in town produced young from only eight male territories or parts of territories.

Relying on such small cut-later areas, however, imposes a variety of survival penalties. For example, per-acre density of breeding territories is said to be greater on much larger fields (Bollinger 1988). Small cut-later areas concentrate predators. Some bachelor birds and refugee Bobolinks from mowed fields probably come to the small cut-later areas and compete for limited resources. And small areas may not include the variety of mini- habitats that may be needed within a breeding field to meet a variety of food, shelter, and weather conditions. Finally, since the cut-later area is often at the edge of a larger field, it is disproportionately more accessible to field-edge predators. In these ways, their smallness could make successful breeding harder.

Thus, the small cut-later areas, though important, are a compromise. For a declining species, conservation owners should not conclude that such postage-stamp-size sanctuaries are equivalent to adequate protection. (In Lincoln, for example, cuts were delayed on only six percent of LCC hayfields and on only nine percent of MAS hayfields.) The combination of the Bobolink's fatal attraction to active hayfields and the resulting high mortality of its young due to haycropping creates a situation in which the preferred habitat may be a reproductive sink. Even with the comparative success of the above sanctuaries, the overall townwide loss of young due to haycropping was about fifty-seven

percent (based on the loss of young from about thirty-two of fifty-seven breeding territories). And of course this is from a population of parents depleted by loss of habitat and persistent early cutting. Additional strategies to manage hayfields for conservation could include more and larger cut-later areas (e.g., Amherst's one hundred twenty acres) (Westover 1994), choice of later-maturing hay species, choice of appropriate markets (e.g., fodder for horses and sheep ), use of no- till reseeding drills, scheduling of fertilizing to avoid crushing nests (and affecting the brooding female?), reclamation of nonagricultural fields, and wildlife protection plans. The conservation ideal for me would be a mosaic of fields, cut or burned on different rotations to provide habitats for a variety of animals and plants.

**Extensive Late Summer Use of Protected Fields.** During the late summer I continued to monitor three cut-later areas in 1993 and four in 1994, for a total of seven "field seasons." (A field season represents the experience of one field during one breeding season.) At one field in both years and at another field in 1993, activity appeared to drop sharply in mid-July, and the Bobolinks probably left. The former field was the smallest of the cut-later areas, less than two acres, and the latter was the three-acre area at the MAS Drumlin Farm, which had been the most parched by the 1993 drought.

On the other hand, Bobolinks made extensive use of the majority of the cut-later areas (Drumlin Farm in 1994, Carlisle in both years, and Farm Meadow, studied only in 1994) until early August, with one area active until September. Although the Bobolinks could be stubbornly inconspicuous, these July and August breeding areas had a changing mix of incubating and feeding birds, nestlings, fledglings, protective and tutoring parents, bachelor or refugee adults, and molting birds of all genders and ages.

In 1994 the three-acre cut-later area at Drumlin Farm had an average of thirty Bobolinks daily throughout the last two weeks of July and into the first week of August. During the month of July I observed parental insect-carrying on ten days, with the latest date July 24. Fecal sac carrying was observed on July 10. Bold and protective behavior, generally by adults protecting a consistent area, was seen as late as July 29. Recently fledged birds were seen as late as July 27. Protective behavior by adult male(s) still in full breeding plumage was noted as late as July 27 and 29. The most vivid example of this protective behavior occurred at dusk on July 27, 1994, when I flushed thirty-six Bobolinks from an apparently empty field. A male in breeding plumage interposed himself (with agitated behavior and "chucking") between me and a probable family group, consisting of a female (with insect) and three begging young birds and evidence of more in the grass. The goldenrod clump ten feet behind this family group was festooned with a dozen older fledglings molting into first winter plumage.

The ragged, late-cut old field in Carlisle, which was about seventeen acres,

was active throughout July and into August in both 1993 and 1994. For example, about July 6, I observed a female's behavior that indicated that a late nest had hatched and, because she was distinctively marked, I could follow her energetic parenting (without assistance, by the way, from her likely mate, which gave his allegiance to another active nest site). On July 16, at least some of her young appeared to have fledged as she was also protecting and feeding birds in the grass a short distance away from the nest site. On July 18, she and her family were at the other end of the field, 300 yards from her nest site, although the youngest observed fledgling was very awkward and short-tailed. On July 21, four fledglings were staying close (i.e., often three to a weed) to the female. They retained an affinity for their nest area though they moved around the field in a loose group, the cautious female keeping them at least sixty yards from the observer's scope. Also in 1993, other first flight activities were observed at least as late as July 21, and another family group was apparently very dependent on the care of the female into the first week of August. In 1994 the field had more birds and later dates, but the situation was comparable. In July 1994 it held a flock of eleven to forty Bobolinks, often hidden away in an obscure corner or on a reverse slope. Two of the females were still "on station" and protective in the fourth week of July. The August field had a flock of twenty, including a begging bob-tail juvenile and family groups, in declining numbers through August 14.

Farm Meadow's cut-later area of five acres had a daily average of forty-nine Bobolinks throughout all of August. From observation and identification of known individuals, these birds, except for an occasional visiting flock, were generally the field's resident flock. I observed typical recent fledglings on eight days of August and as late as August 15. Also, I observed late males in full breeding plumage (or with minor changes) protecting young birds as late as August 3, or paired with fledglings as late as August 11. Such males may be a useful and conspicuous indicator of continuing fledgling dependence at the end of the season. Belated broods of young birds are known to delay the molt of their parents far beyond the usual limits (Dwight 1900). The Bobolink flock departed abruptly about September 1, leaving one to three birds, which were regularly in the field through September 28.

These home-field mixed flocks could be "glued to the ground," even when joggers, mountain bikes, or farm trucks passed close by. It could take forty minutes even to know there were Bobolinks in a field. These late-summer birds often tucked themselves onto a reverse slope or dribble-flushed into a field's far corner. And any time from late June to early September, some male Bobolinks (for example) were in molt some of these were flight-impaired and were particularly secretive.

The longer than expected breeding activity and home-field use posed both a conservation challenge and a research puzzle. Although the Massachusetts Breeding Bird Atlas (unpublished) notes fledglings as late as mid-July, I found

only two references to late-July fledging in Massachusetts Bagg and Eliot (1937) note a nest with eggs in mid-July, and Thoreau in his Journal of July 26, 1853, reports from Concord that "I see the young [Bobolinks], just able to get out of my way above the weeds and bushes of the low grounds, their tails not grown out to steady them." Outside Massachusetts, I found a report of an August 5, 1927, fledgling in Ohio (Trautman 1940). Because this late-season activity has implications for management strategies, I compared the Lincoln experience with research elsewhere.

**Comparison of Lincoln Data with Other Data.** Excellent data from Oregon and New York include a great deal of information on the Bobolink breeding cycle. The observed Lincoln dates can be compared with this research to suggest the rate and duration of local breeding, help explain the patterns of late July and August occupancy, and help develop appropriate "safe-cut" dates. I have chosen to plot these data using as the index the earliest date of hatch or fledge during the Oregon or New York study period, and to match that to the corresponding date of the earliest hatch or fledge in the Lincoln breeding cycle. This method of display is most consistent with this study's objectives of testing a monitoring system that is useable by local conservation observers elsewhere. The land manager usually will not have the resources to monitor the fields every year but can monitor for a few years and identify the earliest hatch to use as an index.

The data showed two patterns. The first pattern, which was similar to that found in the minority of Lincoln fields, was found on an Oregon National

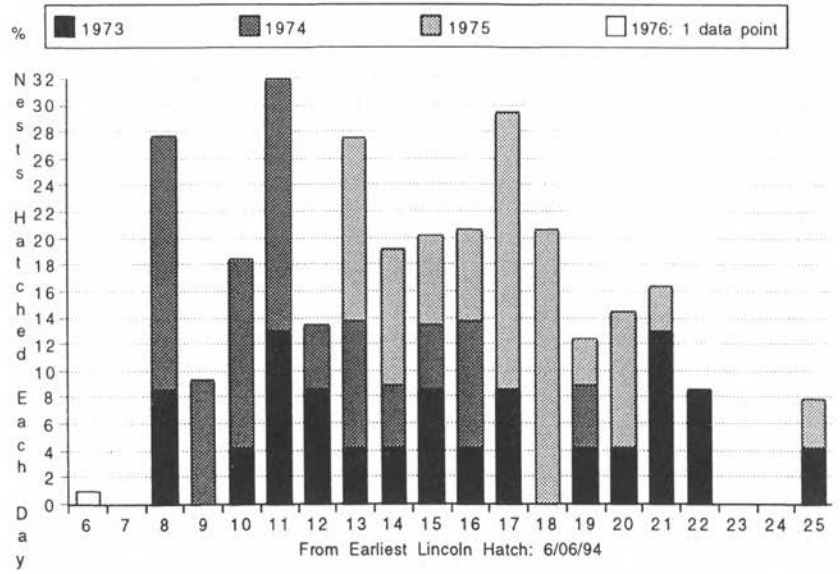



**Figure 1. % Oregon Hatching '73-'76, by Day, using Lincoln Hatch**

Wildlife Refuge on which hay was cropped in late summer (Wittenberger 1978). Although the entire refuge was censused each year, intensive work occurred on a seventy-three-acre portion, where individuals were identified by either leg-banding or physical or behavioral traits, all nests were found, and more than five hundred nestlings were monitored.

Figure 1 displays three years (and the start of a fourth year) of the Oregon hatches and adjusts the earliest hatch date to correspond to the date of the earliest Lincoln hatch. The data, displayed for each day, are expressed as a percentage of that year's hatches. In other words, Figure 1 shows what three years of the Oregon hatch would have looked like in rate and duration if it had occurred in Lincoln (given the caveats discussed earlier). Understanding both the rate and the duration of the breeding cycle is important because the danger in some customary "safe-cut" dates is that they may be based on the conspicuous first rush of birds and thus may save only the first of the year's young birds. Figure 1 shows an average annual hatch duration of fifteen days. In large part due to the delayed nesting of the secondary females (i.e., the second mates of polygynous males), an average of twenty-nine percent of the hatches occurred during the last week of the hatch. The hatch periods shown in Figure 1 would have ended, in Lincoln, between June 19 and 25, with about ninety-five percent of the hatch completed between June 16 and June 22. Thus, assuming approximately eleven days from hatch to fledge, we could predict that about ninety-five percent of the Lincoln birds would have fledged by about June 27, July 2, or July 3. This pattern of fledge was, in general, consistent with the behavior observed in the minority of cut-later Lincoln fields discussed earlier, i.e., those in which Bobolink activity appeared to drop sharply in mid-July.

An extended pattern of the breeding cycle, however, is seen in upstate New York data, which were collected in areas where there were both haycropping during the nesting season and renesting of those birds whose first nests had failed before fledging (Bollinger 1988; Bollinger and Gavin 1989). Besides gathering information on 300 hayfields, the researchers intensively monitored nine locations over three years, banded or color-marked ninety percent of the adults, and monitored all or nearly all nests, from which 752 birds fledged.

Figure 2 displays three years of the New York fledge and, like Figure 1, adjusts the earliest fledge to correspond to the date of earliest Lincoln fledge. The data, displayed for every two days, are expressed as a percentage of that year's fledges. In other words, Figure 2 shows what three years of the New York fledge would have looked like in rate and duration if it had occurred in Lincoln (given the caveats discussed earlier). The important conservation data in Figure 2 (and the difference from Figure 1) are in the prominent right slope of the data. They suggest that the birds that would fledge in Lincoln on or after June 30 represented a large portion (about thirty percent) of the year's fledglings. Furthermore, Bollinger et al. (1990) found renesters to be common in unmowed

sections of partially mowed fields, and based on the dates Bollinger and coworkers suggest, renesters in Figure 2 would be responsible for about fifteen percent of the year's fledglings. Using the New York data, the last predicted Lincoln fledge dates would be July 24-25.

The principal difference between the New York pattern (with renesters) and the Oregon pattern (without renesters) is that the New York fledge lasted almost forty days in each of the three years. It was thus more than twice as long as Oregon's hatch and ended in late July. This New York pattern of Figure 2 is consistent with my observations of the majority of Lincoln's cut-later fields, i.e., those that were active throughout July and into early or mid- August. This suggests that renesting birds can be a cause of late summer activity in Lincoln s fields, an activity that might keep the remainder of the flock longer in its home field. Such renesting could be due not only to nearby haycropping but also to other pre- fledging nest destruction, such as recreational activities or predation on these small suburban fields. One Lincoln five-acre sanctuary was active later than the New York data would directly support, but fourteen acres of that field (Farm Meadow) were cut on July 3. This may have been not only early enough to destroy some nests before the young birds fledged (thereby inducing the adults to renest) but also late enough so that those renesters fledged young in August, thus keeping the field active throughout the month.

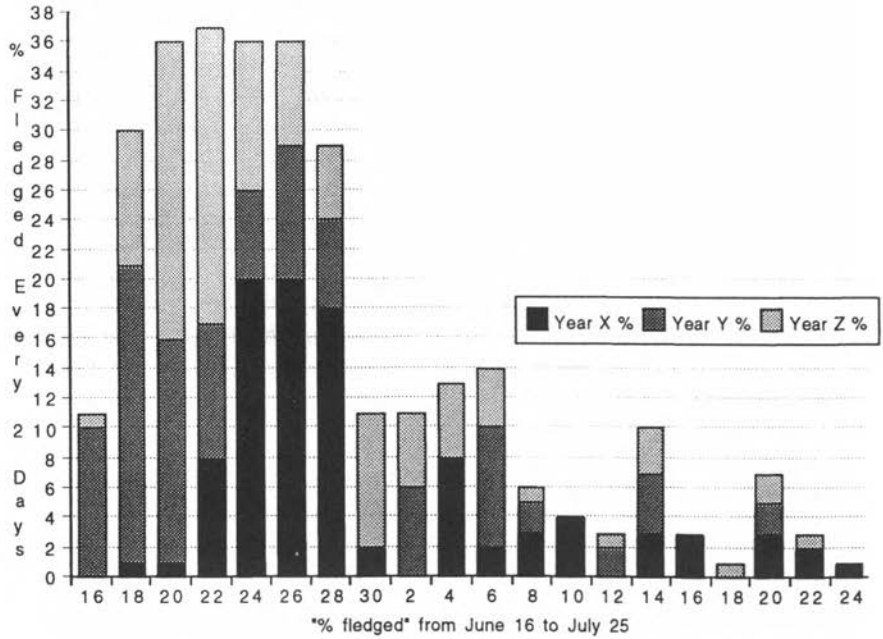



**Figure 2. New York Fledge Curve with Lincoln Fledge-date**

**The Safe-cut Date.** On active hayfields, an appropriate safe-cut date is the most important strategy for Bobolink protection, but what is that date? Unfortunately, the literature does not tell when a young bird s survival is no longer endangered by cutting its breeding field. Research is little help on this issue—papers simply note that many fledglings die, and do so invisibly and unrecorded. In one group of fledglings in Oregon, half died during the first week after leaving the nest (Wittenberger 1978), and others note the hazard the young fledgling faces (Bollinger et al. 1990). Bollinger and Gavin (1989) recommend "Cutting should occur after mid-July (and preferably in August) to avoid nest mortality." But this recommendation protects only against nest mortality the direct killing of the birds in the nest.

In practice, it has often come down to a pseudo-standard of "Well, they seem to be flying, so it's probably OK." Even if one assumes that the observers have not missed the later nesters, this approach does not fully appreciate the complex development that is underway. Alexander Skutch (1976) notes that the life of a young bird during the short weeks after the fledge is a continuous lesson—the parents must teach them what to eat, when to hide, what to fear, and even what not to fear. It is then, he says, that the young get the "training that will help them confront the complexities and perils of the wider world they will soon enter." Thus, such a plausible clue as whether some young can fly represents only the start of a phase of intensive education it is not an assurance that the young can readily survive without their home field advantage.

Some reasonable estimates, however, of the effect of the timing of haycropping on Bobolink populations can be made. As discussed earlier, haycropping in the first week of July would find many young birds still in the nest or within a week of fledging and would likely kill most of them. In the minority of Lincoln's cut- later fields, Bobolinks left by mid-July, which is consistent with the Oregon pattern. On the other hand, in the majority of Lincoln's cut-later areas, recently fledged young were evident in the last week of July or, in one case, as late as mid-August. The New York data also showed that although approximately seventy percent of the year's fledglings fledged in the first two weeks of the season, the remaining thirty percent fledged during the next three to four weeks of the season. Extrapolating the New York data to Lincoln, thirty percent of the year's fledglings in Lincoln would be predicted to fledge during the month of July. A cut date during the last week of July would probably result in the loss of a small percentage of these young, but a cut date of July 15 would likely result in the loss of about half of these later fledglings.

The best approach may be to let the Bobolinks set their own safe-cut date and protect the home field until Bobolinks have naturally dispersed. There may not be a single dispersal date, however, that holds true for all fields or even for a specific field in another year. The date on which the Bobolinks leave a field may vary depending on several factors—delays in nesting, the availability of food,

shelter and mini-habitats within the field, the extent and timing of nearby haycropping, the availability of alternative habitat, the size of the field or its Bobolink population, the level of disturbance or nest destruction, the presence of renesting birds, etc. Some of these variables may be weather-dependent and some may be field-specific. Although some fields may empty early, it is also likely that there are late years, late fields, and late nesters.

My experience in Lincoln and Carlisle suggests that the birds may often leave their home field, if it remains uncut, later than is assumed. Because it is unlikely that most fields can be practically or accurately monitored each year, this suggests the selection of a conservative safe-cut date of at least mid-August to protect all of the late fledglings. Although there may be compelling reasons that lead a conservation owner to decide to cut earlier than mid-August, the burden should be on that owner to monitor these fields, to minimize the cut, and to set aside additional cut-later acreage to replace the birds that may be sacrificed by an early cutting date.

## Conclusion

The local conservation commission and others responded positively to this survey of Bobolink mortality, the MAS Grasslands Bird Project, and the fortuitous appearances of endangered grassland species. The LCC was alerted in 1993 by a territorial display, next to a cut-later hayfield, of a state-endangered Sedge Wren *(Cistothorus platensis)* and by a discouraging first-year report on Bobolink mortality. The local newspaper became interested. With the grudging acquiescence of its farmer-lessees, the LCC issued a new and thoughtful farming policy for its land, which called for wildlife inventories, the protection of biodiversity, and annual reviews of the farmer-lessees' plans. Of benefit to the Bobolink, it said that "[a] species of concern, or one which is not considered endangered but has experienced a reduction in population, should be given careful consideration to encourage its proliferation." Then, the LCC created a new five-acre cut-later sanctuary. This was a great success a pair of state-endangered Henslow's Sparrows *(Ammodramus henslowii)* hatched young there about August 11, their first known nesting in the state in twenty years. As described elsewhere in this issue, the LCC and MAS ran both an educational program and warden patrols for the 600-1000 visiting birders and townspeople. Competition remained high, however, from other public uses, such as a recreation complex, to use this conservation field.

Elsewhere in town, although Drumlin Farm's farming and educational activities in 1994 eroded its already-small Bobolink sanctuary, the MAS did buy more expensive open land nearby. Also, as if they sensed a welcome, the first pair of Eastern Meadowlarks *(Sturnella magna)* to nest in town in a decade showed up on a private hayfield under a LCC conservation restriction. The farmer (whose family has farmed the land since the 1600s) readily agreed to

protect the nest. And the Massachusetts Port Authority (Hanscom) agreed with the author to delay future cutting of an outside-the-fence hayfield, where Bobolinks and meadowlarks have regularly attempted to nest. Finally, statewide support was given by the Massachusetts Association of Conservation Commissions, which published a summary of this research for all 351 commissions across the state.

Thus, the commitment and good will of this conservation commission and others contributed to the protection of Bobolinks and other wildlife in this town. These actions alone, however, are probably not enough, in view of the pressures on the wildlife. Aldo Leopold (1945) described a similar dilemma when he contrasted two alternative futures for the farm. The first was "The farm is a food-factory and the criterion of its success is saleable products." The second was "The farm is a place to live. The criterion of success is a harmonious balance between plants, animals, and people." With technical help and encouragement, local conservation organizations could do more to protect wildlife.

## References


Bagg, A.C. and S.A. Eliot. 1937. *Birds of the Connecticut Valley in Massachusetts.* Northampton, MA.

Bailey, W. 1955. *Birds in Massachusetts.* South Lancaster, MA: College Press.

Bent, A.C. 1958. *Life Histories of North American Blackbirds, Orioles, and Tanagers, and Allies.* Washington, DC: U.S. National Museum Bulletin 211.

Birch, S.S. 1994. Bobolink Census 1994, Daniel Webster Wildlife Sanctuary, Massachusetts Audubon Society, Lincoln, MA.

Bollinger, E.K., P.B. Bollinger, and T.A.Gavin. 1990. Effects of Hay-cropping on Eastern Populations of the Bobolink, *Wildlife Society Bulletin* 18:142-150.

Bollinger, E.K., and T.A. Gavin. 1989. Eastern Bobolink Populations: Ecology and Conservation in an Agricultural Landscape. Pages 497-506 in J.M. Hagan III and D.W. Johnston, (eds.). *Ecology and Conservation of Neotropical Migrant Landbirds.* Washington, DC: Smithsonian Institution Press.

Bollinger, E.K. 1988. *Breeding Dispersal and Reproductive Success of Bobolinks in an Agricultural Landscape.* Doctoral thesis, Cornell University, Ithaca, New York.

Brewster, W. 1906. *Birds of the Cambridge Region.* Cambridge MA: Nuttall Ornithological Club.

Butcher, G. 1993. In Gallagher, T. Can Birds Co-Exist with Agriculture? *Birdscope* 7:2 (Cornell Laboratory of Ornithology).

Choiniere, J. 1993-1994. Personal communication. Wachusett Meadow Sanctuary, Massachusetts Audubon Society.

Drinkwater, D. 1988. *An Experimental Study of Territory Selection in Male Bobolinks.* Honors thesis. University of Massachusetts, Boston, MA.

Dwight, J., Jr. 1900. The Sequence of Plumages and Moults of the Passerine Birds of New York. *Annals New York Academy of Science* 13:73-360.

Forbush, E.H. 1927. *Birds of Massachusetts and Other New England States.* Volume 2: "Land Birds from Bob-White to Grackles." Norwood MA: Norwood Press.

Kingsbury, E.W. 1933. *The Status and Natural History of the Bobolink* Dolichonyx Oryzivorus (Linnaeus). Dissertation, Cornell University, Ithaca, New York.

Herkert, J.R. 1991. *An Ecological Study of the Breeding Birds of Grassland Habitats within Illinois.* Doctoral thesis, University of Illinois, Urbana-Champaign (not read, cited in Vickery, P., M.L. Hunter, Jr., and S.M. Melvin. 1993. *Effect of Habitat Area on the Distribution and Abundance of Grassland Birds*, Doctoral thesis, University of Maine, Orono, Maine.)

Leopold, A. 1945. Transactions of the North American Wildlife Conference 10:165-168 (citation from Burger, G.V. 1978. Agriculture and Wildlife, in H.P. Brokaw (ed.), *Wildlife and America.* Washington DC: The President's Council on Environmental Quality.)

Line, L. 1994. A Summer Without Bobolinks. *Wildlife Conservation*, July/August: 35-43.

Lowe, J. 1994. Personal Communication (transmittal of record cards). North American Nest Record Program, Cornell Lab of Ornithology, Ithaca, New York.

*Massachusetts Breeding Bird Atlas* (unpublished), Bobolink section by Stokes, D.W., and L.Q. Stokes.

Patterson, N. 1994. Personal communication. Wayland, Massachusetts, Conservation Commission.

Rodenhouse, N.J., L.B. Best, R.J. O'Connor, and E.K. Bollinger. 1992. Effects of Temperate Agriculture on Neotropical Migrant Landbirds. In *Status and Management of Neotropical Migrant Birds*. Fort Collins CO: Rocky Mountain Forest and Range Experiment Station USFS.

Skutch, A.F. 1976. *Parent Birds and their Young*. Austin, TX: University of Texas Press.

Stokes, D.W., and L.Q. Stokes. 1989. *A Guide to Bird Behavior*, Volume 3. Boston: Little, Brown and Company.

Townsend, C.W. 1920. *Supplement to Birds of Essex County*. Cambridge, MA: Nuttall Ornithological Club.

Trautman, M.B. 1940. *The Birds of Buckeye Lake, Ohio*. Ann Arbor: University of Michigan Press.

Veit, R.R., and W.R. Petersen. 1993. *Birds of Massachusetts*. Lincoln MA: Massachusetts Audubon Society.

Westover, P. 1994. *Managing Conservation Land: The Stewardship of Conservation Areas, Wildlife Sanctuaries, and Open Space in Massachusetts*. Belmont, MA: Massachusetts Society of Municipal Conservation Professionals.

Wetherbee, D.K. 1945. *The Birds and Mammals of Worcester County, Massachusetts*. Worcester MA: Century Press.

Wittenberger, J.F. 1978. The Breeding Biology of an Isolated Bobolink Population in Oregon. *Condor* 80:355-371.

**STEPHEN F. ELLS** is a student and writer of birding and environmental issues. He is a member of the Nuttall Ornithological Club and was chairman of the Conservation Law Foundation and the U.S. Environmental Protection Agency's Director of Environmental Review. He has been a director of the Massachusetts Association of Conservation Commissions, Deputy Commissioner of the Massachusetts Department of Natural Resources, and chief legal counsel to Governor Francis W. Sargent. He wrote *The Law of Open Space*, a book on land use and conservation laws. He has been a life member of the Massachusetts Audubon Society for forty-eight years. He is a graduate of Harvard College and Law School, has three fine sons, and lives in Lincoln.

## Breeding Henslow's Sparrows in Lincoln, Massachusetts, 1994

The Henslow's Sparrow in Massachusetts is now a rare or very rare, erratic, and local breeder near the edge of its historic range. In the past it arrived in the state about May 6, although in 1983 it was observed on April 30. Its most recent breeding records were two pairs in Leicester at the Worcester Airport in 1973 and 1974. Other suggestions of breeding were four males that were singing in West Newbury from May 18 to August 10, 1974, and four males singing in Windsor in August and early September 1983. The sparrow probably leaves its breeding grounds in late September and October (with three winter records).

In 1994 I spent time in Lincoln's hayfields, studying Bobolinks. One of those fields was the seventeen-acre Farm Meadow, a high-quality hayfield under the control of the town's Conservation Commission. In 1994 the Commission had for the first time set aside a five-acre portion of the field as a "cut-later" sanctuary to protect the Bobolink young. The cut was to be delayed until at least July 15.

Farm Meadow is a predominantly level hayfield with one gentle knoll, but it contains a variety of mini-habitats. Bordered by woods and a small marsh, its principal grasses are a typical hayfield mix of orchard grass (*Dactylis glomerata*) and timothy, with a small amount of Kentucky bluegrass. By mid-June the grass was generally between five and six feet in height, but soon these early grasses started to dry, stiffen, and shrink. As the hayfield quickly lost its uniformity, an understory of alfalfa, clover, and vetch appeared. The wind and the deer then matted the grass, swirled patches in it, and opened lanes through which birds could fly unobserved. Later, some milkweed, dock, and other weed stalks appeared.

I monitored Farm Meadow nearly every day in 1994 from early May until the field was cut. On June 28, 1994, I heard, coming from deep in the hay, a song that I knew I did not know and had not heard in that field before. I had heard, however, a Henslow's Sparrow before once and long ago with Allen Morgan in 1945. I had filed its emphatic, *tiz-lik* repetitive song away in my head. As I tried to identify this new song, I considered the possibility of a Henslow's but dismissed the thought. Although abrupt and raspy, this 1994 Lincoln bird's song had more syllables than the two-beat Henslow's song of my memory, some field guides, and the Peterson bird tape. The song varied in pattern and volume, e.g., *tzi tzi chick* or *tszi tsbzzzi lik* or *te-tse t-lik*; also, it was not repetitive—one could wait an hour to hear a single song, then hear between one and six single songs over the next ten minutes, and then nothing until one's patience ran out.

In the days to follow, while making other observations from the field edge, I listened for the song and tried with remarkably little success to glimpse the singer. The call came erratically from a six-acre portion of the field, and occasionally the call followed me as I walked slowly around the field. After the farmer-lessee cut most of the hayfield on July 3, the bird continued its infrequent calls from the cut-later Bobolink sanctuary. (On July 7, from the area where the bird was calling, there was a single, very different, strong sparrow song, almost finch-like, which was very puzzling and not heard again. Perhaps this was the Henslow's rarely-heard mating song, which is mentioned in Bent's *Life Histories*.)

On July 10 I saw in Forbush's *Birds of Massachusetts* that the Henslow's Sparrow did have a song that resembled the more complex song I was hearing. (Both Bent's *Life Histories* and the sonogram in Chandler Robbins' field guide suggested the multiple beats that are hidden even in the sparrow's regular song.) That afternoon, the still-invisible sparrow, as if it knew the game were almost up, erupted with thirty-two of its typical *tsi-lik* songs, every six to ten seconds for four minutes straight. The next morning, energized but still disbelieving, I played Peterson's faint Henslow's tape on a tape recorder, but I got no response. The hidden bird did sing sporadically from afar. I then borrowed a more powerful recorder, and that afternoon a surprised Henslow's Sparrow perched in full view for the first time and challenged my machine with repeated song. I called Boots Garrett to be my witness and held up a camera (with ASA 1600 color print film) to my binoculars and scope for some confirmation photos.

When Wayne Petersen and Simon Perkins of the Massachusetts Audubon Society (MAS) and others arrived the next morning, a second Henslow's Sparrow appeared, delighting us with the possibility of breeding in a field much smaller than the seventy-five-plus acres thought to be optimal for Henslow's Sparrows. The male perched on a weed, threw its head back, and announced its wretched song every six to ten seconds for minutes on end.

At full volume these repeated, emphatic vocalizations were more than once clearly audible at a surprising 270 yards away. The typical song was a quick, thin, dry, run-together, raspy, cricket-like gargle "tsi-lik." I eventually grew quite fond of this effort. The presumed female would periodically appear when the male was perched up and singing, or would fly in tandem with or loosely accompany the male. No counter-singing was heard, and no aggressive behavior between the two birds was seen.

Over a celebration breakfast with Wayne, Simon, Gwyn Loud, and Paul Miliotis, we talked about what was next. Although most had an impulse to keep the event a secret to protect the possibility of breeding, we feared that was unrealistic—it was too rare a bird to be unrevealed for long. Wayne also pointed out that there would rarely be a better opportunity to have controlled access to a quality bird with an environmental message—the hayfield was on handsome

conservation land, away from houses, and only a 200-yard walk from a commuter-rail parking lot. He suggested that the bird should be protected not by secrecy but by education and guidance. We asked Geoff McGeon, the town's conservation administrator, to join us at breakfast. Before the next cup of coffee was done, a strategy was on a napkin—get the cooperation of the farmer-lessee, stop all further cutting, stake a trail through the cut field to an observation area, post the uncut part of the field and most of its periphery, ban further tape playing, touch base with other town officials and the Natural Heritage Program, make educational signs and handouts to distribute at the trail head, schedule the town conservation wardens to be available periodically for education and guidance, and postpone the announcement on the Voice of Audubon until all was in place the following weekend.

Between 600-1000 well-behaved birders and townspeople eventually enjoyed this bird, for the male continued to sing and appear throughout July. If there were to be a "next time," however, I hope the community could be more included and involved. The Commission was concerned that general publicity might attract vandals. I respect that caution but still wonder whether we should have done more to build public support for birding and for conservation—though this bird was not very charismatic.

On July 24, during a forty-minute burst of activity, observers saw the birds making eight or ten flights to a particular spot in the grass an eye-squinting eighty-five yards away. On three of those flights the sparrows carried long stems of grass, probably for nest-building. The second bird (the presumed female) was last seen on July 30, which was, based on the date of observed nest-building, the estimated start of incubation. The male remained near the presumed nest site and sang regularly but often very faintly until August 7. After August 7 there was a gap in visible activity until August 11-15, dates that correspond to the anticipated date of the hatch. Short flights with light objects to and from the nest area were distant, easy to miss, and often did not occur more than once or twice within an hour. After a last report of two distant flights on August 20, which was the anticipated date of fledging, the Henslow's Sparrows dropped out of sight and hearing until the evening of September 6, when I heard two unmistakable songs, five minutes apart, sounding again like the songs of late June.

After that, there were only occasional cryptic hop-flights of possible-probable birds, one report of a stationary bird on September 12 (the first visual identification since August 3), and very faint, possible vocalizations, which were frustratingly indistinguishable from insect noises. Other migrating sparrow species then flooded into the field, and hawks patrolled overhead. The five-acre sanctuary was cut about Columbus Day.

Stephen F. Ells, Lincoln, MA

## BOOK REVIEW: *Eastern Birds: A Guide to Field Identification of North American Species*

by Brian Cassie

*Eastern Birds: A Guide to Field Identification of North American Species* written and illustrated by James Coe, Golden Press, New York, NY. 160 pages, 81 color plates, paperback $12.50.

I suppose I have been asked hundreds of times to recommend the best book for beginning birdwatchers. Unhesitatingly, I have recommended Roger Tory Peterson's *A Field Guide to the Birds*, which illustrates all of the birds of eastern North America and has a straightforward text and very good maps. The continent-wide field guides, such as the National Geographic guide, are great, but they can be overwhelming for the casual or novice birdwatcher. When you started out, were you interested in subspecies of Merlins, Common Nighthawks, and White-crowned Sparrows, or were you merely delighted to discover that these birds actually existed and that you could find their pictures in your bird guide? If you go on three bird walks a year, and they are all in Mount Auburn Cemetery in May, do you really need a lineup of Aleutian vagrants in your field guide? Of course not. What beginners need is a field guide that can help them identify the birds they are actually going to run across when they are out there by themselves, not chasing down juvenile stints in Newburyport harbor but rather sorting through that little group of kinglets and nuthatches along the Charles River in Waltham.

Peterson's guide was never truly the answer for beginners, because it does include rarities, strays, and pelagic species more likely to confuse than enlighten the hordes of casual birdwatchers we have in the East. What they have needed is a well-illustrated, well-written compact field guide to the commoner eastern birds. I am delighted to have such a guide now at hand.

James Coe's *Eastern Birds* is a tour-de-force, a positively brilliant guide. In 160 pages the author/illustrator has presented 300 of the most familiar birds east of the Rocky Mountains. The book begins with an introduction to the guide itself and to the basics of birdwatching. Following this are ten pages of habitat plates, showing characteristic birds of saltwater bays and the ocean; ponds, lakes, and marshes; coastal beaches and salt marshes; roadsides; and backyards, as well as soaring birds, all depicted in typical habitats. This is a long overdue addition to field guides and should be incorporated into all guides for all animals and plants, whether for beginner or seasoned observers. Four pages of "confusing songbirds" plates precede the main section of the book, which comprises 128 pages, with color plates on the right-hand pages and text and maps on the left-hand facing pages.

The first measure of a field guide is its illustrations. James Coe has

developed into an extraordinarily fine illustrator, and the paintings in this guide are an inspiration. I especially like the use of natural backgrounds in the plates. This is another convention that is typically overlooked by field guide illustrators but which adds immeasurably to the enjoyment of the plates.

Coe's text opposite the main section of color plates includes brief introductions to bird groups (e.g., shorebirds, vireos, tanagers) and three-to eight-sentence paragraphs about the illustrated species, with pertinent information on identification, habitat, status, and vocalizations making up most of the commentary.

Maps are an important element of a successful field guide, with the ability to convey a good deal of critical information in a rather small space. The maps in *Eastern Birds* depict winter, summer, and permanent ranges, as well as migratory routes, in the familiar three-color layouts. Nonetheless if there is a shortcoming with this guide, it would have to be the maps. First, there are not enough of them. Where are the maps for the Eastern Screech-Owl, Great Horned Owl, Eastern Kingbird, Blue Jay, and American Crow? Second, there is a tendency to portray the winter ranges of many species a bit too far to the north, as in several ducks and blackbirds. Third, there are a few blatantly obvious errors on the maps, such as the winter range of the Northern Flicker and the unattributed map on the bottom of Page 100. Better attention to map details will make the next edition of this field guide all the more worthwhile.

When I visited India several years ago, I was a beginner on the Indian bird scene. Everything was new. Among the bird guides I had packed was a slim paperback entitled *Collins Handguide to the Birds of the Indian Sub-Continent*, written and illustrated by Martin Woodcock. This was a great little guide that fit easily in my pocket and depicted characteristic birds in a variety of habitats. I carried it everywhere. I have often thought that the Woodcock guide could serve as a model for introductory guides in other areas of the world. I can now say the same for the Coe book. It is the same size as the Indian guide (half as thick as Peterson's) and the perfect introduction to the subject. When the time comes to recommend a guide for those starting out in the wild world of birdwatching, you can now do no better than this.

**BRIAN CASSIE** is an avid birder, an interest that has taken him far and wide throughout the world on his own and as a trip leader. He is currently president of the Nuttall Ornithological Club. Brian is also a butterfly enthusiast and is Coordinator of the Massachusetts Butterfly Atlas project, sponsored by the Massachusetts Audubon Society.

# BIRD SIGHTINGS NOV. / DEC. 1994 SUMMARY

by Richard A. Forster, Marjorie W. Rines, and Robert H. Stymeist

November and December were very mild and unseasonably sunny. It was the 5th warmest November and the 11th warmest December in 124 years of records. The high was 79° on November 5, and the low mark was 13° on December 30. The season's first frost did not come until November 23, setting a new annual record for Boston of 247 days above freezing. Inland suburbs had earlier frosts. Rainfall totaled 9.68 inches for both months, 1.47 inches above normal. The most rain in any storm was 2.28 inches on November 22-24. The season's first snowfall came on November 23, but it quickly melted. The total snowfall for both months at Boston was 1.6 inches, 7.2 inches less than average. A storm on December 23-24 brought a peak gust of 56 mph from the northeast. Stronger gusts were noted in eastern Massachusetts, with a peak gust of 76 mph noted in the Blue Hills in Milton. Birders lucky enough to get out on Christmas morning were treated to several surprises along the coast. R. H. S.

## LOONS THROUGH WOODPECKERS

This reporting period featured some outstanding rarities and numerous unseasonal records. There were no significant coastal storms in November, not even a day when winds averaged from the northeast. A major storm on Christmas Eve day brought numerous observers to coastal vantage points and only meager results. However, Christmas morning proved quite productive for the fortunate few observers who ventured out.

Common Loons were reported in very good concentrations from Nantucket Sound and the Vineyard. On the annual lakes and ponds survey conducted by the Cape Cod Bird Club, the count of Pied-billed Grebes was the second highest in the 12 years of the census. An **Eared Grebe** in Wareham, although almost an annual visitor, was still a noteworthy find. Northern Fulmars were observed as a result of the storm, with a fine total of 37 at Provincetown on Christmas Day. Cory's Shearwaters held on in good numbers off Martha's Vineyard until early November. An **American White Pelican**, reported from Wareham and Orleans (probably the same individual), may have been one of two that wintered in Rhode Island the previous winter. Heron reports included only the hardier species with the usual November reports of Cattle Egret. Perhaps the bird of the season was the immature **Wood Stork** that appeared in Cotuit on November 16. When first discovered, the bird appeared in poor health but seemed to improve during its stay, which lasted into some very cold weather. This is the first confirmed report for Wood Stork since 1955 and one of fewer than ten records for the entire state.

As usual for this period waterfowl were well reported, this being the time of maximum abundance for many species. A flock of **Tundra Swans** appeared at Squibnocket Pond on Martha's Vineyard, where they are annual at this time of year. Several Greater White-fronted Geese were observed further supporting their status as a regular migrant in small numbers. Northern Shovelers were widely reported but were numerous only at South Monomoy. The Gadwall totals on Cape Cod were the highest ever recorded on the Cape Cod census. Ninety-two percent of the total was recorded in the mid-Cape towns of Barnstable, Yarmouth, and Dennis. Other duck species that were exceptionally plentiful were Ring-necked and Ruddy ducks, and Hooded Mergansers. The count of Harlequin Ducks at Gay Head is the highest total ever recorded in the state. Eurasian Wigeons were fairly well represented and included sightings of two females, which are seldom reported. For the second successive year King Eiders were scarce. Also notably scarce were both Redheads and Canvasbacks.

Fewer Ospreys lingered than usual, while at Cumberland Farms the harrier total was impressive. The handful of reports for Rough-legged Hawk clearly indicated it will not be a big winter for them. There were an inordinate number of reports for the secretive Virginia Rail, and American Coot numbers were truly spectacular. One has to wonder what caused the turnaround in coot, a species that has become increasingly

scarce for the last decade. There was little out of the ordinary among the shorebird group. Species that normally linger into November did so in limited numbers. One of the four **American Avocets** present during October lingered briefly into November. The last of the 14 Marbled Godwits present on Martha's Vineyard in early November lingered into early December.

Jaegers and a skua were welcome Christmas presents at First Encounter Beach in Eastham. Remarkably, all reports of Little Gull were from Cape Cod and the Islands, including a group of three at the unlikely location of Great Pond in Eastham. Equally unlikely was an immature Common Black-headed Gull at Quabbin Reservoir. This sighting was a first for Worcester County. A report of a possible **California Gull** at Lake Nagog in Acton prompted scores of observers to the lake in search of this rarity. Although the California Gull was not relocated, other gull species were observed, including Glaucous, Iceland and Lesser Black-backed gulls. Kittiwakes were very poorly reported, which was likely due to the lack of storms. Both Common and Forster's terns lingered in fair numbers on Cape Cod until mid-November. Only a few Dovekies were seen, mostly as a result of the December storm, when Razorbills were reported in numbers. Nonstorm alcid reports included an **Atlantic Puffin** at Rockport and good counts of Black Guillemot at Cape Ann and Boston Harbor.

Snowy Owls arrived late, with the first report from Gay Head on December 7 and only a few thereafter. There were scattered reports of Short-eared Owls, with an impressive count of nine at Cumberland Farms. The amazing presence of non-Ruby-throated Hummingbirds continued with two ***selasphorus*** types remaining at Fairhaven and Needham well into December. Another in Swansea on November 24 reportedly was identified as a **Rufous Hummingbird** from photographs. Reports of five Red-headed Woodpeckers were a good early winter total.

R. A. F.

| Date | Location | Number | Observers |
|---|---|---|---|
| **Red-throated Loon** | | | |
| 11/5 | Winthrop | 12 | M. Lynch# |
| 11/6 | Salisbury | 250 | G. d'Entremont# |
| 11/12 | Danvers Res. | 1 | R. Heil |
| 11/20 | Boston H. | 23 | TASL (S. Zendeh) |
| 11/26 | Squibnocket | 300 | G. Daniels# |
| 12/4 | P.I. | 15 | S. Perkins |
| **Common Loon** | | | |
| 11/13 | Westport | 25 | M. LaBossiere |
| 11/23 | Squibnocket | 200 | G. Daniels# |
| 11/25 | Quabbin | 6 | S. Arena |
| 12/3 | Cape Ann | 16 | J. Berry |
| 12/9 | P.I. | 12 | W. Drew# |
| 12/31 | Nant. Sound | 131 | R. Heil |
| **Pied-billed Grebe** | | | |
| 11/4 | P.I. | 13 | W. Drew# |
| 11/6, 12/11 | Pembroke | 18, 2 | W. Petersen# |
| 11/6 | Lakeville | 17 | W. Petersen# |
| 11/12 | Amesbury | 6 | R. Heil |
| 11/20 | Acushnet | 9 | G. d'Entremont |
| 11/20 | Rochester | 10 | G. d'Entremont# |
| 12/3-4 | Cape Cod | 95 | CCBC |
| **Horned Grebe** | | | |
| 11/4 | Wellfleet | 24+ | J. Sones |
| 11/5 | Winthrop | 17 | M. Pelikan |
| 11/6 | Lakeville | 28 | W. Petersen# |
| 11/18 | Marion | 6 | M. LaBossiere |
| 11/20 | Boston H. | 195 | TASL (S. Zendeh) |
| 12/9, 21 | P.I. | 19, 56 | W. Drew# |
| 12/30 | Rockport | 24 | T. Young |
| **Red-necked Grebe** | | | |
| 11/5 | Wellfleet H. | 1 | R. Heil |
| 11/6 | Lakeville | 1 | W. Petersen# |
| 11/20 | Boston H. | 11 | TASL (S. Zendeh) |
| 11/26 | N. Scituate | 31 | G. d'Entremont |
| 11/27 | Rockport | 18 | S. Perkins# |
| 11/27 | Dennis | 4 | B. Nikula |
| 11/30 | Squibnocket | 11 | G. Daniels |
| **Eared Grebe** (details submitted) | | | |
| 12/17 | Wareham | 1 | W. Petersen# |
| **Northern Fulmar** | | | |
| 12/24 | Barnstable (S.N.) | 3 | W. Petersen# |
| 12/25 | Provincetown | 37 | B. Nikula |
| 12/27 | Eastham | 1 | fide R. Prescott |
| **Cory's Shearwater** | | | |
| 11/1 | Katama | 30 | A. Keith |
| 11/6 | Wellfleet H. | 1 | J. Sones# |
| **Shearwater species** | | | |
| 12/6 | Provincetown | 1 | J. Sones |
| 12/24 | Barnstable (S.N.) | 4 | T. Cameron |
| **Northern Gannet** | | | |
| 11/5 | Rockport | 150 | BBC (J. Nove) |
| 11/10 | P.I. | 56 | K. Disney |
| 11/22 | Katama | 750+ | A. Brown# |
| 11/27 | Chatham | 500+ | B. Nikula |
| **American White Pelican** | | | |
| 11/30 | Wareham | 1 | B. Peters |
| 12/9, 10 | Orleans, Nauset | 1 | A. Dorman + v. o. |
| **Double-crested Cormorant** | | | |
| 11/12 | P.I. | 32 | M. Lynch# |
| 11/18 | Wellfleet H. | 6 | R. Heil |
| 11/20 | Boston H. | 341 | TASL (S. Zendeh) |
| 12/18 | Essex | 1 imm | G. Wood |
| 12/31 | Vineyard Haven | 1 | G. Daniels |
| **American Bittern** | | | |
| 11/1 | Arlington | 1 | M. Rines |
| 11/4 | P.I. | 2 | W. Drew# |
| 11/6 | Eastham (F.H.) | 3+ | B. Nikula |
| 11/6 | Barnstable | 8 | P. Trimble |
| 11/12 | GMNWR | 1 | E. Taylor |
| 11/13 | Westport | 1 | S. Arena# |
| 12/3 | W. Barnstable | 5 | S. Clifton# |
| 12/4 | WBWS | 1 | K. Weinheimer# |
| **Great Blue Heron** | | | |
| 11/4 | P.I. | 22 | W. Drew# |
| 11/5 | Eastham (F.H.) | 40 | J. Hoye# |
| 11/7 | S. Dartmouth | 24 | M. Boucher |
| 11/20 | Boston H. | 23 | TASL (S. Zendeh) |
| 11/23 | Saugus | 7 | J. Berry |
| 11/27 | Falmouth | 7 | M. Lynch# |
| 12/26 | Winthrop | 6 | P. + F. Vale |
| **Great Egret** | | | |
| 11/4 | P.I. | 3 | W. Drew# |

Cattle Egret
11/13 Ipswich 2 BBC (I. Giriunas)
11/16 P.I. 2 T. Young
Black-crowned Night-Heron
11/3 Boston 2 T. Aversa
11/27 Falmouth 1 M. Lynch#
12/31 Vineyard Haven 5 A.Brown
**Wood Stork**
11/16-12/11 Cotuit 1 A. Hughes + v. o.
**Tundra Swan**
12/6 Squibnocket 9 A. Fischer
Whooper Swan
11/4, 12/2 P.I. 2 W. Drew#
11/12 Ipswich 1 ad R. Heil
Mute Swan
12/3-4 Cape Cod 233 CCBC
12/10 E. Gloucester 33 M. Lynch#
Greater White-fronted Goose
11/12, 22 W. Newbury 1, 2 R. Heil
11/21 Fairhaven 2 M. Boucher
12/21 W. Newbury 2 L. Nachtrab
12/26 Newburyport 1 imm R. Heil
Snow Goose
11/3 Arlington Res. 1 C. Taylor#
11/8 Boston 50+ J. Paputseanos
11/8 S. Dart. (A.Pd) 22 LCES (J. Hill)
11/10, 12/9 P.I. 17, 15 W. Drew#
12/12 Groton 40 E. Stromsted
12/15 Sterling 1 imm R. Bradbury
12/31 Winthrop 2 R. Stymeist
11/26-12/3 Reports of 1-5 indiv. from 4 loc.
Brant
11/20 Boston H. 1454 TASL (S. Zendeh)
12/26 Quincy 500 E. Taylor
Canada Goose
thr Sherborn 600 E. Taylor
11/26 W. Newbury 1000+ J. Berry
12/2, 21 P.I. 205, 460 W. Drew#
12/3-4 Cape Cod 792 CCBC
12/18 Hamilton 1042 J. Brown#
Wood Duck
11/5 GMNWR 30 E. Taylor
11/5 Wakefield 11 P. + F. Vale
12/13 Squibnocket 3 A. Keith#
Green-winged Teal
11/3 Arlington Res. 28 M. Pelikan
11/4 P.I. 200+ J. Brown#
11/12 S. Monomoy 30 B. Nikula
11/12 GMNWR 100 E. Taylor
11/24 Wakefield 30 P. + F. Vale
12/3-4 Cape Cod 56 CCBC
12/9 P.I. 41 W. Drew#
12/27 W. Barnstable 47 T. Aversa
American Black Duck
thr P.I. 2743 max W. Drew#
11/15 S. Dart. (A.Pd) 211 LCES (J. Hill)
11/20 Boston H. 1145 TASL (S. Zendeh)
11/27 Falmouth 130 M. Lynch#
12/3-4 Cape Cod 2184 CCBC
Mallard
12/3-4 Cape Cod 1462 CCBC
Northern Pintail
11/4, 12/21 P.I. 65, 21 W. Drew#
11/8 GMNWR 12 T. Aversa
11/12 S. Monomoy 25 B. Nikula
11/27 Falmouth 2 M. Lynch#
12/11 Westport 89 LCES
12/31 Edgartown 7 J. Norton
Blue-winged Teal
11/5 GMNWR 2 E. Taylor
11/11 P.I. 3 J. Hoye#
11/16 Squibnocket 2 A. Keith#
11/24 Cotuit 1 M. Blazis
Northern Shoveler
11/5 S. Monomoy 75 H. Ferguson
11/18 E. Boston 2 T. Aversa
12/2-23 P.I. 2 v. o.
12/3-4 Cape Cod 1 CCBC
12/15-31 Worcester 1 R. Bradbury
12/31 Edgartown 3 J. Norton
thr Reports of individuals from 5 locations
Gadwall
11/12 S. Monomoy 15 B. Nikula
11/18 Ipswich 27 N. Nash
11/24 Marstons Mills 30 B. Nikula
11/25 P.I. 8 W. Drew#
11/27 Gloucester 70+ S. Arena
11/30 Wenham 6 N. Nash
12/3-4 Cape Cod 183 CCBC
12/15 Wenham 8 N. Nash
12/20 Squibnocket 10 G. Daniels
Eurasian Wigeon
thr Barnstable 1-2 v. o.
11/12 Ipswich 1 f R. Heil
11/14-12/18 Wenham 1 m N. Nash
11/18-12/31 Chatham 2 v. o.
11/20 E. Gloucester 1 B. Malcolm
11/25 Plymouth 1 f W. Petersen
12/31 Belmont 1 m R. Stymeist
American Wigeon
11/11, 12/27 Arlington 20, 10 L. Taylor
11/12 Amesbury 20 R. Heil
11/12 S. Monomoy 20 B. Nikula
11/16 M. V. 75+ A. Brown#
11/18 Ipswich 75 N. Nash
11/27 Barnstable 20+ M. Lynch#
12/1-18 Wenham 5 N. Nash
12/3-4 Cape Cod 121 CCBC
12/11 Camb. (F.P.) 32 P. Roberts
Canvasback
11/26 W. Newbury 1 f M. Argue#
12/3-4 Cape Cod 115 CCBC
12/4 Camb. (F.P.) 50 M. Pelikan
12/10 Acton 1 f M. Lynch#
12/10 E. Gloucester 1 f S. Perkins
Redhead
11/13, 12/27 M. V. 1 A. Keith#
Ring-necked Duck
thr Arlington Res. 89 max D. Arvidson
11/6 W. Newbury 570 D. Chickering
11/6 Lakeville 375+ W. Petersen#
11/12 S. Monomoy 150 W. Petersen#
11/15 Framingham 75 E. Taylor
11/19 Southboro 550 E. Taylor
12/3-4 Cape Cod 107 CCBC
12/3 Acton 50+ M. Lynch#
12/11 Brockton 46 S. Arena
Greater Scaup
11/4 P.I. 38 W. Drew#
11/6 Lakeville 200 W. Petersen#
11/20 Boston H. 95 TASL (S. Zendeh)
11/27 Falmouth 470+ M. Lynch#
12/3-4 Cape Cod 1245 CCBC
Lesser Scaup
11/6 Pembroke 16 W. Petersen#
11/6 Lakeville 30 W. Petersen#
11/12 W. Newbury 15 R. Heil
11/12 Peabody 13 R. Heil
11/24 Cotuit 35 B. Nikula#
11/27 Tisbury 200 A. Brown#
11/27 Falmouth 30+ M. Lynch#
12/3-4 Cape Cod 46 CCBC

Lesser Scaup (continued)
12/26 Quincy 10 E. Taylor
12/27 Vineyard Haven 25 A. Keith#
Common Eider
11/12 S. Monomoy 20,000 B. Nikula
11/13 Rockport (H.P.) 2129 M. Lynch#
11/20 Boston H. 5908 TASL (S. Zendeh)
11/27 Westport 175 M. Boucher
12/14 Squibnocket 2500 A. Keith
12/31 Nant. Sound 3500+ R. Heil
King Eider
11/13 Rockport (H.P.) 2 M. Lynch#
12/3 Rockport (H.P.) 1 imm R. Stymeist#
Harlequin Duck
11/8-12/31 Squibnocket 16 max v. o.
11/10-12/31 Wellfleet H. 2 v. o.
11/25 N. Scituate 12 J. Cameron#
11/25-12/31 Rockport (A.P.) 10-12 v. o.
12/11 Gay Head **80** A. Fischer
12/18 Nahant 1 P. Duffy
12/31 Woods Hole 5 T. Young
Oldsquaw
11/7 S. Dartmouth 16 M. Boucher
11/13 Rockport (H.P.) 74 M. Lynch#
11/26 Newburyport H. 400 M. Argue#
11/27 Barnstable 45+ M. Lynch#
12/24 Vineyard Haven 1500+ V. Laux
Black Scoter
11/6 Gay Head 150 G. Daniels
11/6 P.I./Salisbury 200 BBC (S. Charette)
11/9 Scussett B. 35 M. LaBossiere
11/13 Rockport (H.P.) 33 M. Lynch#
12/14 Squibnocket 75 A. Keith#
Surf Scoter
11/8 Squibnocket 250+ A. Brown#
11/12 P.I. 100 BBC (J. Center)
11/13 Rockport (H.P.) 43 M. Lynch#
11/20 Boston H. 20 TASL (S. Zendeh)
11/27 Barnstable 22 M. Lynch#
11/27 Westport 75 M. Boucher
12/31 Nant. Sound 550 R. Heil
White-winged Scoter
11/4 P.I. 495 W. Drew#
11/6 Gay Head 220 G. Daniels
11/20 Boston H. 660 TASL (S. Zendeh)
11/27 Barnstable 100+ M. Lynch#
12/31 Nant. Sound 800 R. Heil
Scoter species
11/12 S. Monomoy 10,000 B. Nikula
Common Goldeneye
thr Marlboro 11 max R. Graefe
11/6 Lakeville 18 W. Petersen#
11/20 Boston H. 325 TASL (S. Zendeh)
11/27 Falmouth 23 M. Lynch#
12/3 Cape Ann 30 J. Berry
12/3-4 Cape Cod 292 CCBC
12/31 Wachusett Res. 7 R. Bradbury
Common Goldeneye x Hooded Merganser
12/22 Eel Pd (M.V.) 1 A. Keith#
Barrow's Goldeneye
11/30 M.V. (W. Chop) 1 f A. Keith
12/4-31 Winthrop 1 m P. + F. Vale
12/12-31 Vineyard Haven 2-4 v. o.
12/17 Wareham 1 m W. Petersen#
12/31 Gloucester H. 1 m J. Brown#
Bufflehead
11/13 M.V. 175 A. Keith#
11/15 S. Dart. (A.Pd) 57 LCES (J. Hill)
11/20 Boston H. 2089 TASL (S. Zendeh)
11/26 W. Newbury 50 J. Berry
11/27 Falmouth 420+ M. Lynch#
12/3-4 Cape Cod 2078 CCBC
12/31 Newburyport 100+ J. Berry
Hooded Merganser
11/12 Ipswich 64 R. Heil
11/15 Newton 41 J. Samuelson
11/19 Waltham 60 R. Forster
11/25 M.V. 52 G. Daniels
11/26 Groveland 63 S. Charette
11/27 Braintree 55 W. Petersen
12/2 W. Newbury 47 T. Young
12/3-4 Cape Cod 718 CCBC
12/11 Worcester 66 M. Lynch#
12/20 Oak Bluffs 100+ A. Brown
12/27 Arlington (Spy Pd) 79 L. Taylor
Common Merganser
11/4 P.I. 40 W. Drew#
11/12 Waltham 40 S. Arena#
11/20 Lakeville 100 M. Pelikan
11/26 W. Newbury 105 R. Heil
11/27 Danvers 170 J. Berry
12/3-4 Cape Cod 424 CCBC
12/3 Acton 50 M. Lynch#
12/3 Wakefield 157 P. + F. Vale
12/11 Pembroke 65 W. Petersen
Red-breasted Merganser
11/5 Truro 900 R. Heil
11/5 Winthrop 250+ M. Lynch#
11/20 Boston H. 1950 TASL (S. Zendeh)
11/24 Vineyard Haven 425 A. Brown#
11/27 Falmouth 290+ M. Lynch#
Ruddy Duck
11/5 S. Monomoy 300 H. Ferguson
11/6 Pembroke 355 W. Petersen#
11/24 Lincoln 110 M. Pelikan
11/26 W. Newbury 310 J. Berry
12/3-4 Cape Cod 59 CCBC
12/10 W. Newbury 239 R. Heil
12/11 Pembroke 50 W. Petersen
12/3 Melrose 25 P. + F. Vale
12/11 Westport 61 LCES
12/11 Gay Head 60 A. Fischer
Turkey Vulture
11/6 N. Dartmouth 4 M. Boucher
12/3 Wareham 1 M. LaBossiere
12/23 Randolph 1 W. Petersen
Osprey
11/5 S. Carver 1 K. Anderson
11/20 N. Attleboro 1 G. Valade
11/30 W. Tisbury 1 S. Whiting
12/1 Tisbury 1 A. Keenan
12/2 Chilmark 1 H. Smith
Bald Eagle
thr Lakeville 2 ad v. o.
11/3 Sandwich 1 K. Anderson#
11/11 Rochester 1 ad K. Weinheimer
11/25, 12/23 W. Newbury 1, 2 R. Heil
11/26 Framingham 1 imm K. Hamilton
12/15 Brewster 1 R. Clem
12/26 Stow 1 T. Gumbart
12/30 Newburyport 2 C. Ralph
Northern Harrier
11/5 Truro 3 imm R. Heil
11/6 Barnstable 4 P. Trimble
11/8 S. Dart. (A.Pd) 3 LCES (J. Hill)
11/8 Squibnocket 3 A. Brown#
11/22 Cumb. Farms 14 T. Aversa
12/9 P.I. 6 W. Drew#
Sharp-shinned Hawk
11/4 N. Attleboro 2 G. Valade
11/20 Boston H. 3 TASL (S. Zendeh)
11/12 Squibnocket 3 A. Brown

Sharp-shinned Hawk (continued)
12/31 Malden 2 P. + F. Vale
thr Reports of indiv. from many locations
Cooper's Hawk
thr Sandwich 3 max P. Trimble
thr M.V. 6 max v. o.
thr Reports of indiv. from 23 locations
Northern Goshawk
11/3 Sandwich 1 K. Anderson#
11/12 P.I. 1 imm BBC (J. Center)
11/14 Wayland 1 imm N. Patterson
11/18 Framingham 1 ad K. Hamilton
11/29 Royalston 1 K. Hamilton
12/20 Vineyard Haven 1 G. Daniels
12/27 E. Boxford 1 K. Disney
Red-shouldered Hawk
11/17 Wrentham 1 W. Petersen
12/3 W. Barnstable 1 ad S. Arena#
12/3 Groton 1 M. Resch
12/30 Rochester 1 M. LaBossiere
Rough-legged Hawk
11/12 Newbury 1 lt R. Forster#
11/15 Danvers 1 G. Lynch
12/6 Bourne 1 F. Bouchard
12/21 P.I. 1 L. Nachtrab
Golden Eagle
11/19 Nantucket 1 imm D. Sutherland
12/26 Quabbin (G37) 1 ad R. Bradbury
American Kestrel
11/14 N. Attleboro 3 G. Valade
12/4 Jamaica Plain 2 M. Rines
12/11 Boston (Logan) 2 N. Smith
thr Reports of individuals from 5 locations
Merlin
thr Reports of 13 indiv. from 12 locations
Peregrine Falcon
thr Lawrence 1 J. Hogan
thr Saugus 1 ad J. Berry
11/4 P.I. 1 W. Drew#
11/8 Danvers 1 ad J. Brown#
11/12 W. Tisbury 3 P. Unlendorf
11/12 Chatham (S.B.) 1 W. Petersen#
11/20 Boston H. 2 TASL (S. Zendeh)
11/27 Westport 1 M. Boucher
12/18 Eastham 1 W. Petersen#
Ruffed Grouse
11/2 Georgetown 2 S. Charette
11/27 Milton 1 G. d'Entremont
11/27 E. Boxford 1 J. Brown#
12/2 Wayland 1 N. Patterson
12/3 N. Middleboro 6-7 K. Holmes
12/17 Andover 2 T. Walker#
Wild Turkey
thr Sherborn 23 E. Taylor
11/3 E. Boxford 11 J. Brown#
11/13 Essex 10 R. Young#
11/19 Chilmark 35 A. Keith
Ring-necked Pheasant
12/22 Roslindale 12 T. Aversa
Northern Bobwhite
11/1 W. Roxbury 9 T. Aversa
11/27 Cotuit 5 M. Lynch#
12/31 N. Middleboro 16 K. Holmes
Clapper Rail
11/6 Eastham (F.H.) 1 J. Hoye#
12/4 P.I. 1 S. Perkins#
Virginia Rail
11/5 WBWS 2 R. Heil
11/16 Squibnocket 2 A. Keith#
11/20 Essex 2 T. Young
12/3 Squibnocket 2 A. Brown
12/4 P.I. 1 S. Perkins#
12/13 Cotuit 5 T. Aversa
12/27 Eastham (F.H.) 1 T. Aversa
Common Moorhen
11/4 P.I. 1 W. Drew#
11/12 IRWS 1 imm G. Bertrand
American Coot
11/4, 12/9 P.I. 227, 125 W. Drew#
11/5 S. Monomoy 500 H. Ferguson
11/5 GMNWR 160 P. Roberts
11/6, 12/11 Pembroke 250, 75 W. Petersen#
11/6 Lakeville 250 W. Petersen#
11/12 Amesbury 453 R. Heil
11/28 W. Newbury 149 R. Heil
12/3-4 Cape Cod 171 CCBC
12/3 Squibnocket 100 A. Brown
12/11 Westport 525 LCES
12/27 Arlington (Spy Pd) 104 L. Taylor
12/30 Rochester 175 K. Weinheimer
thr Reports of 1-100 indiv. from many loc.
Black-bellied Plover
11/2, 12/26 Katama 200, 75 A. Keith
11/3 Dennis 120 K. Hamilton#
11/4 P.I. 16 W. Drew#
11/5 Winthrop 120 M. Pelikan
11/5, 13 N. Monomoy 550, 220 B. Nikula
American Golden-Plover
11/5 N. Monomoy 1 B. Nikula
Semipalmated Plover
11/5 N. Monomoy 4 B. Nikula
11/13 Salisbury 1 BBC (I. Giriunas)
12/4 Eastham (F.E.) 1 E. Weinheimer#
12/12 Saugus 1 W. Petersen#
Killdeer
11/5 Westboro 6 M. Lynch#
12/4 Eastham (F.E.) 7 K. Weinheimer#
12/7 Danvers 2 J. Brown#
12/16 Chatham 1 R. Clem
American Oystercatcher
11/5 N. Monomoy 15 B. Nikula
11/29, 12/4 Katama 6, 5 A. Brown#
**American Avocet**
11/5 E. Boston 1 J. Quigley
Greater Yellowlegs
thr Hyannis 16 max S. Clifton#
11/4, 12/21 P.I. 36, 1 W. Drew#
11/6 Squantum 60 P. Fitzgerald
11/8, 29 S. Dart. (A.Pd) 12, 1 LCES (J. Hill)
11/18 E. Boston 20 T. Aversa
11/20 Hull 6 TASL (S. Zendeh)
12/14 Wareham 3 M. LaBossiere
Lesser Yellowlegs
11/13 S. Dartmouth 1 M. Boucher
11/22 WBWS 1 J. Sones
Hudsonian Godwit
11/10 P.I. 3 W. Drew#
Marbled Godwit
11/1-12/2 M.V. 14 max 11/7 v. o.
Ruddy Turnstone
11/12 N. Monomoy 1 W. Petersen#
12/31 Nantucket 5+G. d'Entremont#
Red Knot
11/3 Dennis 20 K. Hamilton
11/5, 13 N. Monomoy 235, 70 B. Nikula
11/20 P.I. 1 M. Lynch#
12/4 P.I. 4 S. Perkins#
Sanderling
11/3 Dennis 450 K. Hamilton#
11/5, 13 N. Monomoy 1100, 300 B. Nikula
11/19 Katama 100+ A. Brown#
12/26 Winthrop 91 P. + F. Vale

Sanderling (continued)
12/21 P.I. 73 W. Drew#
Semipalmated Sandpiper
11/14 S. Monomoy 1 B. Nikula
White-rumped Sandpiper
11/5 Newbury 9 R. Forster
11/5 S. Monomoy 30 H. Ferguson
11/12 S. Monomoy 10 W. Petersen#
11/13 Salisbury 2 BBC (I. Giriunas)
Pectoral Sandpiper
11/5 Newbury 1 R. Forster#
11/14 S. Monomoy 1 B. Nikula#
Purple Sandpiper
11/13 Salisbury 1 BBC (I. Giriunas)
11/19 Boston H. 125+ S. Arena#
11/20 Westport 15 M. Pelikan#
11/20 P.I. 1 M. Lynch#
11/26 E. Gloucester 22 S. Perkins#
12/4 N. Scituate 75 C. Ralph
12/18 Swampscott 50 P. Duffy
Dunlin
11/3 Dennis 250 K. Hamilton#
11/5, 13 N. Monomoy 1500, 1100 B. Nikula
11/5 Revere 200 M. Pelikan
11/18 Winthrop 200 T. Aversa
11/18 WBWS 700 R. Heil
11/26 Eastham 2000+ W. Petersen
11/26 Newburyport 500 H. Wiggin#
12/23 S. Dart. (A.Pd) 233 LCES (J. Hill)
Short-billed Dowitcher
11/9 Katama 1 A. Brown#
Long-billed Dowitcher
12/4 P.I. 3 S. Perkins#
Common Snipe
11/5 Newbury 14 R. Forster
11/19 W. Bridgewater 2 T. Cameron#
12/2 N. Attleboro 4 G. Valade
11/1-12-5 Reports of indiv. from 5 locations
American Woodcock
11/11 Essex 1 T. Young
11/12 S. Monomoy 1 B. Nikula
11/23 Wayland 1 N. Patterson
11/28 Royalston 1 K. Hamilton
12/4 IRWS 1 P. + F. Vale
12/22 Cumb. Farms 1 K. Anderson
12/27 Marstons Mills 1 T. Aversa
Pomarine Jaeger
12/25 Eastham (F.E.) 2 B. Nikula
Parasitic Jaeger
11/1 Katama 1 A. Keith#
11/12 Vineyard Haven 1 V. Laux
Jaeger species
12/6 Provincetown 1 J. Sones
12/25 Eastham (F.E.) 4 B. Nikula
Skua species
12/25 Eastham (F.E.) 1 B. Nikula
Laughing Gull
11/2 Katama 500 A. Keith
11/5, 18 Wellfleet 125, 85 R. Heil
11/16 E. Boston 13 J. Quigley
11/20 New Bedford 9 J. Young#
11/26 Provincetown 2 W. Petersen#
12/4 Winthrop 1 BBC (R. Stymeist)
12/8 M.V. 3 G. Daniels
12/10 Provincetown H. 2 B. Nikula
Little Gull
11/5 Eastham 3 R. Heil
11/17, 12/3 Menemsha 1 A. Keith
11/18 Vineyard Haven 1 imm V. Laux#
12/24 Eastham (F.E.) 1 imm S. Arena#
Common Black-headed Gull
11/12 Newburyport 1 ad M. Lynch#
11/14 Lynn 1 ad J. Quigley
11/16 E. Boston 3 ad J. Quigley
11/17-12-31 Quabbin 1 T. Gagnon#
12/28 Newburyport 1 ad J. Brown#
12/31 Winthrop 8 R. Stymeist
Bonaparte's Gull
11/5 Eastham 275 R. Heil
11/20 Boston H. 1112 TASL (S. Zendeh)
11/20 Newbypt area 97 M. Lynch#
11/25 Osterville 220 P. Trimble
12/3 Menemsha 75+ A. Brown#
12/11 Ipswich 23 J. Berry
12/17 Bourne area 450 W. Petersen#
Ring-billed Gull
11/22 Brockton 400 S. Arena
**California Gull** (details submitted)
12/2 Acton 1 ad M. Resch
Iceland Gull
12/22 Worcester 1 imm R. Bradbury
12/25 Acton 2-3 S. Perkins
Lesser Black-backed Gull
11/2, 12/9 Lynn 1 ad J. Quigley
11/3 Dennis 1 K. Hamilton
11/27 W. Boylston 1 B. Blodgett
12/3 Brewster 1 R. Comeau#
12/3, 12/17 Acton 1 ad, 1 3W M. Resch
12/10 Easton 1 ad S. Arena
Glaucous Gull
12/17 Acton 2 imm M. Resch
12/24 Rockport (A.P.) 1 1W R. Heil
Herring x Great Black-backed Gull
11/21 Lynn 1 ad J. Quigley
Black-legged Kittiwake
11/12 Vineyard Haven 3 V. Laux
11/26 P.I. 7 S. Perkins#
12/24 Rockport (A.P.) 80 R. Heil
12/25 Eastham (F.E.) 60 B. Nikula
Common Tern
11/3 Dennis 8 K. Hamilton
11/5, 18 Wellfleet 80, 7 R. Heil
11/15 Barnstable 40 R. Forster#
Forster's Tern
11/3 Dennis 30 K. Hamilton
11/5 Wellfleet 10+ R. Heil
11/7 M.V. 45 V. Laux#
11/7 S. Dartmouth 3 M. Boucher
11/15 Barnstable 2 R. Forster#
11/25 Dennis 1 W. Loughran
11/27 Falmouth 1 M. Lynch#
12/4 Katama 1 A. Brown#
Dovekie
11/5 P.I. 1 P. Roberts
11/13 Rockport (H.P.) 5 M. Lynch#
12/20 Wellfleet H. 1 R. Everett
12/24 Rockport (A.P.) 2 R. Heil
12/24 Dennis 13 K. Weinheimer#
12/24 Manomet 1 G. d'Entremont
12/25 Barnstable (S.N.) 4 A. Strauss
12/31 Provincetown 1 J. Sones#
Thick-billed Murre
11/20 Squantum 1 TASL (S. Zendeh)
11/23-30 Edgartown 1 M. Dix + v. o.
11/24 P'town H. 2 G. Martin
11/27 P'town (R.P.) 2 E. Nielsen#
12/3 E. Gloucester 1 J. Berry
Razorbill
11/27 Wellfleet H. 40+ J. Sones#
12/10 Sandwich 40+ M. Tuttle#
12/20 Eastham (F.E.) 450+ J. Sones
12/23 P.I. 17 R. Heil

Razorbill (continued)
12/24 Dennis 25 K. Weinheimer#
12/24 Rockport (A.P.) 53 R. Heil
12/25 Provincetown 150 B. Nikula
12/25 Barnstable (S.N.) 90 A. Strauss
12/31 Nant. Sound 34 R. Heil
Large Alcid Species
12/24 Eastham (F.E.) 95 B. Nikula#
12/24 Dennis 90 B. Nikula#
12/25 Eastham (F.E.) 235 B. Nikula
12/25 Provincetown 530 B. Nikula
12/31 Provincetown 110 B. Nikula#
Black Guillemot
11/19 Boston H. 20+ S. Arena#
11/25 N. Scituate 4 J. Cameron#
11/27 Wellfleet H. 1 A. Thomas#
12/9 Cape Ann 50 R. Forster#
**Atlantic Puffin**
11/27 Rockport 6 S. Perkins#
Mourning Dove
11/20 Sandwich 200 S. Perkins
Barn Owl
11/7 Quincy 1 N. Komar
Eastern Screech-Owl
thr Mt.A. 3 v. o.
thr Reports of indiv. from 6 locations
Great Horned Owl
11/8 Essex 2 T. Young
11/12 S. Monomoy 2+ B. Nikula
11/29 Eastham F.H.) 3 T. Aversa
12/3-31 Mt.A. 1 or 2 v. o.
12/19 Essex 2 T. Young
12/22 E. Middleboro 2 K. Anderson
12/31 N. Middleboro 2 pr K. Holmes
Snowy Owl
12/7-30 Gay Head 1 A. Fischer + v. o.
12/11 Boston (Logan) 1 N. Smith
12/18, 22 Nant. (2 loc.) 1, 1 v. o.
12/31 Newburyport 1 imm J. Berry
Barred Owl
11/27 Royalston 1 K. Hamilton#
Long-eared Owl
11/9 Somerville 1 B. Favaloro
11/17 DWWS 1 N. Smith
12/1 Edgartown 1 A. Keith
12/10 P.I. 1 BBC (W. Drummond)
12/16 Essex 1 T. Young
Short-eared Owl
11/4 P.I. 1 W. Drew#
11/8 Edgartown 1 V. Laux
11/20 DWWS 2 N. Smith
11/25 Barnstable (S.N.) 1 H. Ferguson
11/25 Cumb. Farms 9 R. Stymeist#
12/1 Katama 1 A. Keith#
12/10 Topsfield 3 P. Duffy
12/11 Boston (Logan) 1 N. Smith
Northern Saw-whet Owl
11/2 S. Middleboro 1 dead R. Turner
11/17 DWWS 1 b N. Smith
**Rufous Hummingbird**
11/24 Swansea 1 V. Geldart
***Selasphorus* species**
thr Fairhaven 1 L. + N. Mach + v. o.
12/15 Needham 1 imm m K. Eriks + v. o.
Red-headed Woodpecker
11/9-13 P.I. 1 D. Bergeron + v.o.
12/1-31 Lakeville 1 F. Cushman
12/20-31 Petersham 1 R. Bradbury + v. o.
12/26 Vineyard Haven 1 P. Uhlendorf
12/26 Georgetown 1 CBC
Red-bellied Woodpecker
11/7 Lincoln 1 B. Howell
11/13 Falmouth 1 L. Taylor#
11/27 Yarmouth 1 T. Noonan
11/30 Vineyard Haven 1 G. Daniels
12/10 Acton 1 M. Resch
12/11 Carlisle 1 C. Hergenrouther
12/13 Marstons Mills 1 T. Aversa
12/30 Attleboro 1 G.Valade
12/31 Acushnet 1 M. LaBossiere
Yellow-bellied Sapsucker
12/27 Vineyard Haven 1 P. Uhlendorf
Hairy Woodpecker
thr Ipswich 4 J. Berry
thr Natick 2 E. Taylor
11/30 Vineyard Haven 3 A. Brown
12/10 N. Middleboro 2 K. Holmes
Northern Flicker
11/6 Gay Head 100+ G. Daniels
Pileated Woodpecker
11/23 Lincoln 1 W. Petersen
11/27 Winchendon 1 K. Hamilton
12/4 IRWS 1 P. + F. Vale
12/6 Wayland 1 N. Patterson
12/26 Topsfield 1 K. Disney

## FLYCATCHERS THROUGH GROSBEAKS

Late fall and early winter hold exciting possibilities for rarities, and this season was no disappointment. Mostly of western origin, rarities included an **Ash-throated Flycatcher** reported from Sandwich on November 8. If confirmed by the Massachusetts Avian Records Committee (MARC), this would represent only the tenth state record, and the fourth in the past five years. All but one of the sightings of this species in Massachusetts have been in November or December. Another ***myiarchus*** flycatcher was briefly seen in Wakefield, but the observers, pressured by the deadline of a flight departure, were unable to pursue their search. A call from Logan Airport was made but the bird could not be relocated later that day or the following day despite a diligent search.

A **Black-throated Gray Warbler** reported from Brookline on November 18 was well described by the observer, but could not be relocated after that date. If confirmed by MARC it would be only the 11th state record, all of which have been in the fall. Good feeder birds included a **Western Tanager** in Belmont, a **Harris's Sparrow** in Hopkinton, and **Painted Buntings** from Gay Head and Brewster. The bunting in Brewster is now an old friend to the home owners, who welcomed it for the third consecutive year. Not so rare but also noteworthy were a **Sedge Wren** at Fort Hill in Eastham and a **Yellow-headed Blackbird** in Westport.

A **"Spotted" Towhee** was photographed at a feeder in Acushnet in early December. This subspecies of the Rufous-sided Towhee is a rare visitor to Massachusetts. An **"Audubon's" Warbler**, the western subspecies of Yellow-rumped Warbler, was found among the "Myrtles" at Gay Head on Martha's Vineyard.

Red-breasted Nuthatches took a dive this season with only 10 individuals reported, compared with hundreds in the same period last year. Although Carolina Wren numbers seem down slightly, they appear to be holding their own despite the severe winter last year. Last year's winter finch invasion was not repeated. Not a single siskin, redpoll, crossbill, or Pine Grosbeak was reported. R. H. S.

Eastern Phoebe
- 11/5 Newton 1 G. d'Entremont
- 12/2 Gardner 1 P. Vickery

**Ash-throated Flycatcher** (details submitted)
- 11/8 Sandwich 1 P. Trimble

Great Crested Flycatcher
- **11/26** Chatham 1 ph B. Nikula

***Myiarchus* species**
- 11/24 Wakefield 1 P. + F. Vale

Western Kingbird
- 11/3-4 Eastham (F.H.) 1 R. Everett#
- 11/4 Chilmark 1 W. Manter
- 11/5 Truro 1 R. Heil

Horned Lark
- 11/15 Newbury 150 B. Van Dusen
- 11/27 S. Dartmouth 75 M. Boucher
- 12/26 Cumb. Farms 30+ T. Cameron#
- 12/31 N. Attleboro 37 G. Valade

Tree Swallow
- 11/6 Middleboro 10 W. Petersen#
- 11/12, 14 S. Monomoy 400, 250 B. Nikula#
- 12/4 Harwich 1 E. Weinheimer#
- 12/11 Gay Head 40+ A. Fischer
- 12/20 Squibnocket 30 G. Daniels

Barn Swallow
- 11/4 P.I. 4 L. Nachtrab
- 11/5 Orleans 6 R. Heil
- 11/6 Eastham 3 J. Hoye#
- 11/8 Avon 1 G. d'Entremont

American Crow
- 11/6, 26 Framingham 200, 2000 E. Taylor
- 12/31 Framingham 4800 E. Taylor

Fish Crow
- 11/4 N. Attleboro 2 G. Valade
- 11/9 Sandwich 1 P. Trimble
- 11/12 W. Roxbury 2 T. Aversa
- 11/30 Roslindale 1 T. Aversa
- 12/3 Lexington 1 L. Taylor

Common Raven
- 11/27 Royalston 4 K. Hamilton
- 11/30 Winchendon 2 K. Hamilton

Red-breasted Nuthatch
- thr Middleboro 1 K. Anderson
- 11/15 Cotuit 5 T. Aversa
- 11/27 Royalston 4 K. Hamilton

Brown Creeper
- thr E. Boxford 1-2 J. Brown#
- 11/4 Andover 2 S. Charette

Carolina Wren
- 11/3 Wayland 2 M. Pelikan
- 11/18 Falmouth 23 M. Rines
- 11/21 New Bedford 7 M. Rines
- 11/25 Fairhaven 17 R. Stymeist#
- 12/3 Cambridge 1 L. Taylor
- 12/3 Barnstable 14 S. Arena#
- 12/11 Natick 1 E. Taylor

House Wren
- thr Boston 1 T. Aversa
- 11/24 Chilmark 1 A. Keith
- 11/25 Hyannnisport 1 P. Trimble
- 11/26 Truro 1 T. Aversa#
- 12/16 Cumb. Farms 1 T. Aversa
- 12/31 N. Attleboro 1 G. Valade

Winter Wren
- 11/5 WBWS, Truro 1, 2 R. Heil
- 11/5 Nahant 3 M. Pelikan
- 11/6 Arlington Res. 2 M. Pelikan
- 11/8 Nahant 3 T. Aversa
- 11/29 Eastham (F.H.) 3 T. Aversa
- 12/9 Falmouth 5 T. Aversa
- 12/27 Barnstable 3 T. Aversa

**Sedge Wren**
- 11/26-29 Eastham (F.H.) 1 T. Aversa#

Marsh Wren
- 11/6 Squibnocket 1 A. Keith
- 11/12 P.I. 1 M. Lynch#
- 11/19 Cotuit 3 M. Lynch#
- 12/6 S. Dartmouth 1 T. Aversa
- 12/13 Cotuit 1 T. Aversa
- 12/27 Eastham (F.H.) 2 T. Aversa

Golden-crowned Kinglet
- 11/5 Nahant 6 M. Pelikan
- 11/5 Medford 5 M. Pelikan
- 11/18 Falmouth 10 M. Rines

Ruby-crowned Kinglet
- 11/4 Andover 4 S. Charette
- 11/6 Medford 2 M. Rines
- 11/8 Nahant 12 T. Aversa
- 11/30 Roslindale 2 T. Aversa
- 12/4 Boston 2 T. Aversa
- 12/6 S. Dartmouth 2 T. Aversa
- 12/9 Falmouth 2 T. Aversa

Blue-gray Gnatcatcher
- 11/2 W. Newton 1 R. Forster
- 11/13 Chatham 1 J. Sones
- 11/21 New Bedford 1 M. Rines
- 12/4 S. Orleans 1 K. McGinley

Eastern Bluebird
- 11/2 Sharon 12 K. Ryan
- 11/3 Edgartown 32 V. Laux
- 11/17 E. Boxford 14 J. Brown#
- 11/20 Attleboro 27 G. Valade
- 11/25 Hingham 12 S. Carey
- 12/7 Mattapoisett 21 F. Smith
- 12/25 Pepperell 19 E. Stromsted
- thr Numerous reports of 1-10 individuals

Hermit Thrush
- 11/4 Andover 3 S. Charette
- 11/6 Edgartown 4 T. Young
- 11/6 Boston (F.Pk) 5 T. Aversa
- 11/6 Waltham 4 L. Taylor
- 11/12 Braintree 3 J. Cameron#
- 11/27 Falmouth 2 M. Lynch#
- 12/6 S. Dartmouth 2 T. Aversa
- 12/13 Barnstable 4 T. Aversa
- 12/22 E. Middleboro 2 K. Anderson

American Robin
- 11/7 Wayland 785 K. Hamilton
- 11/10 Essex 600+ T. Young
- 11/13 W. Tisbury 2500 A. Keith
- 12/30 Boston 785 K. Hudson

Gray Catbird
12/9 Falmouth 8 T. Aversa
thr Reports of 1-2 indiv. from 8 locations
Brown Thrasher
11/9-12/31 Boston 1 T. Aversa
11/13 Westport 1 M. LaBossiere
11/22 Sandwich 1 P. Trimble
12/11 Gay Head 1 A.Fischer
12/13 Hyannis 1 T. Aversa
12/17 Wareham 1 W. Petersen#
American Pipit
11/3 Wayland 8 M. Pelikan
11/6 Middleboro 250 W. Petersen#
11/6 Barnstable 17 P. Trimble
11/14 Attleboro 27 G. Valade
11/15 Sandwich 35 T. Aversa
11/26 W. Newbury 15 J. Berry
12/30 Katama 10 G. Daniels#
Bohemian Waxwing
12/18 Eastham 1 W. Petersen#
Cedar Waxwing
12/16 Wareham 50 M. LaBossiere
12/18 N. Attleboro 99 G. Valade
Northern Shrike
11/13-20 Newbury 1 J. Soucy + v. o.
11/15 Salisbury 1 M. Rines#
11/25 W. Roxbury 1 imm T. Aversa
12/3 Truro 1 R. Comeau#
12/13 Hyannisport 1 T. Aversa
12/18 Eastham 1 W. Petersen#
12/21 P.I. 2 L. Nachtrab
12/25 Ipswich 1 J. Cook
12/31 Nantucket 1 D. Lange#
European Starling
11/19 Methuen 1 million J. Hogan
11/26 Newbypt 10,000+ S. Charette
White-eyed Vireo
11/14 Yarmouthport 1 R. Forster#
11/20 S. Dartmouth 1 J. Young#
12/26 Chilmark 1 A. Keith#
Solitary Vireo
11/12 IRWS 1 G. Bertrand
Red-eyed Vireo
11/3 Barnstable 1 M. Tuttle
11/12 S. Boston 1 R. Donovan
Orange-crowned Warbler
11/2 Chilmark 1 A. Keith
11/5 Truro 1 R. Heil
11/6 DWWS 1 K. Weinheimer
11/9-12/31 Boston 3 max T. Aversa
11/12 W. Roxbury 2 T. Aversa#
11/13 Milton 1 G. d'Entremont
11/18 E. Boston 1 T. Aversa
12/26 Chilmark 1 A. Keith#
Nashville Warbler
11/1-12 W. Roxbury 1-2 T. Aversa#
11/2 Chilmark 1 A. Keith
11/3 Boston 1 T. Aversa
11/6 Medford 1 M. Rines
11/9 Sandwich 1 P. Trimble
11/18 E. Boston 1 T. Aversa
Yellow Warbler
11/19 S. Boston 1 R. Donovan
Magnolia Warbler (details)
11/12 Boston 1 S. Arena#
Black-throated Blue Warbler
11/10 Katama 1 fide A. Brown
Yellow-rumped Warbler
11/5 E. Boston (B.I.) 20+ M. Lynch#
11/6 Orleans 40 J. Hoye#
11/12 Squibnocket 50+ A. Brown#
11/12 P.I. 80+ M. Lynch#
11/29 Eastham (F.H.) 60 T. Aversa
12/4 Squantum 60 M. Rines
12/9 Falmouth 26 T. Aversa
12/20 Taunton 19 T. Aversa
**"Audubon's" Warbler**
11/21 Gay Head 1 A. Keith
**Black-throated Gray Warbler**
11/18 Brookline 1 T. Aversa
Pine Warbler
12/12 Brewster 1 A. King
Prairie Warbler
11/18 Truro 1 R. Heil
Palm Warbler
11/1-30 Sandwich 30 max P. Trimble
11/1 W. Roxbury 10 T. Aversa
11/5 Waltham 4 L. Taylor#
11/25 N. Scituate 2 J. Cameron#
11/29 Eastham 13 T. Aversa
12/2 W. Roxbury 2 T. Aversa
12/4 Scituate 3 C. Ralph
12/16 Cumb. Farms 1 T. Aversa
12/20 Raynham 10 T. Aversa
12/30 Katama 11 G. Daniels
Blackpoll Warbler
11/6 DWWS 1 K. Weinheimer
American Redstart
11/13 Westport 1 M. LaBossiere
Northern Waterthrush
11/18 Barnstable 1 D. Ludlow
12/3, 27 Marstons Mills 1 T. Aversa#
Common Yellowthroat
11/6 Wakefield 1 P. + F. Vale
11/13 Falmouth 1 L. Taylor#
11/15 Cumb. Farms 2 T. Aversa
11/18 Everett 1 T. Aversa
11/25 Fairhaven 1 M. Rines#
11/27 Cotuit 1 P. Trimble
12/9 Boston 1 m V. Caiani
12/16 Cumb. Farms 1 T. Aversa
12/28 W. Tisbury 1 A. Keith
Wilson's Warbler
11/1 W. Roxbury 1 m T. Aversa
12/4 Roslindale 1 m T. Aversa
Yellow-breasted Chat
11/8 Nahant 1 T. Aversa
11/29 Eastham (F.H.) 2 T. Aversa
12/9 Falmouth 3 T. Aversa
12/17-31 Dorchester 1 R. Donovan
12/26-29 Chilmark 1 A. Goldman#
**Western Tanager**
12/22-31 Belmont 1 J. Campbell
Blue Grosbeak
11/1 Gay Head 1 G. Daniels
11/4 Barnstable 1 M. Tuttle
**Painted Bunting**
11/12-12/31 Brewster 1 m A. Furman
12/3 Gay Head 1 f G. Daniels
Dickcissel
11/1 W. Roxbury 1 T. Aversa
11/9 Westwood 1 B. Wicks
11/27 S. Dartmouth 1 E. Nielsen#
12/5 Marshfield 1 fide D. Clapp
12/7-31 Melrose 1 D. Jewell + v. o.
Rufous-sided Towhee
11/9 N. Dartmouth 1 M. Boucher
11/13 Falmouth 3 L. Taylor#
11/20 Boston 1 T. Aversa
11/22 DWWS 1 N. Ludlow
11/24 Easton 1 K. Ryan
12/6 S. Dartmouth 3 T. Aversa

Rufous-sided Towhee (continued)

| | | | |
|---|---|---|---|
| 12/13 | W. Barnstable | 1 | T. Aversa |
| 12/15 | Bedford | 1 | D. Argon |
| 12/18 | N. Attleboro | 2 | G. Valade |
| 12/27 | Charlestown | 1 | M. Hall |

**"Spotted" Towhee**

| | | | |
|---|---|---|---|
| 12/5-31 | Acushnet | 1 ph | M. LaBossiere# |

American Tree Sparrow

| | | | |
|---|---|---|---|
| 11/9 | Sandwich | 12 | P. Trimble |
| 11/18 | Ipswich | 14 | N. Nash |
| 11/26 | Lynnnfield | 25+ | M. Lynch# |
| 12/2 | W. Roxbury | 113 | T. Aversa |
| 12/12 | Saugus | 30 | W. Petersen# |
| 12/16 | Cumb. Farms | 370 | T. Aversa |

Chipping Sparrow

| | | | |
|---|---|---|---|
| 11/5 | E. Boston (B.I.) | 1 | M. Lynch# |
| 11/6 | Hanson | 1 | W. Petersen# |
| 11/6 | Gay Head | 6 | G. Daniels |
| 11/6 | P.I. | 2 | D. Chickering |
| 11/16 | Boston | 1 | T. Aversa |
| 12/4 | P.I. | 40 | S. Perkins# |
| 12/12 | Brewster | 4 | A. King |
| 12/20 | Raynham | 1 | T. Aversa |

Clay-colored Sparrow

| | | | |
|---|---|---|---|
| 12/9 | M.V. | 1 | V. Laux |
| 12/3-31 | Nantucket | 1 | E. Andrews# |

Field Sparrow

| | | | |
|---|---|---|---|
| 11/5 | Truro | 13 | R. Heil |
| 11/5 | E. Boston (B.I.) | 4 | M. Lynch# |
| 11/6 | Acushnet | 6 | M. LaBossiere |
| 11/12 | W. Roxbury | 6 | T. Aversa |
| 11/13 | Boston | 3 | T. Aversa |
| 11/20 | Bourne | 20 | T. Aversa |
| 12/16 | Cumb. Farms | 23 | T. Aversa |
| 12/20 | Raynham | 45 | T. Aversa |
| 12/23 | Berkley | 11 | G. d'Entremont |

Vesper Sparrow

| | | | |
|---|---|---|---|
| thr | Sandwich | 6 max | P. Trimble |
| 11/6 | Katama | 1 | V. Laux# |
| 11/8 | N. Attleboro | 1 | G. Valade |
| 11/20 | Bourne | 1 | T. Aversa |
| 12/16 | Cumb. Farms | 1 | T. Aversa |
| 12/17 | Westport | 1 | M. LaBossiere |

Savannah Sparrow

| | | | |
|---|---|---|---|
| 11/6 | N. Attleboro | 19 | G. Valade |
| 11/9 | Sandwich | 60 | P. Trimble |
| 11/12 | P.I. | 14 | M. Lynch# |
| 12/6 | S. Dartmouth | 20 | T. Aversa |
| 12/16 | Cumb. Farms | 51 | T. Aversa |
| 12/20 | Raynham | 25 | T. Aversa |
| 12/29 | Wayland | 9 | N. Patterson |

"Ipswich" Savannah Sparrow

| | | | |
|---|---|---|---|
| 11/4 | P.I. | 9 | L. Nachtrab |
| 11/5 | Salisbury | 5 | R. Forster |
| 11/12 | S. Monomoy | 3 | W. Petersen# |
| 11/13 | M.V. | 2 | A. Keith# |
| 12/3 | N. Monomoy | 20+ | B. Nikula |
| 12/18 | Eastham | 16 | W. Petersen# |

Grasshopper Sparrow

| | | | |
|---|---|---|---|
| 11/5 | Revere | 1 | P. + F. Vale |
| 11/20 | Sandwich | 1 | S. Sweet |

Sharp-tailed Sparrow

| | | | |
|---|---|---|---|
| 11/5 | Salisbury, P.I. | 3, 20 | R. Forster# |
| 11/6 | Barnstable | 1 | P. Trimble |
| 11/6 | Eastham (F.H.) | 6 | J. Hoye# |
| 12/3 | Scituate | 10 | S. Perkins# |

Seaside Sparrow

| | | | |
|---|---|---|---|
| 11/5 | Salisbury, P.I. | 1, 2 | R. Forster# |
| 12/3 | Scituate | 3 | S. Perkins# |
| 12/4 | P.I. | 2 | C. Floyd |
| 12/6 | Eastham (F.H.) | 10 | J. Sones |

Fox Sparrow

| | | | |
|---|---|---|---|
| 11/2 | Boston (F.Pk) | 2 | T. Aversa |
| 11/14 | Mt.A. | 2 | M. Rines |
| 11/18 | Wayland | 5 | N. Patterson |
| 11/20 | N. Attleboro | 3 | G. Valade |
| 12/2 | Acushnet | 1 | M. LaBossiere |
| 12/2 | Gay Head | 1 | A. Fischer |
| 12/4 | Wayland | 1 | N. Patterson |
| 12/6 | S. Dartmouth | 1 | T. Aversa |
| 12/12 | W. Roxbury | 2 | T. Aversa |
| 12/13 | Middleboro | 1 | J. McEntee |

Swamp Sparrow

| | | | |
|---|---|---|---|
| 11/8 | GMNWR | 15 | T. Aversa |
| 11/9 | Sandwich | 14 | P. Trimble |
| 11/15 | Cotuit | 14 | T. Aversa |
| 12/6 | S. Dartmouth | 21 | T. Aversa |
| 12/16 | Cumb. Farms | 69 | T. Aversa |

White-throated Sparrow

| | | | |
|---|---|---|---|
| thr | N. Dartmouth | 29 | M. Boucher |
| 11/27 | Falmouth | 22 | M. Lynch# |

White-crowned Sparrow

| | | | |
|---|---|---|---|
| thr | Sandwich | 20 max | P. Trimble |
| 11/5 | Salisbury | 1 | R. Forster# |
| 11/8 | N. Attleboro | 2 | G. Valade |
| 11/12 | W. Roxbury | 2 | T. Aversa# |
| 11/18 | Brookline | 4 | T. Aversa |
| 12/3 | Gay Head | 1 | G. Daniels |
| 12/6 | Fairhaven | 1 | T. Aversa |
| 12/9 | Falmouth | 2 | T. Aversa |
| 12/16 | Cumb. Farms | 4 | T. Aversa |

**Harris' Sparrow**

| | | | |
|---|---|---|---|
| 12/11-31 | Hopkinton | 1 | G. Gove + J. Gordon |

Dark-eyed Junco

| | | | |
|---|---|---|---|
| 11/2 | Andover | 250+ | S. Charette |
| 11/11 | Gay Head | 350+ | G. Daniels |

Lapland Longspur

| | | | |
|---|---|---|---|
| 11/4 | P.I. | 80 | D. Chickering |
| 12/3 | N. Monomoy | 15+ | B. Nikula |
| 12/31 | Newbury | 6 | J. Berry |

Snow Bunting

| | | | |
|---|---|---|---|
| 11/4 | Provincetown | 250+ | J. Sones |
| 11/5 | Ipswich (C.B.) | 400 | J. Berry |
| 11/5 | Salisbury | 115 | R. Forster# |
| 11/12 | P.I. | 300+ | M. Lynch# |
| 11/12 | W. Newbury | 100 | R. Forster |
| 11/13, 12/16 | Katama | 85, 15 | A. Keith |
| 11/19 | Boston H. | 400+ | S. Arena# |
| 11/27 | Westport | 98 | M. Boucher |
| 12/2 | W. Roxbury | 5 | T. Aversa |

Red-winged Blackbird

| | | | |
|---|---|---|---|
| 11/11 | Gay Head | 200+ | A. Brown |
| 12/16 | Cumb. Farms | 130 f | T. Aversa |

Eastern Meadowlark

| | | | |
|---|---|---|---|
| 11/6 | Katama | 35 | V. Laux# |
| 11/6 | Barnstable | 30 | P. Trimble |
| 11/20 | N. Attleboro | 9 | G. Valade |
| 11/27 | Middleboro | 50+ | W. Petersen |
| 11/29 | S. Dart. (A.Pd) | 11 | LCES (J. Hill) |
| 12/3 | Barnstable | 12 | S. Arena# |
| 12/3 | Katama | 15 | A. Keith |
| 12/9 | N. Attleboro | 19 | G. Valade |
| 12/30 | Essex | 7 | T. Young |

**Yellow-headed Blackbird**

| | | | |
|---|---|---|---|
| 12/17 | Westport | 1 m | D. Bowen |

Rusty Blackbird

| | | | |
|---|---|---|---|
| 11/5 | Wakefield | 24 | P. + F. Vale |
| 11/12 | Randolph | 1 | G. d'Entremont |
| 11/26 | Framingham | 32 | K. Hamilton |
| 12/2 | W. Roxbury | 1 | T. Aversa |
| 12/27 | Wayland | 2 | N. Patterson |
| 12/27 | Marstons Mills | 3 | T. Aversa |

| | | | |
|---|---|---|---|
| Common Grackle | | | |
| 11/9 | Sandwich | 2000 | P. Trimble |
| Brown-headed Cowbird | | | |
| 11/2 | Rowley | 104 | D. Chickering |
| 11/3 | Lawrence | 230 | J. Hogan |
| 11/20 | S. Dartmouth | 700 | M. Pelikan# |
| 12/20 | Raynham | 190 | T. Aversa |
| 12/23 | Berkley | 200 | G. d'Entremont |
| 12/27 | E. Middleboro | 150 | K. Anderson |
| 12/29 | Pepperell | 90 | E. Stromsted |
| Northern Oriole | | | |
| 11/3 | Hubbardston | 2 f | M. Pelikan |
| 11/11 | Squibnocket | 1 | A. Brown# |
| 11/14-12/31 | Mt.A. | 1 | M. Rines + v. o. |
| 11/15 | Yarmouthport | 1 | R. Forster# |
| 11/29 | Peabody | 2 | M. Rines |
| 12/16-23 | Chilmark | 1 | T. Rivers |
| Purple Finch | | | |
| 11/12 | Waltham | 2 | L. Taylor |
| 12/16 | Essex | 1 | T. Young |
| American Goldfinch | | | |
| 12/3 | Salisbury/P.I. | 225 | R. Forster# |
| Evening Grosbeak | | | |
| 11/29 | Athol | 1 | K. Hamilton |


**Cape Cod Field Ornithology**

Aug. 21-26 withWayne Petersen,
Mass. Audubon Society Ornithologist

Other Week-long Summer Courses include
Natural History
Marine Life
Cape Cod Literature
Nature Photography

Mass. Audubon Society (508) 349-2615
PO Box 236, S. Wellfleet, MA 02663

**BIRD NANTUCKET**

Study fall migration on the beautiful island of Nantucket.

**September 9 - 30, 1995**

**Banding Workshops Field Trips**

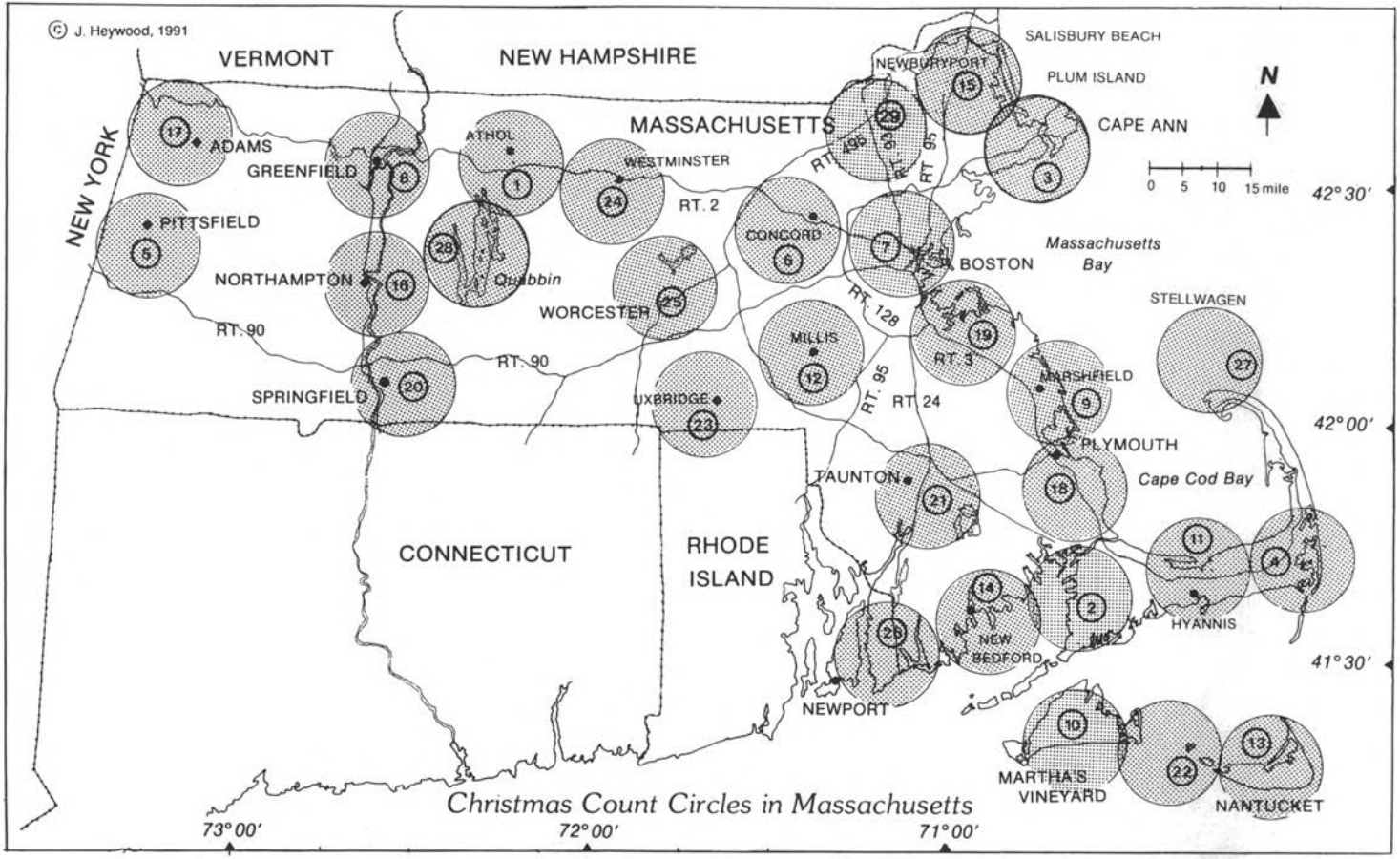
Sponsored by Maria Mitchell Association.

*Write:*

Edith Andrews, P. O. Box 1182
Nantucket, MA 02554

## LIST OF ABBREVIATIONS

| | |
|---|---|
| ad | adult |
| alt | alternate |
| b | banded |
| br | breeding |
| dk | dark (phase) |
| f | female |
| fl | fledged |
| imm | immature |
| ind | individuals |
| juv | juvenile |
| loc | location |
| lt | light (phase) |
| m | male |
| max | maximum |
| mi | mile |
| migr | migrating |
| n | nesting |
| ph | photographed |
| pl | plumage |
| pr | pair |
| S | summer (1S = first summer) |
| thr | throughout |
| v.o. | various observers |
| W | winter (2W = second winter) |
| w/ | with |
| yg | young |
| # | additional observers |
| A.A. | Arnold Arboretum |
| A.P. | Andrews Point, Rockport |
| A.Pd | Allens Pond, S. Dartmouth |
| Arl. | Arlington |
| B. | Beach |
| B.I. | Belle Isle, E. Boston |
| B.R. | Bass Rocks, Gloucester |
| Buzz. | Buzzards Bay |
| Cambr. | Cambridge |
| C.B. | Crane Beach, Ipswich |
| Corp. B. | Corporation Beach, Dennis |
| C.P. | Crooked Pond, Boxford |
| Cumb. Farms | Cumberland Farms, Middleboro-Halifax |
| E.P. | Eastern Point, Gloucester |
| F.E. | First Encounter Beach, Eastham |
| F.H. | Fort Hill, Eastham |
| F.M. | Fowl Meadow |
| F.P. | Fresh Pond, Cambridge |
| F.Pk | Franklin Park, Boston |
| G40 | Gate 40, Quabbin |
| G45 | Gate 45, Quabbin |
| H. | Harbor |
| I. | Island |
| L. | Ledge |
| M.V. | Martha's Vineyard |
| Mt.A. | Mount Auburn Cemetery, Cambridge |
| Nant. | Nantucket |
| Newbypt | Newburyport |
| P.I. | Plum Island |
| Pd | Pond |
| P'town | Provincetown |
| Quab. | Quabbin |
| Res. | Reservoir |
| R.P. | Race Point, Provincetown |
| S.B. | South Beach, Chatham |
| S. Dart. | South Dartmouth |
| S.F. | State Forest |
| S.N. | Sandy Neck, Barnstable |
| S.P. | State Park |
| Stellw. | Stellwagen Bank |
| Worc. | Worcester |
| BBC | Brookline Bird Club |
| BMB | Broad Meadow Brook, Worcester |
| CBC | Christmas Bird Count |
| CCBC | Cape Cod Bird Club |
| DFWS | Drumlin Farm Wildlife Sanctuary |
| DWWS | Daniel Webster Wildlife Sanctuary |
| EMHW | Eastern Massachusetts Hawk Watch |
| GMNWR | Great Meadows National Wildlife Refuge |
| HRWMA | High Ridge Wildlife Management Area, Gardner-Westminster |
| IRWS | Ipswich River Wildlife Sanctuary |
| LCES | Lloyd Center for Environmental Studies |
| MARC | Massachusetts Avian Records Committee |
| MAS | Massachusetts Audubon Society |
| MBO | Manomet Observatory |
| MBWMA | Martin Burns Wildlife Management Area, Newbury |
| MDFW | MA Division of Fisheries and Wildlife |
| MNWS | Marblehead Neck Wildlife Sanctuary |
| MSSF | Myles Standish State Forest |
| NAC | Nine Acre Corner, Concord |
| NBC | Needham Bird Club |
| NEHW | New England Hawk Watch |
| ONWR | Oxbow National Wildlife Refuge |
| SRV | Sudbury River Valley |
| SSBC | South Shore Bird Club |
| TASL | Take A Second Look Harbor Census |
| USFWS | US Fish and Wildlife Service |
| WBWS | Wellfleet Bay Wildlife Sanctuary |
| WMWS | Wachusett Meadow Wildlife Sanctuary |


© J. Heywood, 1991
VERMONT
NEW HAMPSHIRE
MASSACHUSETTS
NEW YORK
CONNECTICUT
RHODE ISLAND
ADAMS
GREENFIELD
ATHOL
WESTMINSTER
PITTSFIELD
NORTHAMPTON
Quabbin
WORCESTER
RT. 2
RT. 90
SPRINGFIELD
CONCORD
MILLIS
UXBRIDGE
RT. 95
RT. 128
RT. 3
RT. 24
BOSTON
Massachusetts Bay
NEWBURYPORT
SALISBURY BEACH
PLUM ISLAND
CAPE ANN
N
0 5 10 15 mile
42° 30′
42° 00′
41° 30′
MARSHFIELD
PLYMOUTH
Cape Cod Bay
STELLWAGEN
TAUNTON
HYANNIS
NEW BEDFORD
NEWPORT
MARTHA'S VINEYARD
NANTUCKET
73° 00′
72° 00′
71° 00′
Christmas Count Circles in Massachusetts

## CHRISTMAS BIRD COUNT, 12/17/94-1/2/95

Compiled by Marjorie W. Rines and Robert H. Stymeist

The Ninety-fifth annual Christmas Bird Count (CBC), sponsored by the National Audubon Society, was held from December 17, 1994, to January 2, 1995. Eastern Massachusetts and a portion of Rhode Island contain twenty-four count areas (see map). Results from these counts are summarized in the following pages. A total of 188 species plus three subspecies, "Ipswich" Sparrow, "Oregon" Junco, and "Bullock's" Oriole, were recorded. Two species, the *selasphorus* hummingbird at Fairhaven and three unidentified phalaropes seen on the Mid-Cape CBC, are included in the 188 species total. The Whooper Swan that has been present for some time in Essex County was found on the Newburyport CBC, but was not included. Three additional species were found during the CBC period but were not included on the count day: a King Eider in Plymouth, an American Oystercatcher on Martha's Vineyard, and a Common Murre on Nantucket. The Mid-Cape Count led the area counts with 126 species, followed by Buzzards Bay and Greater Boston with 122 species each.

An array of rarities was found: Arctic/Pacific Loon, Eared Grebe, Northern Fulmar, Greater White-fronted Goose, Golden Eagle, Bohemian Waxwing, Painted Bunting, Clay-colored Sparrow, Harris' Sparrow, and Yellow-headed Blackbird. The highlight was, of course, the first *selasphorus* hummingbird found on a Massachusetts CBC on the New Bedford CBC.

Twenty-three Turkey Vultures in Westport, were a record high for a Massachusetts CBC, and a Black-throated Blue Warbler on the Plymouth count was just the second record for a Massachusetts CBC. The other bird was recorded on the Northampton CBC on December 16, 1979. Other unusual birds included Blue-winged Teal, Pomarine Jaeger, Laughing Gull, Northern Waterthrush, and Dickcissel.

In the following table, birds identified only by species type, such as "scaup species," are not shown unless no identifiable form was noted, and the totals of individuals are those supplied by the compiler and therefore may not add up with the numbers on the charts.

We wish to thank all of the compilers who contributed their time to prepare the results for this summary. They are as follows: **Louis Wagner**, Andover; **Dave Small**, Athol; **Richard Harlow**, Buzzards Bay; **John Nove**, Cape Ann; **Blair Nikula**, Cape Cod; **Richard Walton**, Concord; **Robert Stymeist**, Greater Boston; **Warren Harrington**, Marshfield; **Robert Culbert**, Martha's Vineyard; **Peter Trimble**, Mid-Cape Cod; **Elissa Landre**, Millis; **Edith Andrews**, Nantucket; **Michael Boucher**, New Bedford; **Jim Berry**, Newburyport; **Trevor Lloyd-Evans**, Plymouth; **Scott Surner**, Quabbin; **Glenn d'Entremont**, Quincy; **Simon Perkins**, Stellwagen; **Steve Arena**, Taunton-Middleboro; **Simon Perkins**, Tuckernuck; **Richard Hildreth**, Uxbridge; **John Williams**, Westminster; **Fran McMenemy**, Worcester; **Dave Emerson**, Newport, RI/Westport, MA.

*Map on facing page*: Each Christmas Count Circle was located by the latitude and longitude (in degrees and minutes) of its center. Athol (1), Buzzards Bay (2), Cape Ann (3), Cape Cod (4), Central Berkshire (5), Concord (6), Greater Boston (7), Greenfield (8), Marshfield (9), Martha's Vineyard (10), Mid-Cape Cod (11), Millis (12), Nantucket (13), New Bedford (14), Newburyport (15), Northampton (16), Northern Berkshire (17), Plymouth (18), Quincy (19), Springfield (20), Taunton-Middleboro (21), Tuckernuck Island (22), Uxbridge, MA/RI (23), Westminster (24), Worcester (25), Newport County, RI/Westport, MA (26), Stellwagen Bank (27), Quabbin (28), and Andover (29).

| species | And. | Athol | B. B. | C. Ann | C. Cod | Conc. | Gr. Bos. | Marsh. | M. V. | Mid-C. | Millis |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Red-throated Loon | 0 | 0 | 4 | 9 | 9 | 0 | 2 | 5 | 114 | 17 | 0 |
| Arctic/Pacific Loon | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Common Loon | 0 | 3 | 52 | 46 | 50 | 0 | 10 | 29 | 337 | 150 | 0 |
| Pied-billed Grebe | 0 | 0 | 18 | 1 | 13 | 1 | 4 | 0 | 11 | 16 | 0 |
| Horned Grebe | 0 | 2 | 125 | 30 | 7 | 0 | 66 | 8 | 45 | 165 | 0 |
| Red-necked Grebe | 0 | 0 | 0 | 15 | 1 | 0 | 25 | 24 | 34 | 36 | 0 |
| Eared Grebe | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Northern Fulmar | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | c.w. | 0 |
| Northern Gannet | 0 | 0 | 0 | 18 | 118 | 0 | 0 | 0 | 434 | 12 | 0 |
| Great Cormorant | 0 | 0 | 96 | 107 | 42 | 0 | 22 | 0 | 91 | 20 | 0 |
| Double-cr. Cormorant | 1 | 0 | 8 | 3 | 1 | 0 | 45 | 0 | 3 | 0 | 0 |
| American Bittern | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| Great Blue Heron | 9 | 0 | 27 | 2 | 74 | 4 | 11 | 19 | 35 | 63 | 3 |
| Black-cr. Night-Heron | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 16 | 0 | 0 |
| Mute Swan | 0 | 0 | 51 | 26 | 10 | 0 | 11 | 22 | 68 | 33 | 0 |
| Gr. White-fr. Goose | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Snow Goose | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| Brant | 0 | 0 | 53 | 0 | 1578 | 0 | 769 | 256 | 5 | 179 | 0 |
| Canada Goose | 1654 | 43 | 657 | 5445 | 1748 | 4815 | 2554 | 775 | 1440 | 793 | 1969 |
| Wood Duck | 0 | 0 | 5 | 0 | 1 | 2 | 9 | 0 | 16 | 4 | 5 |
| Green-winged Teal | 0 | 0 | 0 | 1 | 2 | 2 | 5 | 9 | 9 | 52 | 0 |
| American Black Duck | 32 | 49 | 707 | 454 | 2840 | 136 | 1615 | 1782 | 1275 | 1481 | 154 |
| Mallard | 243 | 15 | 477 | 581 | 222 | 1463 | 2898 | 256 | 600 | 605 | 644 |
| Northern Pintail | 0 | 0 | 0 | 1 | 1 | 4 | 0 | 1 | 12 | 10 | 0 |
| Blue-winged Teal | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| Northern Shoveler | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 3 | 1 | 1 |
| Gadwall | 0 | 0 | 15 | 37 | 10 | 3 | 5 | 1 | 0 | 181 | 0 |
| Eurasian Wigeon | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 |
| American Wigeon | 0 | 0 | 8 | 13 | 53 | 1 | 75 | 0 | 33 | 115 | 0 |
| Canvasback | 0 | 0 | 20 | 1 | 0 | 0 | 6 | 0 | 2 | 51 | 0 |
| Redhead | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 |
| Ring-necked Duck | 0 | 0 | 38 | 2 | 18 | 8 | 23 | 0 | 16 | 84 | 146 |
| Greater Scaup | 0 | 0 | 927 | 18 | 52 | 0 | 200 | 4 | 100 | 15 | 0 |
| Lesser Scaup | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 36 | 13 |
| scaup species | 0 | 0 | 162 | 0 | 0 | 1 | 0 | 0 | 85 | 2 | 0 |
| Common Eider | 0 | 0 | 3078 | 1978 | 7726 | 0 | 6371 | 4400 | 4700 | 3859 | 0 |
| Harlequin Duck | 0 | 0 | 0 | 9 | 0 | 0 | 2 | 0 | 32 | 0 | 0 |
| Oldsquaw | 0 | 0 | 61 | 58 | 82 | 0 | 3 | 8 | 175 | 728 | 0 |
| Black Scoter | 0 | 0 | 39 | 22 | 263 | 0 | 4 | 8 | 390 | 21 | 0 |
| Surf Scoter | 0 | 0 | 12 | 46 | 60 | 0 | 31 | 5 | 147 | 62 | 0 |
| White-winged Scoter | 0 | 0 | 1483 | 294 | 572 | 0 | 521 | 668 | 550 | 295 | 0 |
| Common Goldeneye | 50 | 3 | 629 | 553 | 309 | 22 | 669 | 190 | 1035 | 634 | 0 |
| Barrow's Goldeneye | 0 | 0 | 1 | 1 | 0 | 0 | 5 | 0 | 4 | 1 | 0 |
| Bufflehead | 0 | 0 | 1735 | 344 | 1368 | 0 | 739 | 729 | 940 | 1823 | 3 |
| Hooded Merganser | 14 | 0 | 326 | 3 | 46 | 46 | 252 | 2 | 260 | 113 | 18 |
| Common Merganser | 50 | 11 | 33 | 13 | 305 | 61 | 293 | 2 | 1 | 435 | 8 |
| Red-br. Merganser | 0 | 0 | 1386 | 462 | 2137 | 0 | 1564 | 460 | 2100 | 48 | 0 |
| Ruddy Duck | 0 | 0 | 2 | 0 | 19 | 2 | 27 | 0 | 150 | 1 | 0 |
| Turkey Vulture | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bald Eagle | 2 | 3 | 0 | 0 | 0 | c.w. | 0 | 0 | 0 | 0 | 0 |
| Northern Harrier | 0 | 1 | 6 | 5 | 17 | 3 | 1 | 14 | 24 | 10 | 2 |
| Sharp-shinned Hawk | 1 | 2 | 10 | 4 | 12 | 8 | 15 | 2 | 11 | 11 | 7 |

| species | Nant. | N.B. | Nbpt. | Ply. | Quab. | Quin. | Stell. | Tau/Mb. | Tuck | Uxbr. | Wstm. | Worc. | Nwp,RI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RTLO | 62 | 1 | 3 | 20 | 0 | 6 | 10 | 0 | 8 | 0 | 0 | 0 | 27 |
| APLO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| COLO | 159 | 6 | 89 | 101 | 20 | 17 | 43 | 1 | 17 | 0 | 0 | 8 | 116 |
| PBGR | 9 | 1 | 0 | 13 | 0 | 1 | 0 | 6 | 0 | 0 | 0 | 0 | 8 |
| HOGR | 10 | 32 | 105 | 73 | 22 | 99 | 1 | 4 | 6 | 0 | 0 | 2 | 193 |
| RNGR | 12 | 0 | 14 | 68 | 0 | 138 | 6 | 0 | 0 | 0 | 0 | 0 | 16 |
| EAGR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NOFU | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NOGA | 542 | 0 | 3 | 6 | 0 | 0 | 30 | 0 | 30 | 0 | 0 | 0 | 0 |
| GRCO | 43 | 59 | 44 | 23 | 0 | 143 | 1 | 3 | 11 | 0 | 0 | 0 | 611 |
| DCCO | 1 | 3 | 2 | 0 | 0 | 12 | 3 | 0 | 4 | 0 | 0 | 1 | 4 |
| AMBI | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| GBHE | 13 | 14 | 10 | 9 | 0 | 29 | 3 | 1 | 4 | 6 | 0 | 7 | 36 |
| BCNH | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| MUSW | 78 | 60 | 13 | 101 | 2 | 12 | 0 | 28 | 2 | 0 | 0 | 0 | 484 |
| GWFG | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SNGO | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| BRAN | 63 | 11 | 0 | 215 | 0 | 711 | 0 | 0 | 9 | 0 | 0 | 0 | 271 |
| CAGO | 380 | 889 | 2967 | 814 | 130 | 1774 | 2 | 1273 | 14 | 433 | 45 | 943 | 5436 |
| WODU | c.w. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 2 | 0 |
| GWTE | 22 | 7 | 12 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 45 |
| ABDU | 335 | 642 | 4891 | 789 | 203 | 1271 | 164 | 178 | 85 | 173 | 61 | 234 | 1219 |
| MALL | 609 | 144 | 1010 | 267 | 975 | 303 | 17 | 218 | 0 | 433 | 243 | 880 | 489 |
| NOPI | 1 | 0 | 46 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 33 |
| BWTE | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NOSH | 0 | 0 | c.w. | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 3 |
| GADW | c.w. | 2 | 4 | 25 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 66 |
| EUWI | c.w. | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| AMWI | 17 | 13 | c.w. | 3 | 0 | 0 | 0 | 26 | 22 | 0 | 0 | 1 | 43 |
| CANV | 64 | 0 | 0 | 0 | 0 | 15 | 0 | 382 | 0 | 0 | 0 | 0 | 55 |
| REDH | 18 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| RNDU | 49 | 0 | c.w. | 2 | 0 | 27 | 0 | 0 | 0 | 1 | 0 | 0 | 3 |
| GRSC | 40 | 1601 | 8 | 17 | 0 | 121 | 0 | 0 | 2 | 0 | 0 | 0 | 1373 |
| LESC | 57 | 0 | 0 | 12 | 0 | 5 | 0 | 5 | 0 | 0 | 0 | 0 | 245 |
| scaup sp | 0 | 53 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| COEI | 1837 | 19 | 978 | 3465 | 0 | 7009 | 612 | 0 | 816 | 0 | 0 | 0 | 521 |
| HADU | 16 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 113 |
| OLDS | 50143 | 83 | 145 | 148 | 0 | 115 | 16 | 0 | 125000 | 0 | 0 | 0 | 0 |
| BLSC | 96 | 5 | 17 | 44 | 1 | 11 | 2 | 0 | 88 | 0 | 0 | 0 | 181 |
| SUSC | 16 | 47 | 44 | 202 | 0 | 26 | 0 | 0 | 18 | 0 | 0 | 0 | 129 |
| WWSC | 443 | 82 | 603 | 323 | 0 | 1907 | 445 | 0 | 77 | 0 | 0 | 0 | 242 |
| COGO | 1311 | 282 | 464 | 266 | 61 | 456 | 45 | 94 | 83 | 0 | 0 | 56 | 604 |
| BAGO | c.w. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| BUFF | 599 | 534 | 416 | 208 | 28 | 607 | 9 | 92 | 70 | 1 | 0 | 0 | 1199 |
| HOME | 22 | 6 | 27 | 30 | 75 | 66 | 0 | 36 | 24 | 2 | 0 | 20 | 51 |
| COME | 10 | 5 | 31 | 151 | 434 | 130 | 16 | 71 | 2 | 21 | 24 | 56 | 218 |
| RBME | 860 | 516 | 328 | 510 | 0 | 2596 | 455 | 4 | 682 | 0 | 0 | 1 | 641 |
| RUDU | c.w. | 0 | 120 | 11 | 0 | 5 | 1 | 3 | 0 | 0 | 0 | 0 | 1835 |
| TUVU | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| BAEA | 0 | 0 | 2 | 1 | 38 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 |
| NOHA | 23 | 4 | 16 | 2 | 1 | 1 | 1 | 4 | 4 | 0 | 0 | 0 | 15 |
| SSHA | 8 | 2 | 13 | 6 | 3 | 6 | 0 | 6 | 1 | 8 | 6 | 3 | 15 |

| species | And. | Athol | B. B. | C. Ann | C. Cod | Conc. | Gr. Bos. | Marsh. | M. V. | Mid-C. | Millis |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cooper's Hawk | 0 | 2 | 1 | 0 | 3 | 6 | 6 | 1 | 3 | 3 | 3 |
| Northern Goshawk | 1 | 3 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| Red-shouldered Hawk | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | c.w. | 1 |
| Red-tailed Hawk | 25 | 8 | 17 | 12 | 10 | 87 | 54 | 15 | 41 | 11 | 33 |
| Rough-legged Hawk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 |
| Golden Eagle | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| American Kestrel | 2 | 0 | 1 | 0 | 3 | 2 | 5 | 0 | 0 | 4 | 3 |
| Merlin | 0 | 0 | 3 | 0 | 5 | 0 | 4 | 1 | 1 | 1 | 0 |
| Peregrine Falcon | 1 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 1 | 0 | 0 |
| Ring-necked Pheasant | 5 | 4 | 4 | 2 | 1 | 31 | 25 | 0 | 3 | 0 | 16 |
| Ruffed Grouse | 6 | 2 | 1 | 2 | 0 | 7 | 0 | 4 | 0 | 0 | 6 |
| Wild Turkey | 0 | 129 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| Northern Bobwhite | 0 | 0 | 5 | 0 | 4 | 2 | 10 | 0 | 0 | 14 | 0 |
| Clapper Rail | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Virginia Rail | 0 | 0 | 1 | 1 | 5 | 0 | 0 | 2 | 1 | 13 | 0 |
| Sora | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| American Coot | 0 | 0 | 33 | 2 | 5 | 109 | 190 | 0 | 39 | 4 | 72 |
| Black-bellied Plover | 0 | 0 | 3 | 0 | 59 | 0 | 1 | 2 | 19 | 0 | 0 |
| Semipalmated Plover | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Killdeer | 0 | 0 | 0 | 2 | 6 | 0 | 1 | 1 | 6 | 1 | 0 |
| Greater Yellowlegs | 0 | 0 | 9 | 0 | 10 | 0 | 2 | 0 | 2 | 16 | 0 |
| Ruddy Turnstone | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| Sanderling | 0 | 0 | 102 | 42 | 206 | 0 | 51 | 1 | 360 | 916 | 0 |
| Purple Sandpiper | 0 | 0 | 2 | 109 | 0 | 0 | 24 | 18 | 2 | 6 | 0 |
| Dunlin | 0 | 0 | 8 | 45 | 654 | 0 | 140 | 485 | 25 | 835 | 0 |
| Common Snipe | 0 | 0 | 5 | 0 | 5 | 1 | 3 | 0 | 6 | 2 | 0 |
| American Woodcock | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 |
| Phalarope species | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| Pomarine Jaeger | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Laughing Gull | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 4 | 0 |
| Little Gull | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Common Bla.-hea. Gull | 0 | 1 | 0 | 0 | 0 | 0 | 9 | 1 | 0 | 0 | 0 |
| Bonaparte's Gull | 0 | 0 | 741 | 83 | 141 | 0 | 1942 | 135 | 310 | 311 | 0 |
| Ring-billed Gull | 239 | 0 | 276 | 170 | 238 | 271 | 4119 | 787 | 310 | 542 | 265 |
| Herring Gull | 729 | 63 | 1565 | 4360 | 2586 | 3735 | 7221 | 3638 | 3100 | 2086 | 1064 |
| Iceland Gull | 0 | 0 | 0 | 4 | 1 | 0 | 3 | 1 | 0 | 0 | 0 |
| Lesser Bla.-bac. Gull | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | c.w. | 0 |
| Glaucous Gull | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Great Bla.-bac. Gull | 88 | 13 | 375 | 1588 | 1521 | 409 | 761 | 578 | 1440 | 590 | 79 |
| Black-legged Kittiwake | 0 | 0 | 0 | 36 | 98 | 0 | 1 | 0 | 72 | 19 | 0 |
| Dovekie | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | c.w. | 0 |
| Thick-billed Murre | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Razorbill | 0 | 0 | 4 | 27 | 551 | 0 | 0 | 16 | 46 | 4 | 0 |
| Black Guillemot | 0 | 0 | 0 | 10 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Rock Dove | 1761 | 455 | 260 | 511 | 77 | 630 | 3966 | 288 | 310 | 285 | 389 |
| Mourning Dove | 363 | 399 | 549 | 361 | 330 | 1229 | 603 | 383 | 500 | 237 | 466 |
| Barn Owl | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 |
| Eastern Screech-Owl | 0 | 0 | 13 | 7 | 2 | 15 | 22 | 16 | 12 | 16 | 4 |
| Great Horned Owl | 0 | 2 | 9 | 7 | 3 | 6 | 7 | 2 | 0 | 14 | 10 |
| Snowy Owl | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 1 | 0 |
| Barred Owl | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Long-eared Owl | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |

| species | Nant. | N.B. | Nbpt. | Ply. | Quab. | Quin. | Stell. | Tau/Mb. | Tuck | Uxbr. | Wstm. | Worc. | Nwp,RI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COHA | 1 | 2 | 4 | 2 | 0 | 4 | 0 | 1 | 0 | 5 | 1 | 2 | 5 |
| NOGO | c.w. | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| RSHA | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 |
| RTHA | 24 | 3 | 69 | 6 | 23 | 15 | 1 | 20 | 2 | 45 | 18 | 31 | 19 |
| RLHA | 0 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| GOEA | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| AMKE | 3 | 0 | 2 | 1 | 1 | 1 | 0 | 3 | 0 | 3 | 0 | 1 | 13 |
| MERL | 2 | 1 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| PEFA | c.w. | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| RNPH | 39 | 1 | 18 | 2 | 16 | 4 | 0 | 0 | 0 | 4 | 4 | 5 | 6 |
| RUGR | 0 | 0 | 8 | 0 | 42 | 0 | 0 | 7 | 0 | 10 | 7 | 6 | 0 |
| WITU | 0 | 0 | 15 | 0 | 197 | 0 | 0 | 0 | 0 | 0 | c.w. | 63 | 0 |
| NOBO | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| CLRA | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| VIRA | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| SORA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| AMCO | 118 | 4 | 76 | 117 | 0 | 91 | 0 | 158 | 0 | 0 | 0 | 39 | 2320 |
| BBPL | 0 | 3 | 6 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 3 |
| SEPL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| KILL | 3 | 0 | 2 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 9 |
| GRYE | c.w. | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| RUTU | 38 | 4 | 0 | 0 | 0 | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| SAND | 138 | 20 | 67 | 27 | 0 | 33 | 13 | 0 | 38 | 0 | 0 | 0 | 132 |
| PUSA | 10 | 7 | 6 | 2 | 0 | 63 | 0 | 0 | 0 | 0 | 0 | 0 | 164 |
| DUNL | 2 | 97 | 57 | 100 | 0 | 17 | 46 | 0 | 8 | 0 | 0 | 0 | 121 |
| COSN | 1 | 0 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 4 |
| AMWO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 |
| Phal. sp | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| POJA | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| LAGU | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| LIGU | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CBHG | c.w. | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| BOGU | 435 | 74 | 18 | 344 | 0 | 807 | 14 | 0 | 81 | 0 | 0 | 0 | 343 |
| RBGU | 68 | 967 | 926 | 489 | 7 | 1287 | 70 | 517 | 15 | 107 | 36 | 2780 | 1620 |
| HEGU | 6555 | 1263 | 6969 | 1657 | 125 | 7286 | 550 | 2151 | 470 | 222 | 1135 | 1792 | 2015 |
| ICGU | 50 | 0 | 22 | 0 | 0 | 3 | 3 | 2 | 0 | 0 | 0 | 1 | 0 |
| LBBG | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| GLGU | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| GBBG | 3468 | 276 | 692 | 310 | 17 | 1398 | 195 | 676 | 175 | 76 | 666 | 581 | 296 |
| BLKI | 41 | 0 | 3 | 2 | 0 | 2 | 75 | 0 | 235 | 0 | 0 | 0 | 1 |
| DOVE | 1 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 0 |
| TBMU | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| RAZO | 27 | 0 | 6 | 83 | 0 | 6 | 415 | 0 | 15 | 0 | 0 | 0 | 11 |
| BLGU | 1 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| RODO | 130 | 224 | 615 | 195 | 140 | 654 | 210 | 200 | 0 | 1181 | 332 | 581 | 613 |
| MODO | 714 | 134 | 647 | 176 | 373 | 155 | 0 | 523 | 0 | 496 | 314 | 503 | 856 |
| BROW | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EASO | 0 | 0 | 25 | 3 | 1 | 8 | 0 | 3 | 0 | 20 | 1 | 7 | 6 |
| GHOW | 0 | 1 | 12 | 0 | 24 | 4 | 2 | 8 | 0 | 15 | 3 | 4 | 7 |
| SNOW | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| BAOW | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 2 | 2 | 1 | 0 |
| LEOW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 |

| species | And. | Athol | B. B. | C. Ann | C. Cod | Conc. | Gr. Bos. | Marsh. | M. V. | Mid-C. | Millis |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Short-eared Owl | 0 | 0 | 0 | 1 | 3 | 0 | 1 | 3 | 1 | 0 | 0 |
| North. Saw-whet Owl | 0 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 |
| *Selasphorus* species | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Belted Kingfisher | 3 | 0 | 14 | 5 | 22 | 6 | 2 | 7 | 14 | 28 | 4 |
| Red-hea. Woodpecker | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Red-bel. Woodpecker | 0 | c.w. | 11 | 0 | 0 | 7 | 1 | 3 | 22 | 3 | 4 |
| Yellow-bel. Sapsucker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | c.w. | 1 | 0 |
| Downy Woodpecker | 83 | 82 | 60 | 39 | 67 | 246 | 197 | 54 | 53 | 100 | 116 |
| Hairy Woodpecker | 12 | 27 | 12 | 4 | 15 | 60 | 15 | 5 | 19 | 10 | 21 |
| Northern Flicker | 2 | 1 | 61 | 20 | 103 | 13 | 47 | 24 | 82 | 54 | 21 |
| Pileated Woodpecker | 0 | 3 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| Eastern Phoebe | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Horned Lark | 16 | 17 | 10 | 32 | 86 | 158 | 31 | 29 | 16 | 28 | 0 |
| Tree Swallow | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 |
| Blue Jay | 380 | 808 | 735 | 403 | 421 | 1116 | 560 | 336 | 210 | 531 | 867 |
| American Crow | 9178 | 504 | 645 | 635 | 495 | 1818 | 1988 | 303 | 1200 | 912 | 741 |
| Fish Crow | 2 | 0 | 0 | 0 | 0 | 0 | 57 | 1 | 0 | 0 | 0 |
| Common Raven | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Black-cap. Chickadee | 562 | 1372 | 1017 | 664 | 1195 | 2389 | 1253 | 572 | 1120 | 1198 | 928 |
| Tufted Titmouse | 134 | 184 | 212 | 170 | 95 | 766 | 318 | 159 | 0 | 110 | 373 |
| Red-br. Nuthatch | 15 | 31 | 10 | 5 | 2 | 17 | 1 | 0 | 2 | 1 | 13 |
| White-br. Nuthatch | 74 | 118 | 58 | 49 | 54 | 345 | 187 | 21 | 110 | 50 | 157 |
| Brown Creeper | 9 | 14 | 7 | 5 | 4 | 17 | 7 | 0 | 2 | 5 | 20 |
| Carolina Wren | 3 | 0 | 200 | 5 | 98 | 25 | 18 | 19 | 75 | 143 | 5 |
| House Wren | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 |
| Winter Wren | 1 | 0 | 10 | 0 | 11 | 0 | 4 | 1 | 6 | 9 | 0 |
| Marsh Wren | 0 | 0 | 4 | 0 | 7 | 0 | 3 | 0 | 0 | 7 | 0 |
| Golden-cr. Kinglet | 4 | 50 | 104 | 20 | 40 | 16 | 11 | 16 | 5 | 42 | 21 |
| Ruby-crowned Kinglet | 0 | 1 | 17 | 1 | 7 | 0 | 4 | 0 | 1 | 5 | 4 |
| Eastern Bluebird | 5 | 7 | 16 | 4 | 0 | 37 | 0 | 17 | 31 | 5 | 57 |
| Hermit Thrush | 0 | 0 | 44 | 1 | 29 | 4 | 6 | 1 | 3 | 29 | 0 |
| American Robin | 10 | 1 | 636 | 428 | 2407 | 319 | 1513 | 626 | 122 | 1111 | 111 |
| Gray Catbird | 0 | 0 | 14 | 0 | 20 | 1 | 4 | 0 | 13 | 9 | 0 |
| Northern Mockingbird | 45 | 6 | 122 | 83 | 111 | 146 | 246 | 96 | 46 | 111 | 88 |
| Brown Thrasher | 0 | 0 | 4 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 |
| American Pipit | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | c.w. | 16 | 0 |
| Bohemian Waxwing | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cedar Waxwing | 8 | 426 | 119 | 55 | 399 | 539 | 47 | 327 | 96 | 208 | 179 |
| Northern Shrike | 1 | 0 | 1 | 2 | 3 | 1 | 0 | 0 | 1 | c.w. | 0 |
| European Starling | 2799 | 2686 | 1356 | 6021 | 1082 | 2322 | 49152 | 5959 | 1600 | 5746 | 5514 |
| Orange-cro. Warbler | 0 | 0 | 2 | 1 | 3 | 0 | 2 | 0 | c.w. | 1 | 0 |
| Nashville Warbler | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Black-thr. Blue Warbler | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Yellow-rumped Warbler | 0 | 1 | 186 | 98 | 771 | 0 | 241 | 134 | 330 | 236 | 3 |
| Pine Warbler | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 2 | 7 | 2 | 0 |
| Palm Warbler | 0 | 0 | 27 | 1 | 5 | 0 | 7 | 0 | 3 | 12 | 0 |
| Northern Waterthrush | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Common Yellowthroat | 0 | 0 | 3 | 0 | 1 | 1 | 1 | 0 | 0 | 2 | 1 |
| Yellow-breasted Chat | 0 | 0 | 4 | 1 | 6 | 0 | 2 | 0 | 2 | 3 | 0 |
| Northern Cardinal | 59 | 52 | 441 | 135 | 319 | 490 | 356 | 116 | 192 | 347 | 134 |
| Painted Bunting | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Dickcissel | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |

| species | Nant. | N.B. | Nbpt. | Ply. | Quab. | Quin. | Stell. | Tau/Mb. | Tuck | Uxbr. | Wstm. | Worc. | Nwp,RI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SEOW | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| NSWO | 1 | 0 | 0 | 0 | 61 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| *Sel.* sp | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| BEKI | 1 | 2 | 2 | 10 | 3 | 6 | 0 | 6 | 0 | 6 | 2 | 6 | 5 |
| RHWO | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| RBWO | 0 | c.w. | 5 | 2 | 0 | 1 | 0 | 1 | 0 | 3 | 0 | 3 | 4 |
| YBSA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| DOWO | 8 | 28 | 155 | 32 | 169 | 69 | 2 | 73 | 4 | 121 | 86 | 115 | 57 |
| HAWO | 0 | 1 | 22 | 6 | 30 | 3 | 1 | 3 | 0 | 24 | 14 | 27 | 5 |
| NOFL | 144 | 14 | 33 | 27 | 2 | 26 | 14 | 21 | 24 | 14 | 1 | 3 | 74 |
| PIWO | 0 | 0 | 1 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 |
| EAPH | c.w. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TRSW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| HOLA | 2 | 4 | 377 | 0 | 0 | 11 | 21 | 109 | 2 | 0 | 0 | 0 | 140 |
| BLJA | 43 | 93 | 812 | 252 | 910 | 196 | 41 | 167 | 11 | 974 | 580 | 570 | 225 |
| AMCR | 558 | 105 | 1100 | 315 | 278 | 483 | 48 | 516 | 22 | 816 | 323 | 567 | 370 |
| FICR | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CORA | 0 | 0 | 0 | 0 | 37 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 |
| BCCH | 196 | 128 | 1856 | 532 | 1586 | 502 | 160 | 439 | 52 | 1300 | 1245 | 811 | 450 |
| TUTI | 0 | 75 | 520 | 116 | 271 | 151 | 0 | 141 | 0 | 523 | 191 | 239 | 69 |
| RBNU | 2 | 0 | 30 | 7 | 63 | 0 | 1 | c.w. | 0 | 4 | 14 | 3 | 0 |
| WBNU | 2 | 29 | 255 | 31 | 272 | 50 | 0 | 53 | 0 | 239 | 142 | 161 | 37 |
| BRCR | c.w. | 1 | 16 | 2 | 30 | 2 | 0 | 6 | 0 | 15 | 9 | 5 | 1 |
| CAWR | 23 | 13 | 5 | 61 | 2 | 22 | 6 | 53 | 0 | 21 | 0 | 7 | 127 |
| HOWR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| WIWR | c.w. | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 4 |
| MAWR | 15 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 3 |
| GCKI | 8 | 2 | 45 | 15 | 150 | 9 | 31 | 7 | 0 | 17 | 19 | 10 | 14 |
| RCKI | 7 | 1 | 1 | 1 | 3 | 7 | 1 | 0 | 2 | 0 | 0 | 0 | 4 |
| EABL | 0 | 7 | 17 | 0 | 34 | 0 | 0 | 41 | 0 | 31 | 22 | 13 | 7 |
| HETH | 4 | 3 | 5 | 12 | 0 | 4 | 1 | 2 | 0 | 1 | 0 | 3 | 12 |
| AMRO | 330 | 45 | 345 | 490 | 31 | 345 | 195 | 163 | 3 | 64 | 11 | 90 | 1863 |
| GRCA | 24 | 1 | 2 | 4 | 1 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 30 |
| NOMO | 35 | 40 | 144 | 50 | 28 | 81 | 10 | 95 | 2 | 92 | 23 | 68 | 222 |
| BRTH | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| AMPI | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 70 | 0 | 0 | 0 | 0 | 2 |
| BOWA | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| CEWA | 225 | 173 | 328 | 370 | 473 | 51 | 2 | 85 | 0 | 175 | 112 | 412 | 217 |
| NOSH | 1 | 0 | 4 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 |
| STAR | 1968 | 4244 | 13029 | 1588 | 1530 | 50000 | 55 | 3779 | 40 | 3350 | 1662 | 5979 | 13694 |
| OCWA | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NAWA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| BTBW | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| YRWA | 1095 | 60 | 227 | 734 | 0 | 154 | 204 | 54 | 163 | 2 | 0 | 1 | 199 |
| PIWA | 3 | 0 | 0 | 1 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| PAWA | 2 | 0 | 1 | 3 | 0 | 5 | 3 | 6 | 2 | 0 | 0 | 0 | 9 |
| NOWA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| COYE | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| YBCH | c.w. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NOCA | 95 | 47 | 197 | 153 | 72 | 81 | 24 | 116 | 9 | 182 | 53 | 89 | 224 |
| PABU | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| DICK | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| species | And. | Athol | B. B. | C. Ann | C. Cod | Conc. | Gr. Bos. | Marsh. | M. V. | Mid-C. | Millis |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Rufous-sided Towhee | 0 | 0 | 19 | 0 | 9 | 0 | 0 | 0 | 27 | 11 | 2 |
| Amer. Tree Sparrow | 110 | 175 | 95 | 83 | 30 | 651 | 446 | 152 | 35 | 56 | 170 |
| Chipping Sparrow | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 17 | 1 | 0 |
| Clay-colored Sparrow | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Field Sparrow | 2 | 6 | 60 | 2 | 18 | 3 | 9 | 6 | 22 | 17 | 31 |
| Vesper Sparrow | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 |
| Savannah Sparrow | 0 | 0 | 116 | 1 | 14 | 13 | 5 | 10 | 26 | 55 | 5 |
| "Ipswich" Sparrow | 0 | 0 | 1 | 3 | 19 | 0 | 0 | 9 | 3 | 4 | 0 |
| Sharp-tailed Sparrow | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 4 | 0 | 2 | 0 |
| Seaside Sparrow | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | 0 | 0 | 0 |
| Fox Sparrow | 0 | 0 | 1 | 0 | 1 | 3 | 5 | 1 | 0 | 2 | 0 |
| Song Sparrow | 32 | 6 | 481 | 91 | 333 | 153 | 390 | 103 | 214 | 487 | 92 |
| Swamp Sparrow | 0 | 1 | 33 | 1 | 46 | 9 | 12 | 21 | 7 | 63 | 7 |
| White-thr. Sparrow | 18 | 13 | 567 | 72 | 284 | 193 | 438 | 114 | 340 | 328 | 46 |
| White-cr. Sparrow | 0 | 0 | 14 | 0 | 0 | 0 | 4 | 2 | 2 | 1 | 0 |
| Harris' Sparrow | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Dark-eyed Junco | 228 | 1339 | 165 | 136 | 6 | 1045 | 1110 | 213 | 66 | 184 | 534 |
| "Oregon" Junco | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lapland Longspur | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Snow Bunting | 0 | 1 | 226 | 70 | 0 | 0 | 115 | 35 | 116 | 133 | 0 |
| Red-winged Blackbird | 1 | 24 | 26 | 2 | 34 | 19 | 11 | 2 | 25 | 188 | 160 |
| Eastern Meadowlark | 0 | 0 | 9 | 7 | 17 | 0 | 0 | 36 | 58 | 48 | 3 |
| Yellow-headed Blkbird | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rusty Blackbird | 0 | 0 | 0 | 0 | 0 | 35 | 0 | 0 | 0 | 4 | 0 |
| Common Grackle | 1 | c.w. | 17 | 3 | 0 | 18 | 4 | 0 | 1 | 10 | 3 |
| Br.-headed Cowbird | 54 | 94 | 15 | 0 | 0 | 30 | 0 | 1 | c.w. | 0 | 1 |
| Northern Oriole | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | c.w. | 0 | 0 |
| "Bullock's Oriole" | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Purple Finch | 12 | 3 | 2 | c.w. | 1 | 15 | 0 | 0 | 0 | 0 | 1 |
| House Finch | 299 | 410 | 984 | 456 | 1153 | 1344 | 632 | 221 | 730 | 1201 | 509 |
| White-winged Crossbill | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| Common Redpoll | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pine Siskin | 1 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 2 | 0 | 0 |
| American Goldfinch | 122 | 327 | 607 | 50 | 389 | 714 | 390 | 150 | 195 | 565 | 324 |
| Evening Grosbeak | 0 | c.w. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| House Sparrow | 861 | 596 | 702 | 1131 | 672 | 1601 | 1975 | 416 | 700 | 1229 | 715 |
| number of species | 57 | 62 | 122 | 104 | 116 | 81 | 122 | 92 | 120 | 126 | 72 |
| total birds | 20422 | 10622 | 26761 | 29111 | 37167 | 29840 | 99876 | 26387 | 29976 | 34841 | 17443 |

| | | |
|---|---|---|
| And. = | Andover CBC | 12/17/94 |
| Athol = | Athol CBC | 12/17/94 |
| B. B. = | Buzzards Bay CBC | 12/17/94 |
| C. Ann = | Cape Ann CBC | 12/18/94 |
| C. Cod = | Cape Cod CBC | 12/18/94 |
| Conc. = | Concord CBC | 1/2/95 |
| Gr. Bos. = | Greater Boston CBC | 12/18/94 |
| Marsh. = | Marshfield CBC | 1/1/95 |
| M. V. = | Martha's Vineyard CBC | 1/2/95 |
| Mid-C. = | Mid-Cape Cod CBC | 12/27/94 |
| Millis = | Millis CBC | 12/27/94 |

95th CHRISTMAS BIRD COUNT, December 17, 1994-January 2, 1995

| species | Nant. | N.B. | Nbpt. | Ply. | Quab. | Quin. | Stell. | Tau/Mb. | Tuck | Uxbr. | Wstm. | Worc. | Nwp,RI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RSTO | 6 | 1 | 0 | 4 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 12 |
| ATSP | 25 | 23 | 525 | 87 | 434 | 177 | 35 | 245 | 1 | 203 | 83 | 238 | 86 |
| CHSP | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 9 | 0 | 1 | 0 | 0 | 1 |
| CCSP | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| FISP | 0 | 7 | 9 | 13 | 0 | 12 | 0 | 103 | 0 | 63 | 0 | 3 | 9 |
| VESP | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SASP | 22 | 6 | 10 | 0 | 0 | 22 | 0 | 21 | 9 | 6 | 0 | 0 | 22 |
| "IP" SP | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 0 | 0 | 2 |
| STSP | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SESP | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| FOSP | 0 | 0 | 2 | 2 | 0 | 2 | 0 | c.w. | 1 | 5 | 1 | 0 | 1 |
| SOSP | 337 | 34 | 184 | 182 | 50 | 146 | 15 | 150 | 85 | 162 | 31 | 57 | 395 |
| SWSP | 30 | 3 | 15 | 18 | 1 | 5 | 3 | 10 | 3 | 3 | 1 | 2 | 41 |
| WTSP | 151 | 111 | 146 | 252 | 48 | 122 | 8 | 48 | 6 | 126 | 10 | 22 | 643 |
| WCSP | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 24 |
| HASP | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| DEJU | 11 | 37 | 426 | 138 | 1095 | 163 | 10 | 355 | 0 | 987 | 517 | 643 | 120 |
| "OR" JU | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| LALO | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| SNBU | 0 | 20 | 85 | 28 | 1 | 96 | 116 | 0 | 42 | 0 | 0 | 0 | 95 |
| RWBL | 96 | 1 | 1 | 15 | 0 | 1 | 1 | 67 | 0 | 209 | 0 | 7 | 157 |
| EAME | 15 | 3 | 5 | 0 | 0 | 6 | 1 | 2 | 10 | 0 | 0 | 0 | 21 |
| YHBL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| RUBL | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 11 | 0 | 1 | 0 | 0 | 0 |
| COGR | 7 | 0 | 1 | 7 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 532 |
| BHCO | 12 | 3 | 0 | 0 | 217 | 0 | 0 | 401 | 0 | 77 | 200 | 35 | 545 |
| NOOR | c.w. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| "BU" OR | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PUFI | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 4 | 2 | 1 | 1 |
| HOFI | 329 | 417 | 693 | 453 | 352 | 451 | 26 | 420 | 0 | 827 | 326 | 595 | 961 |
| WWCR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CORE | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| PISI | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| AMGO | 204 | 56 | 622 | 134 | 664 | 230 | 46 | 149 | 9 | 368 | 372 | 250 | 80 |
| EVGR | c.w. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 |
| HOSP | 296 | 316 | 1468 | 492 | 883 | 828 | 60 | 338 | 0 | 1044 | 614 | 1166 | 559 |
| # species | 112 | 89 | 116 | 95 | 68 | 100 | 73 | 86 | 66 | 69 | 52 | 73 | 120 |
| # birds | 76221 | 14372 | 46483 | 18101 | 13088 | 84072 | 4646 | 15060 | 128694 | 15393 | 9576 | 20821 | 47616 |

Nant. = Nantucket CBC 1/1/95
N. B. = New Bedford CBC 12/17/94
Nbpt. = Newburyport CBC 12/26/94
Ply. = Plymouth CBC 12/28/94
Quab. = Quabbin CBC 12/31/94
Quin. = Quincy CBC 12/17/94
Stell. = Stellwagen CBC 12/17/94
Tau-Mb. = Taunton-Middleboro CBC 12/26/94
Uxbr. = Uxbridge, MA/RI CBC 12/31/94
Wstm. = Westminster CBC 12/26/94
Worc. = Worcester CBC 12/17/94
Nwp. = Newport, RI/Westport, MA CBC 12/17/94

## ABOUT THE COVER: UPLAND SANDPIPER

The Upland Sandpiper (*Bartramia longicauda*) was named after William Bartram, the famous American naturalist whose most important contribution to ornithology was his mentoring of Alexander Wilson, the "father of American ornithology." This sandpiper, which behaves in many respects more like a plover, is an inland species that sadly continues to decline in the east as grasslands and agricultural lands continue to be developed or returned to second-growth forest. Often heard before it is seen, this intricately buffy-brown patterned sandpiper is easily identified by its distinctive silhouette. Long-necked, small-headed, and having a short thin bill, Upland Sandpipers usually keep their wings raised in tell-tale fashion after landing. They often perch on a fence post, rock, or telephone pole, and they fly with shallow, stiff wing beats; they appear long-winged and long-tailed in flight. The sexes are similar in appearance, and juveniles resemble adults but may have a somewhat more scaly appearance at close range. The Upland Sandpiper is monotypic (not divided into subspecies) and is a true sandpiper despite behavioral similarities to plovers. Its upland affinities and behavior have resulted in a number of monikers including "upland plover," "field plover," "prairie dove," and "quailie."

Upland Sandpipers breed from Alaska across the Canadian Great Plains into the agricultural and prairie regions of the western and midwestern United States as far south as Texas. They extend east from the Great Lakes to southern Maine and south to New Jersey and Virginia wherever suitable habitat occurs. They winter on the pampas of Uruguay and Argentina.

In Massachusetts they are uncommon spring migrants that arrive in late April. In the fall they are most common in late August and early September, but rarely are more than a dozen birds reported on a given day.

Upland Sandpipers breed in grasslands, dry meadows, fields, and pastures. In Massachusetts the largest patches of suitable habitat are associated with airports and military facilities. The article by Andrea Jones and Peter Vickery in this issue of *Bird Observer* notes that Westover Air Reserve Base contains the majority of the breeding pairs in the state.

The song of the Upland Sandpiper has been described as "flute-like," and a "sweet, mellow, rolling trill." Its flight note and alarm calls have both been described as *quip-ip-ip-ip*, and its song as a *whooo* or *whee* followed by a protracted *leeeeee* or *looooooooo*. Courtship displays include a spectacular flight where the male ascends until it is a speck in the sky, then descends in wide circles, wings fixed, singing, and finally retracting its wings and plummeting toward the ground.

The nest is a scrape several inches deep, usually in a protective grass tussock or otherwise well hidden. The usual clutch is four cream-colored eggs, spotted with reddish-brown. The species is monogamous, and both parents

incubate. The young hatch in three to four weeks and are precocial—born with eyes open and capable of leaving the nest soon after drying. The young feed themselves but are accompanied by the adults until fledging occurs in four to five weeks.

Upland Sandpipers hunt by sight, and their foraging typically involves short runs followed by a pecking bout when a prey item is sighted. Their diet is more than ninety percent insectivorous, with a wide variety of terrestrial invertebrates consumed. They will, however, eat weeds, seeds, and waste grain following harvest.

Upland Sandpiper populations peaked in the mid-nineteenth century, when most of New England was farmland. They unfortunately became a favorite target of the market hunters in the 1880s about the time when Passenger Pigeons became rare. In the west populations declined as the prairie was converted to farmland, but recovered somewhat as they adapted to agricultural conditions. In New England populations have declined in the twentieth century as farmlands have reverted to woodlots. The Upland Sandpiper is but one of many grassland species that have been seriously declining in the east. With continuing loss of habitat in the United States, continued massive use of pesticides in agricultural areas, and problematic conditions on their wintering grounds in South America, their future is uncertain. One can only hope that these elegant birds will continue to raise their wings aloft on the fence posts of our roadways into the indefinite future.

W.E. Davis, Jr.

### ABOUT THE COVER ARTIST

Barry Van Dusen last provided cover art for the October 1994 issue. He was the illustrator for *A Birder's Guide to Eastern Massachusetts* and *Birds of Massachusetts*. He can be reached at 13 Radford Road, Princeton, MA 01541.

---

## AT A GLANCE *February 1995* _____ *Wayne R. Petersen*

To assist in identifying February's puzzler, it is useful to have a fundamental understanding of general passerine plumage characteristics and plumage acquisition. In general, the majority of North American songbirds wear at least four to six more or less distinct plumages during the course of their lifetime. Variations of this rule are many, however, and often differentiating subtle characteristics between certain plumages can be difficult. Fortunately, the sequence of plumage acquisition is pretty much the same for most species.

When first out of the egg, many nestlings have a soft downy covering. This down covering is rapidly replaced by the first true coat of feathers—the juvenal

plumage. In most species this juvenal plumage is partially replaced during the early fall by a partial molt that normally includes the head and body feathers and often the lesser and middle wing coverts. Although notable exceptions do exist, this generalized molt pattern is how the majority of species acquire their first-winter plumage. When this first-winter plumage differs from that of an adult bird at the same season, the bird is said to be an immature. Technically, the term adult does not apply until the bird acquires a plumage worn exclusively by adults. By this definition, some songbirds (e.g., American Redstart) are still immatures when they are nearly twelve months old because their spring molt into first-summer plumage does not produce a plumage like that of adults.

Eventually, the majority of passerine species will undergo a complete molt in late summer that will ordinarily replace nearly all of the body and wing feathers, thus taking the bird into its adult winter plumage. The following spring, such birds will acquire their adult summer plumage by means of another partial molt of head and body feathers. From then on, most songbirds will have two molts a year: a partial one in spring and a complete one in fall.

Recognizing some plumages, especially juvenal plumages, is often straightforward. Birds in juvenal plumage often display body feathers and wing coverts that are conspicuously streaked, spotted, speckled, or tipped with white or buff. This effect is readily seen in American Robins, Cedar Waxwings, and Chipping Sparrows, as well as in many shorebird species. Eventually these pale markings wear off or the feathers are replaced through molt, thus yielding the first-winter plumage.

The birds in the photo are probably juveniles because they are heavily speckled. Their rather tapered and flattened bills remove sparrows and other seed-eaters as possibilities, while their conspicuous eye rings suggest a flycatcher species. The birds, however, are not postured like flycatchers, and their heads appear too small, and their tails do not seem long and slim enough. And when did you ever see a flock of flycatchers in a bird bath?

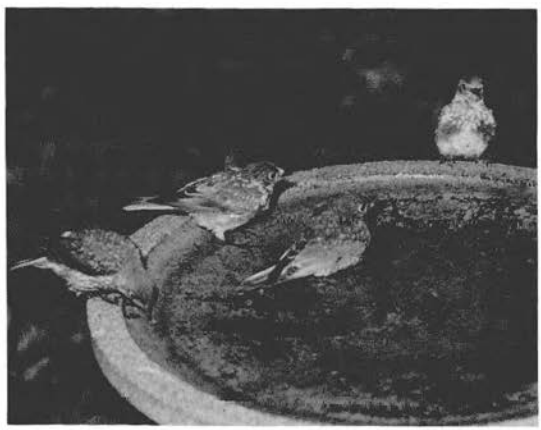


*Photo by Frank H. Wood. Courtesy of MAS.*

The giveaway in the photograph is the bird facing the camera at the right of the picture. Its frontal view reveals the incoming solid color of the breast, white lower belly, small-headed appearance, and upright stance of the beloved American Bluebird *(Sialia sialis)*. The bespectacled and spotted appearance of the juveniles is typical of family groups in late summer.

# AT A GLANCE

*Photo by Deborah Howard. Courtesy of MAS.*

Can you identify this bird?
Identification will be discussed in next issue's AT A GLANCE.


We give avid birders something few binocular and telescope stores can.

Help.

We at the F.C. Meichsner Co. don't just *talk* to our customers about optical equipment. We *listen* to them, too.

And when you've been listening to people for 72 years, you can't help but learn a thing or two.

Like what birders want in a pair of binoculars—and what they don't.

So when you're about ready for a new spotting scope, binoculars, or repairs on equipment you already own, give us a call.

We accept most major credit cards, and we'd be happy to let you do most of the talking.

F.C. Meichsner Co.
182 Lincoln St., Boston, MA 02111
(617) 426-7092

**BIRD OBSERVER (USPS 369-850)**
**462 TRAPELO ROAD**
**BELMONT, MA 02178**

**SECOND CLASS POSTAGE PAID AT BOSTON, MA**

Dec 95

# CONTENTS



Cover Illustration: Upland Sandpiper by Barry W. Van Dusen