

BIRD OBSERVER



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BIRD OBSERVER

• a bimonthly journal •

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and enjoyment of birds.

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The "Where to Go" article scheduled for this issue has been delayed by last-minute editorial difficulties. The article, written by Terry Hall about Vermont's Dead Creek Wildlife Management Area, will appear in the May/June 1997 *Bird Observer*. Area birders will be enticed by Dead Creek's potential for birds such as Ross' and Barnacle goose, Gyrfalcon, Curlew Sandpiper, and Black Tern, and we apologize for the delay in presenting Terry's article.

M.L.P.

IN MEMORIAM: RICHARD ALAN FORSTER

1944-1997

The staff of *Bird Observer* magazine, the natural history community, and numerous friends, admirers, and family members throughout the country suffered a tragic loss with the recent, untimely death of Richard Alan Forster. On April 1, 1997, Dick sustained a fatal heart attack while clearing his driveway of snow during the major April Fool's Day storm.

A passionate birder since childhood, Dick Forster was unquestionably the leading authority on field identification, status, and distribution of Massachusetts birds. His vast knowledge, extensive field experience, and extraordinary memory served him well for the many tasks he so ably performed for over forty years.

Coauthor and contributor to five books, author of dozens of ornithological and entomological magazine and journal articles, regional editor for National Audubon's *American Birds* magazine, and Field Reports editor for *Bird Observer* were among his many contributions over the last quarter-century.

Following graduation from Boston University and a distinguished tour of duty in Vietnam (he was decorated with a Purple Heart and a citation for bravery), Dick joined the staff of Massachusetts Audubon Society as an ornithologist, international tour leader, and Assistant Director of Natural History Services from 1972-1986. Most recently, he was deeply involved in research on the dragonflies and damselflies of Massachusetts, a subject on which he had become a regional authority.

Dick possessed an uncanny ability to locate the inconspicuous and the obscure—and to enthusiastically relish the mundane as well as the exotic. He generously shared his absolute mastery of matters pertaining to field identification. Dick will be sadly missed by all who were privileged to share his wry humor, poignant candor, and extraordinary insight into the natural world. His footprints on the rich legacy of New England natural history are large, and his loss leaves a void that will never be filled.

W.R.P.

WINTER OF THE BUTCHER-BIRD: The Northern Shrike Invasion of 1995-1996

by Wayne R. Petersen and William E. Davis, Jr.

Little did Massachusetts birders realize that the appearance of a Northern Shrike (*Lanius excubitor*) in East Orleans on October 13, 1995, was the beginning of perhaps the most spectacular winter irruption of Northern Shrikes ever in the Northeast. Although the vanguard of Northern Shrike migration does not usually arrive in Massachusetts until late October (Veit and Petersen 1993), the appearance of one shrike on October 13 was hardly reason to suspect that anything out of the ordinary was about to take place.

To underscore the magnitude of the shrike invasion, consider the following:

Between October 13, 1995 and April 27, 1996, a total of 192 Northern Shrike reports appeared in the Bird Sightings column of *Bird Observer* (*Bird Observer* 24:57, 111, 170, 219, 227).

- In describing the winter season in New England, Blair Nikula (1996) noted that Northern Shrikes appeared in "record or near-record numbers everywhere—far too many to tally accurately, but dozens were found in every state and the Regionwide total easily exceeded 300 birds."

- Northern Shrike was one of only 17 species reported on every one of 24 eastern Massachusetts Christmas Bird Counts (CBCs) summarized in *Bird Observer* (24:117), and the 1995-1996 shrike count equaled or exceeded ten-year maxima in 27 of 29 CBC count areas (Table 1).

- CBC Counts for Northern Shrikes included 25 at Nantucket and 19 each at Concord, Greater Boston, and Newburyport.

- 561 Northern Shrikes were tallied on New England CBCs, with this species reported on all but five of 104 CBCs conducted throughout New England in 1995-1996; the average New England CBC total for Northern Shrike over the past 12 years is 62.9 birds (Petersen 1996).

The 1995-1996 incursion far exceeded the boundaries of Massachusetts and New England. In summarizing the 1995-1996 CBC season for North America, Geoff LeBaron (1996) noted that "The highlight of the Christmas Bird Count period, and for the winter in general over many areas of the continent, proved to be . . . [the] Northern Shrike." LeBaron goes on to remark that "Well over 3000 Northern Shrikes were tallied on 727 CBCs in 48 regions across the continent." An incursion of these proportions raises questions about the causes and the biological implications of the event.

What do we know about Northern Shrikes?

The Northern Shrike and the Loggerhead Shrike (*L. ludovicianus*) are the only predatory passerine species in North America. Called "butcher-birds"

Table 1. Numbers of Northern Shrikes reported on Massachusetts CBCs from 1986-1995.

Data from annual compilations by Robert H. Stymeist, and recently by Marjorie W. Rines and Robert H. Stymeist, published annually in *Bird Observer*.

Supplemental data were from published CBC data in *American Birds*. The raw data were not corrected by party-hours, since party-hours have remained fairly consistent during the last decade in most of these counts.

Year	86	87	88	89	90	91	92	93	94	95/96
Andover	-	-	-	-	0	0	0	1	1	1
Athol	1	1	0	0	3	1	0	0	0	3
Buzzards Bay	0	0	0	0	0	0	0	0	1	3
Cape Ann	1	2	1	0	3	1	0	0	2	4
Cape Cod	4	0	0	0	1	0	1	0	3	9
C. Berkshire	0	0	0	0	0	0	0	0	0	2
Concord	2	3	0	2	7	2	1	0	1	19
Boston	0	0	0	0	1	2	0	0	0	19
Greenfield	0	0	1	0	2	0	0	0	0	10
Marshfield	1	1	0	0	1	1	0	0	0	10
Martha's Vineyard	0	0	0	0	0	1	0	0	1	6
Mid Cape	2	0	0	0	0	1	0	0	0	5
Millis	2	1	0	1	3	3	-	0	0	2
Nantucket	2	4	0	0	3	0	0	0	1	25
New Bedford	0	0	0	0	0	3	0	0	0	1
Newburyport	4	3	2	2	4	6	0	0	4	19
Northampton	1	0	1	0	7	1	0	0	0	15
N. Berkshire	2	1	0	0	0	0	0	0	0	2
Plymouth	0	0	0	2	1	0	0	0	0	2
Quabbin	-	-	0	1	5	3	0	0	0	10
Quincy	0	1	0	0	1	1	0	0	0	9
Springfield	1	0	0	0	2	1	0	0	0	2
Stellwagen	-	0	0	0	1	0	0	0	2	2
Taunton-Middleb.	0	0	0	0	0	0	0	0	0	5
Tuckernuck	0	0	0	1	1	0	0	-	0	2
Uxbridge	2	0	0	0	0	0	0	0	0	8
Westminster	2	0	0	0	2	2	0	1	1	4
Westport	2	0	0	0	0	0	0	0	0	4
Worcester	2	1	0	1	2	0	0	0	0	8
Total	31	18	5	10	50	29	2	2	17	111
x/count/year	1.2	.7	.2	.4	1.7	1.0	.1	.1	.6	3.8

because of their habit of impaling mice and small birds on thorns, or hanging them in the crotches of small shrubs, Northern Shrikes subsist largely on small birds and rodents in winter. They use their feet and their powerful bill to catch and subdue prey, which they pursue in a low, direct flight, sometimes actually following a hapless victim into the heart of a thicket or dense shrub (Cade 1967). Ordinarily solitary, Northern Shrikes defend winter territories, at least in certain geographical areas (Atkinson 1993, Rimmer and Darmstadt 1996). They also exhibit nonbreeding site fidelity from year to year, both in winter and possibly during migration (Rimmer and Darmstadt 1996).

During summer, Northern Shrikes are essentially birds of tundra edges and taiga forests. In North America, they breed from western and northern Alaska and southwestern Keewatin south to southern Alaska and northern Manitoba, and from northern Quebec south to central Quebec and southern Labrador. In winter, the species is partially migratory, occurring from central Alaska and the southern parts of the breeding range in Canada south to California, Utah, central New Mexico, central Missouri, central Ohio, Pennsylvania, and New Jersey, casually to areas beyond these boundaries (AOU 1983).

When Northern Shrikes appear in Massachusetts, they are most likely to be seen in coastal dune thickets or in fields, scrub areas, and open swampy situations where scattered trees and shrubs provide elevated perches. They also regularly appear around semirural bird feeders, where they are attracted by concentrations of songbirds (Davis 1997, Williams 1987). Most sightings occur from November through March, particularly along the coast and in inland river valleys (Veit and Petersen 1993).

Northern Shrike invasions: an historical perspective

Northern Shrike incursions in the Northeast have been documented since the nineteenth century (Stone 1937, Cruickshank 1942, Palmer 1949, Bull 1964, Griscom and Snyder 1955, Leck 1983, Zeranski and Baptist 1990, Veit and Petersen 1993). In Massachusetts and New England, the last major shrike invasion was during the winter of 1978-1979, when at least 100 birds were reported from eastern Massachusetts (Veit and Petersen 1993). During the same winter, 60 Northern Shrikes were tallied on 18 eastern Massachusetts CBCs, and a cumulative total of 201 was registered on a total of 85 New England CBCs—the highest regional tally ever recorded up to that time (Veit 1979).

Cade (1967) first pointed out that Northern Shrikes wintering in the northeastern United States probably emanate from the breeding population *L. e. borealis* east of Hudson Bay, not from the population *L. e. invictus* in Alaska, where much of the Snowy Owl and microtine rodent research has been conducted. This fact alone may explain the lack of congruence between the fluctuations of shrikes, owls, and rodents all across North America. In most winters, what happens to Northern Shrike numbers in the Pacific Northwest or

the northern Rocky Mountains probably has little to do with what is happening in the Great Lakes region or the Northeast. This amplifies the continentwide dimension of the shrike invasion in the winter of 1995-1996 because CBC records (*Field Notes* 50:352) show that unprecedented numbers of shrikes were recorded in the Pacific Northwest, the Middlewestern Prairies, the Great Lakes region, and New York, as well as in New England.

Explanations of Northern Shrike invasions

The Northern Shrike is a classic winter irruptive species that shares some characteristics with other irregularly migratory northern predators like Northern Goshawk, Rough-legged Hawk, Snowy Owl, and Boreal Owl, as well as many irruptive passerines such as Red-breasted Nuthatch, Bohemian Waxwing, and Pine Grosbeak (Forster 1990, 1994; Davis and Petersen 1995). There is evidence suggesting that irruptions (i.e., "invasions") may be caused by severe and widespread food shortages in traditional wintering areas (Bock and Lepthien 1976).

Various authors have tried to explain the winter emigrations of Northern Shrikes (e.g., Davis 1937, 1949, 1960, 1974; Cade 1967; Davis and Morrison 1988; Atkinson 1993; Temple 1995), and most have arrived at generally similar conclusions. Brewster (1906), Davis (1937), and Bent (1950) were among the first to highlight the variability in winter shrike numbers and to suggest that the winter emigrations of Northern Shrikes might be controlled by winter food availability, particularly small birds and mammals, in the north. Between 1900-1970, Davis (1937, 1949, 1960, 1974) investigated the cyclic nature of Northern Shrike and Snowy Owl irruptions in eastern North America and tried to establish a link between fluctuations in microtine rodent (i.e., vole) populations and those of shrikes and owls.

Using Christmas Bird Count and other data, Davis (1974) demonstrated that the appearance of shrikes in the United States during winter was cyclic and that variations in emigration years ranged from an average of 3.3 years prior to 1893 to 4.1 years from 1900 until about 1935. After 1935, the emigration cycle for Northern Shrikes fluctuated irregularly (Davis 1974, Root 1988). Davis' conclusion was that Northern Shrikes and Snowy Owls probably emigrate for slightly different reasons and at varying yearly intervals. Furthermore, he concluded that the use of CBC data to establish cyclic periodicity and correlations between events and species is probably not feasible because we lack information about where, exactly, invading birds come from (Davis and Morrison 1988).

Small mammal populations affect the survivorship of young shrikes most strongly after the onset of winter. Microtine rodent density apparently has little effect on either the breeding density of shrikes or the survivability of young shrikes on the breeding grounds immediately after fledging (Cade 1967). In

years of typical early winter weather, shrikes feed predominantly on microtines during fall and early winter. However, in seasons with heavy, early snowfall, small rodents are concealed beneath the snow and hence largely immune to predation by Northern Shrikes. Under such conditions, shrikes, particularly the inexperienced young of the year, are forced to hunt small songbirds, which are considerably more difficult to capture than microtine voles, and most of which have migrated south (Cade 1967).

During the late fall and early winter of 1995, exceptionally severe conditions prevailed across much of central and eastern boreal Canada—the traditional winter quarters of many Northern Shrikes (see *Field Notes* 50, No.2). These severe early winter conditions probably forced shrikes to compete for a songbird prey base diminished by the migration of most songbirds with the early onset of harsh winter weather. Voles, no matter how abundant, would have been unavailable to shrikes because of deep snow. This probably led to massive numbers of Northern Shrikes, many (most?) of them first-year birds, moving south of the Canadian border to avoid the intense competition farther north, where food may have been both scarce and inaccessible.

Biological implications

An inevitable question raised by winter shrike irruptions is what effect they have on the overall survival of Northern Shrike populations. Temple (1995) has proposed that "shrike populations are limited primarily by the carrying capacity of their nonbreeding habitat." This implies that poor food supplies or other conditions in the nonbreeding (i.e., wintering) habitat contribute to keeping the next year's breeding population below the carrying capacity of the breeding habitat. Cade (1967), working in Alaska, reached a similar conclusion: "There is little to suggest that the sparse breeding population in arctic Alaska is limited by any physical or biotic feature of this northern environment. The main limiting factor on numbers of shrikes is probably winter food shortage—or the relative unavailability of foods in winter."

Given the importance that winter conditions apparently have for shrike populations, invasions such as that of 1995-1996 raise significant biological questions: what is the survivorship of the many shrikes that emigrate southward in winter? How successful are they in avoiding the competition that may have forced them to flee boreal Canada in the first place? What is the foraging success of shrikes beyond the borders of their traditional wintering range during an invasion winter? To gain insight into these and other questions, we need to patiently sit back and wait for the next "winter of the 'butcher-bird'."

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Using Christmas Bird Counts to Track Population Trends of Four Frugivorous Passerines

by Thomas R. Hamilton

Christmas Bird Counts (CBCs) are a systematic annual survey of winter bird populations, conducted in set geographical areas during a two-week period before or after Christmas. Each count area is a circle fifteen miles in diameter that is surveyed during a twenty-four hour period by teams of observers in cars, on foot, or in homes with bird feeders. Participants identify and count all birds encountered in their assigned areas and report their results to compilers who, in turn, collate the data, summarize field conditions, and report the numbers of observers, parties, and feeders that were watched. Compilers calculate the number of hours spent in the field and miles traveled by foot or car. One party in the field for one hour is called a "party-hour"; a "party-mile" is one party traveling one mile. The National Audubon Society publishes the results of over 1500 North American, Central American, and Caribbean CBCs in *Audubon Field Notes*.

Methods

CBCs, which began in 1900, represent a wealth of data and can be a valuable tool in tracking long-term changes in bird populations and distribution. However, these data cannot be used without some consideration of their obvious weaknesses: the effort and skill of observers may not be consistent from year to year; the number of count participants varies; and weather conditions can skew the probability of some species being sighted (Berry 1992). For those species that regularly visit feeders, inclusion of feeder-watch data in the total counts can introduce a bias (Dunn 1995). Because of the competitive nature of CBCs and participants' emphasis on having a high species total, rare birds may be over-reported while abundant species may be under-reported. (Participants sometimes "scout out" rare birds so that they will be easier to find on the day of the count, and it is a hardy birder who will stand in a cold winter wind to count a flock of starlings.)

But the strength of CBCs lies in the fact that many areas have been surveyed for many years. In an important validation of the utility of CBCs, Butcher et al. (1990) found that population trends for seven species estimated from CBC data could also be estimated from much more carefully controlled Breeding Bird Census data. The researchers concluded that as long as CBC data are reasonably well standardized, long-term trends can be reliably demonstrated in spite of year-to-year variation. However, the many variables in CBCs must be normalized so that counts can be compared from year to year and from area to area. Bock and Lepthien (1974) and Root (1988) suggested that CBC data

should be normalized to birds counted per party-hour. A previous study applying this method to Eastern Massachusetts CBCs has appeared in this journal (Hamilton 1994).

In this article, I will examine long-term winter population trends for four species common in Massachusetts: American Robin (*Turdus migratorius*), Northern Mockingbird (*Mimus polyglottos*), Northern Cardinal (*Cardinalis cardinalis*), and Cedar Waxwing (*Bombycilla cedrorum*). In order to compare inland populations with coastal populations, I collated data published in *Audubon Field Notes* between 1956 and 1996 for four inland count areas (Springfield, Northampton, Central Berkshires, and Worcester) and four coastal areas (Cape Ann, Cape Cod, Marshfield, and Quincy). I chose these count areas because they have been surveyed consistently (with very few exceptions) for at least forty years and are fairly representative of coastal and inland habitats in Massachusetts.

In order to make year-to-year and region-to-region comparisons meaningful, I calculate the numerical value, "birds/party-hour," by dividing the total number of each species reported on each count by the total party-hours. I then calculated the mean number of birds per party-hour for the combined four inland counts and four coastal areas.

Discussion

The American Robin offers a fine illustration of the strengths and limitations of CBC data. Although reports of a few hardy robins wintering in Massachusetts date back many years, during the last few years their numbers on the coastal CBCs have increased dramatically (Figure 1). Inland counts, meanwhile, have shown at most a slight increase. Veit and Petersen (1993) suggest that large flocks of robins may suddenly appear on the coast after midwinter snowstorms, presumably driven to the coast by the storm. To test the hypothesis that this phenomenon has distorted CBC data, I tried to find a relationship between spikes in coastal robin numbers and inland snow cover reported by CBC compilers. A review of weather reports from all eight CBCs from 1975 to 1995 showed no apparent correlation between inland snow cover and robin abundance along the coast.

Despite the many uncontrolled variables, the very strong upswing in coastal robin numbers suggests that a real change in the habits of this species is taking place. Interestingly, an analysis of twenty-eight years of Breeding Bird Survey data indicates that the number of robins breeding in Massachusetts has actually declined at the rate of one percent per year (Sauer et al. 1996). So it appears that more of our breeding robins are lingering along the coast in the winter, or that migrants are wintering there in increasing numbers. Though a number of factors could contribute to this shift, one likely cause would be an increase in food supplies.

Food supply has been convincingly tied to the rapid increase of cardinals and mockingbirds in our region between 1955 and 1975. The range expansion of these formerly southern species has been well documented (Derrickson and Breitwisch 1992, Hill and Hagan 1991), and CBC data confirm that they are now well-established residents of suburban areas of Massachusetts (Figures 2 and 3). Stiles (1982) correlates the northern expansion of mockingbirds with the spread of the naturalized ornamental multiflora rose (*Rosa multiflora*) and describes the importance of the fruit of this plant as a mockingbird food source. A study of the effects of increased backyard bird feeding (Hughes 1989) suggests that feeders have also contributed to the success of these two birds; the cardinal, particularly, relies heavily on seeds in winter.

During the last twenty years, the rate of increase of these two birds appears to have slowed and perhaps reached a plateau. So the CBC data produce an S-shaped population growth curve that is consistent with what one would expect for species that have gone through a period of rapid growth but are now stabilizing. The pronounced spike followed by a sharp drop in inland cardinal populations between 1967 and 1970 is curious; CBC results tell us nothing about what might have caused such a spike.

Some species, such as the Cedar Waxwing (Figure 4), occasionally appear in large numbers during winter in either coastal or inland areas. Such "irruptions" are believed to result from seed crop failure in high-latitude trees on which waxwings feed (Bock and Lepthien 1974). CBC data from the last twenty years suggest that more Cedar Waxwings may be overwintering in Massachusetts; however, the data are erratic, making long-term trends difficult to discern. In some (but not all) years, Waxwing peaks coincide provocatively with peaks in other species, especially robins; but the numbers of this species in our region may be determined in part by large-scale changes in climate or vegetation, permitting waxwing counts to shift in ways unrelated to populations of resident birds with similar diets.

It is noteworthy that, for robins and mockingbirds, coastal CBC numbers are consistently higher than inland results. One cause might be our slightly milder coastal climate, moderated by the proximity of the ocean. Also interesting is the relative abundance of these four birds, which perhaps reflects their life-histories. Robins, highly gregarious in winter, are the most numerous. If CBC counters don't consistently visit the particular areas in which robins are concentrated, the habits of this species may also be reflected in the year-to-year volatility of recent counts. By far the least numerous of the four species is the mockingbird, which remains territorial and fairly solitary through the winter. Finally, it is worth noting that inland and coastal numbers of all four species seem to change in parallel, which suggests that regionwide conditions, as well as differences between coastal and inland areas, influence the winter populations of these birds.

Figure 1. Robins per Party-Hour, 1955 to 1995

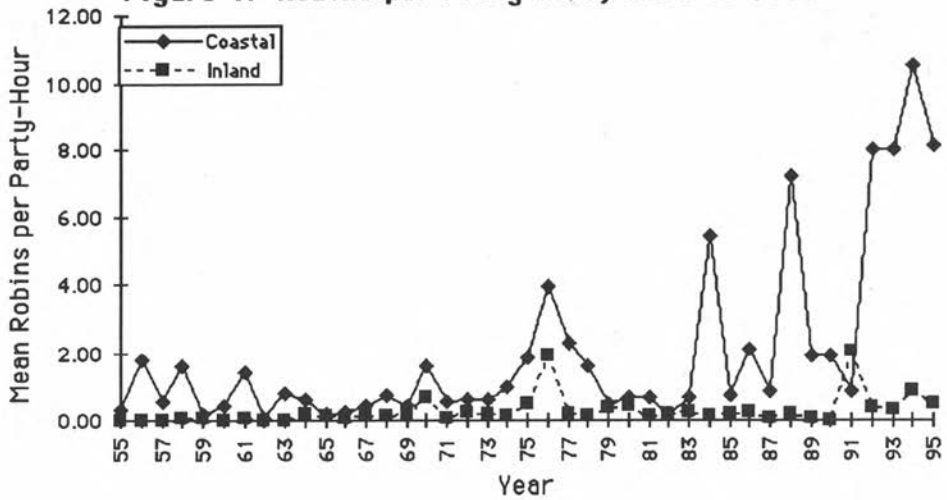


Figure 2. Mockingbirds per Party-Hour, 1955 to 1995

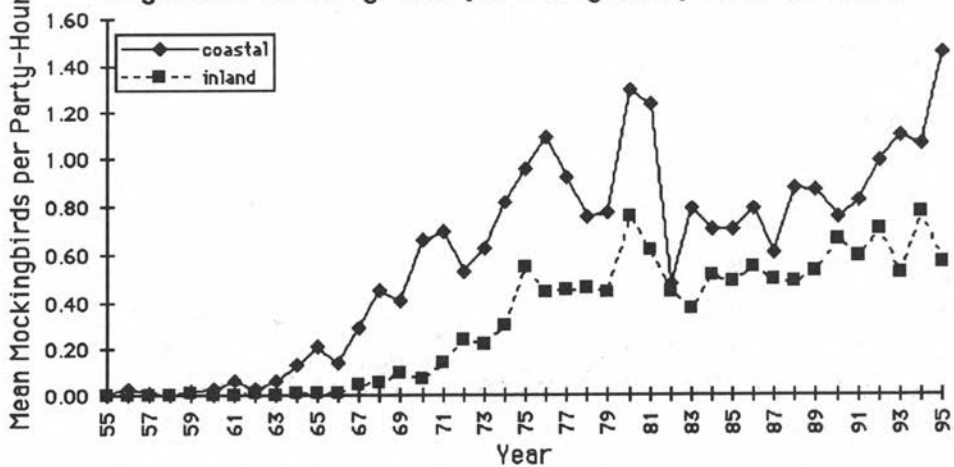


Figure 3. Cardinals per Party-Hour, 1955 to 1995

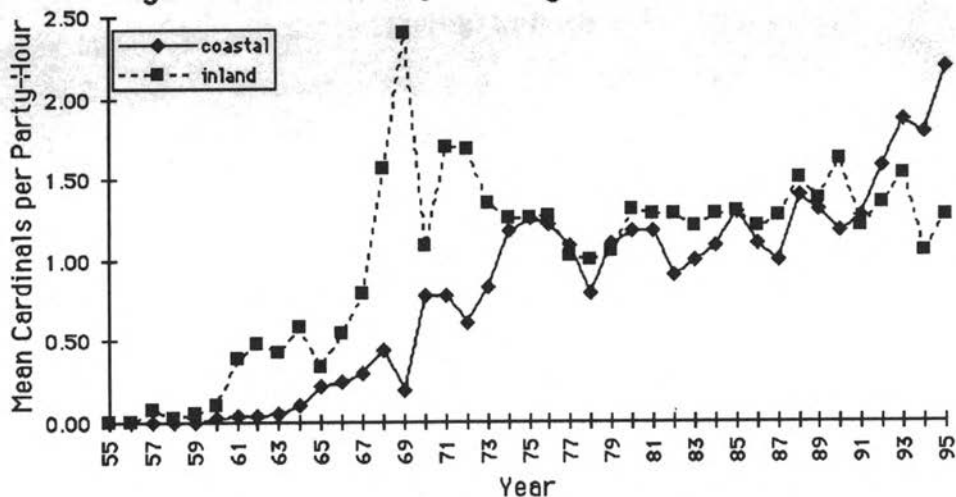
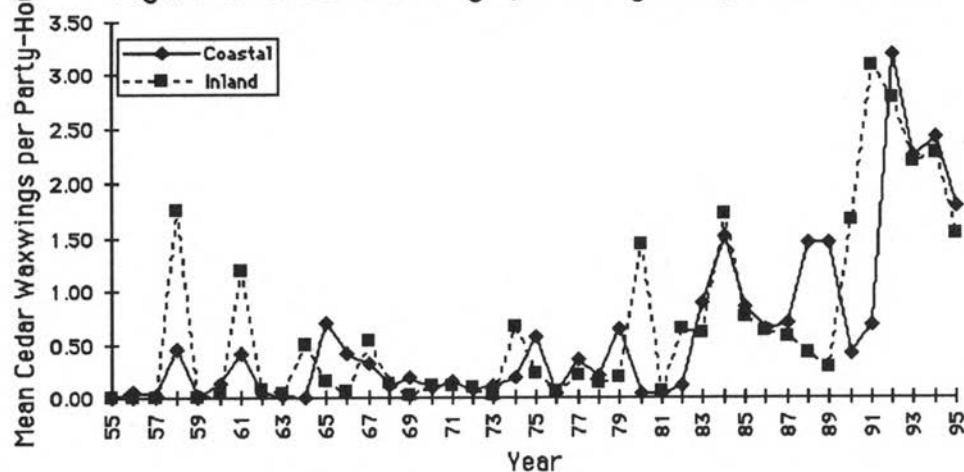


Figure 4. Cedar Waxwings per Party-Hour, 1955 to 1995



Conclusion

This study of CBC data confirms that winter populations of robins, mockingbirds, and cardinals have increased dramatically in Massachusetts over the last few decades. The rapid increase in these species coincided with a period of rapid home construction in suburban towns, especially in the eastern part of the state. Areas that were woods or open fields are now a predictable patchwork of trees and ornamental shrubbery. It is possible that fruit-eating birds greatly benefit from this habitat change. Although robins are often thought of as eating worms and insects, in winter they are largely frugivorous (Willson 1994). Witmer (1996), studying the gut contents of robins and Cedar Waxwings, found that both species readily make use naturalized fruit-bearing plants. It is possible that backyard feeding stations offer a supplemental food source for these birds, as they do for seed-eating birds.

Clearly, changes are taking place in the avifauna of Massachusetts. These change can only be meaningfully monitored through the regular collection of data over many years. Systematic surveys, such as CBCs and Breeding Bird Surveys, are an invaluable source of data on bird populations; without these surveys, and the dedication of those who participate in them, we would have only sketchy, anecdotal evidence of changes over the years.

Of course, additional research is needed to determine the causes of these changes and the factors that limit populations. Human development and landscaping habits appear to be part of the story. But could decreased use of pesticides be a factor? Or could the expanding ranges of mockingbirds and cardinals, and the increasing number of wintering robins be an early response to long-term climatic change?

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Book Review: *The Nature of Massachusetts*

by Mark Lynch

The Nature of Massachusetts by Christopher Leahy, John Hanson Mitchell, and Thomas Conuel. 1996. Boston, MA: Addison-Wesley. (Pages?), illustrated. \$40.00 (hardcover).

If you live and bird in Massachusetts, you know the importance of the Massachusetts Audubon Society. We've all visited an M.A.S. sanctuary, taken one of the Society's field trips, or called the Voice of Audubon. The M.A.S. blue and white triangle logos are as common on passing cars as gulls are in Gloucester Harbor. 1996 marked the Society's centennial year, and this volume was published as part of the celebration. This book has to be one of the most all-encompassing volumes on the wilds of our state ever published. It could easily have been a dry recitation of facts and figures, but instead this book entertains, surprises, and inspires, brilliantly fusing the scientific and the aesthetic.

The opening chapter sums up the history of the Massachusetts Audubon Society, starting with the lives of Minna B. Hall and Harriet Hemenway and ending with Jerry Bertrand and the creation of the Center for Biological Conservation in 1993. The next section, "Rooms in the House of Nature: a Guide to the Natural Communities of Massachusetts," forms the bulk of the book. Introducing this section, the authors gently throw a gauntlet down to many natural history enthusiasts, admonishing the "stamp collector" approach to nature that has trapped many birders (or butterfly-watchers, etc.). We have become experts in narrow fields, having lost knowledge and even interest in the rest of the wealth of our natural heritage:

More that a few promising naturalists have gotten so stuck on birds, for example, that while their life lists grow and their keenness ever sharpens, they remain forever oblivious to the delights of whales and alewife runs—to say nothing of tway blades, hairstreaks and mudpuppies. (p. 24)

We have all been guilty of this, especially in the heat of the pursuit of some rarity. How many of us can name the butterflies or damselflies that pass as we search for some species of bird near a wooded pond? Can you name most of the plants listed by the state as endangered? How many of us can name the obligate species of a vernal pool? Addressing this shortcoming leads to Massachusetts Audubon's mission to promote what the authors call "environmental literacy." At the fundamental level, this means recognizing the different habitats that are found around us and knowing at least the common organisms that inhabit those spaces. (It is humbling to realize that birds species are a small minority.) Gaining environmental literacy will help us understand the complexity and interrelatedness of ecosystems, as well as the need to preserve these

environments. But beyond this political end, the aim of the authors is to help us regain some of the awe and wonder that many of us felt for the natural world when we were children.

Each chapter in this section describes one type of natural community, and the chapters are arranged to suggest an imaginary trip from Stellwagen Bank west to Mount Greylock in the Berkshires. Some of these communities are familiar to birders: if you've birded Plum Island of Fort Hill, then you've seen a saltmarsh. But do you know what makes this habitat tick? What non-avian species are found there? Other communities hold even more surprises for birders—like the calcareous fen, for instance.

The authors explain clearly how each habitat works and what makes this place unique. Each chapter ends with a list of "indicator species" for each community: plants and animals strongly associated with each place. Depending on the community, indicator species might include trees, shrubs, ferns, wildflowers, grasses, sedges, crustacea, mollusks, dragonflies, beetles, flies, fish, reptiles, amphibians...and, of course, birds. Each chapter also explains the distribution of the habitat in the state, describes its conservation status, lists several examples to visit, and ends with a concise bibliography. It is no exaggeration to say that *The Nature of Massachusetts* is the textbook for environmental literacy for this state.

The writing is always interesting with a somewhat chatty and casual tone. Yet the book never loses sight of the hard science behind our understanding of natural communities. Each chapter seems determined to create in the reader a desire to go immediately and see these places firsthand. This is accomplished by writing that conveys a veritable sensual portrait of each habitat:

Anyone who lives near these seadrowned prairies has internalized a host of indelible impressions: canoeing into the silent heart of the marsh via a meandering creek; squadrons of tree swallows hawking for mosquitos in August; a snowy owl perched on a hay straddel in January; an unmistakable sweet tang in the nostrils; the dawn song of the seaside sparrow; the surprisingly painful bite of a greenhead fly; catching mummichogs with a dip net; watching a merlin plunge into a mixed flock of shorebirds; the mechanical jousting of fiddler crabs; the October scarlet of samphire... (p. 63)

It would take a jaded birder to read that passage and not feel an impulse to pack up scope and binocs and head post haste to Nauset Marsh.

A final chapter is titled "Wildlife Sanctuaries of the Massachusetts Audubon Society." This section offers thumbnail sketches of the habitats, plants, and animals found in each sanctuary and gives good directions to each spot.

The frosting on this very rich cake is, of course, the superb watercolors and pencil sketches by Lars Jonsson that generously pepper the book. Jonsson visited Massachusetts several times specifically to execute these illustrations.

During these extended visits, Chris Leahy and company dragged Jonsson hither and yon across the state so he could create these wonderful illustrations *in situ*. There is plenty of good nature photography around, so the use of hand-done artwork is a pleasant surprise. Jonsson's watercolors convey a sense of the ephemeral; much of the work has a quiet, intimate feel, which dovetails nicely with the personal style of the writing. The paintings are clearly the result of direct observation of these natural habitats, not just studio painting. It's this palpable sense of the personal experience of nature, combined with the immediacy of the watercolor medium, that gives Jonsson's work its appeal.

For those familiar only with Jonsson's bird illustrations, this body of work is a revelation. Here he renders subjects as diverse as a Northern Lobster, a Marbled Salamander, and Blunt-lobed Hepatica. But it is his landscapes that especially surprised me. Jonsson's mastery of light and technique places him firmly in the tradition of the great American watercolorists like Winslow Homer and John Singer Sargent. Many of the larger compositions achieve an almost impressionistic style: the background of a Northern Harrier becomes an abstraction of color; a dark and somber timber rattlesnake is perfectly set off by the brilliant yellows of a few fall leaves and some green fern fronds; a curling wave is done with such attention to subtleties of grays and greens that you half expect to hear the crash against the shore.

Of course, there are numerous birds: a preening Greater Yellowlegs in a saltpan; a singing Grasshopper Sparrow in a rank field; three Whimbrels in flight over a hazy barrier beach; a meadowlark, its breast orange-yellow against the less riotous green of a meadow. Because these works were all painted in Massachusetts, there is a sense of recognition: these are locations we know through birding, but we see them freshly through the eyes of the artist.

Fine writing and superb artwork combine to make *The Nature of Massachusetts* more than just another coffee table book. This is a reference book that is also a feast for the eye, heart, and mind—a primer on the beauty, wonder, and complexity of the natural world in our own backyard.

Mark Lynch is an instructor and environmental monitor at the Broad Meadow M.A.S. in Worcester. He also teaches at the Worcester Art Museum and does a radio program on the arts and sciences, called "Inquiry," on WICN radio.

KILLDEER NEST ON GRAVEL ROOFS OF OFFICE BUILDINGS IN CANTON, MASSACHUSETTS

by William E. Davis, Jr., and Craig Armstrong

Killdeer (*Charadrius vociferus*) have expanded their range in North America during the twentieth century and have invaded urban areas, where they sometimes nest on the gravel roofs of buildings. The earliest report of roof-nesting was by Pickwell (1925), who described Killdeer nesting on the roof of a racetrack grandstand at the Fair Grounds near Lincoln, Nebraska. Since then, reports have documented roof-nesting behavior for Killdeer through most of their range, e.g., California (Abbott 1944, Stoner 1937), Arizona (Demaree 1975), Maryland (Beaton 1947, Walbeck and Oring 1966), Virginia (Wass 1974), Ohio (Dexter 1979), Kentucky (Larson 1973), and South Dakota (Giegling 1979). In five Canadian provinces from Saskatchewan to New Brunswick, 34 of 852 roofs sampled (4 percent) had nesting Killdeer (Ankney and Hopkins 1985). Fisk (1978) reported Killdeer nesting on roof-tops "east to New England," and roof-nesting has apparently occurred in Massachusetts at Tantasqua Regional High School in Brookfield in the early 1980s (B. Blodget, pers. comm.) and at the Hanover Middle School in the 1970s (W. Petersen, pers. comm.). We have, however, found no published record documenting roof-nesting in Massachusetts. We report here roof-top nesting by Killdeer at the Neponset Valley Industrial Park, located at 480 Neponset Street in Canton.



Figure 1.

Roof-tops provide the flat, open, gravelly setting that this widespread and common plover prefers for nesting. Such sites are generally rare at ground level in densely developed areas; therefore, roof-tops represent "islands" of suitable nesting habitat in locations otherwise unattractive to Killdeer, and it seems possible that a willingness to nest on top of buildings is part of the reason behind the incursion of this species into the urban areas. Moreover, roof-tops probably provide freedom from many mammalian predators and human disturbance—hazards to which this ground-nesting bird is otherwise vulnerable.

However, roof-top nesting concomitantly creates new perils for Killdeer. For one thing, eggs sometimes fail to hatch because of extreme temperatures attained by asphalt roofs (Giegling 1979). Further hazards stem from the fact that adult Killdeer do not feed their young (Jackson and Jackson in press). (The chicks are precocial, able to run and feed themselves almost from the moment of hatching.) Killdeer are opportunistic foragers but eat mostly terrestrial invertebrates, including earthworms, beetles, and snails. These foods are not generally available on roof-tops, although lights may attract flying insects at night, and air conditioning units may provide puddles of water. Hence, young Killdeer will starve to death if they don't get to the ground where they can forage (they hatch with energy reserves sufficient for about two days).

In one study (Demaree 1975), the chicks left the roof either on the first day after hatching or on the second. Jumping onto hard surfaces may be lethal to young birds, although chicks are known to have survived falls of 6.8 meters (Demaree 1975), and two chicks survived the jump from the roof of a seven-story building (Jackson and Jackson in press). If they land in tall grass or bushes, their chances of survival are considerably enhanced. Roofs with parapets are particularly hazardous for young Killdeer, since the parapets may prevent them from jumping from the roof (Wass 1974). In one Mississippi case, an adult Killdeer called at the base of a downspout of a gutter complex on the roof. The chicks leapt from the gutter into the downspout and slid to ground level (Schardien 1981)!

Roof-nesting in Canton, MA

Craig Armstrong first noticed Killdeer calling from the roof-top of the building in which he worked in the spring of 1992, and in April 1993 found a nest on the gravel roof. Both authors gained access to the roof by fork-lift truck, and Craig photographed the adults and four young. The following day, adults were on the ground calling and repeatedly flew to the edge of the roof where the young were standing. The young were hesitant to jump from the roof, and Armstrong took part in herding the young off the roof. The four young fell about 20 feet to the asphalt parking lot, but only one appeared to have been injured. The other three appeared normal (Figure 1), although it was difficult to tell with certainty because the young birds crouch and freeze when alarmed.



Figure 2.



Figure 3.

Killdeer were heard calling from the roof in the spring of 1994 and 1995, but no nests were found. In 1996, Killdeer were spotted on April 22 on a gravel-top roof on an adjacent building visible from Craig's office. The nest, with at least two eggs, was discovered by spotting scope, and during the following two days the Killdeer incubated throughout the day. On April 24, Davis was hoisted by fork-lift to the roof, where he photographed the nest and four eggs (Figures 2 and 3). The incubating bird (Figure 4) left the nest and gave a distraction display as Davis appeared over the edge of the roof. About a week later, the nest was lost to a predator, probably a crow that was frequently observed flying over the roof and foraging in the dumpster beside the building.

Killdeer apparently prefer to include white material (e.g., gravel) in their nests (Kull 1977), and this is evident in Figure 2. White material, which reflects sunlight, may aid in thermoregulation in exposed nests, or in cryptic coloration. Killdeer have disruptive color patterns (head and breast patterns disrupt the Killdeer's outline), and the white nesting material may help to make an incubating bird more cryptic. Schardien (1981) suggested that Killdeer may be attempting to prepare a mottled substrate to camouflage their eggs, which are cryptically patterned (Figures 2 and 3). It is also apparent in these photographs that the nest is located along a highly mottled part of the slightly pitched gravel roof. Nest site preference for mottled background has been noted in the Least Tern (Jackson and Davis in press), and may be important for Killdeer too.

Killdeer are at least seasonally monogamous (some individuals in southern populations may mate for life). There is some evidence of natal philopatry (young birds returning to breed near where they were hatched), and studies of banded birds have demonstrated some breeding site fidelity in adult birds



Figure 4.

(Jackson and Jackson in press). This may be the case for the Killdeer nesting in Canton, which have presumably nested on building roof-tops each year since at least 1992.

There is little solid information about the extent of roof-top nesting by Killdeer in New England. The authors would be interested in receiving reports of Killdeer observed, or documented as nesting, on gravel roofs. Killdeer usually arrive and begin nesting in Massachusetts by late April. With an incubation period of up to a month, roof-top nesting Killdeer should be looked for from about mid-April through May, or even later for birds that reneest. Please send a report of any roof-top sighting or confirmed roof-top nesting to: William E. Davis, Jr., c/o BOEM, P.O. Box 236, Arlington, MA 02174. Thank you for your help.

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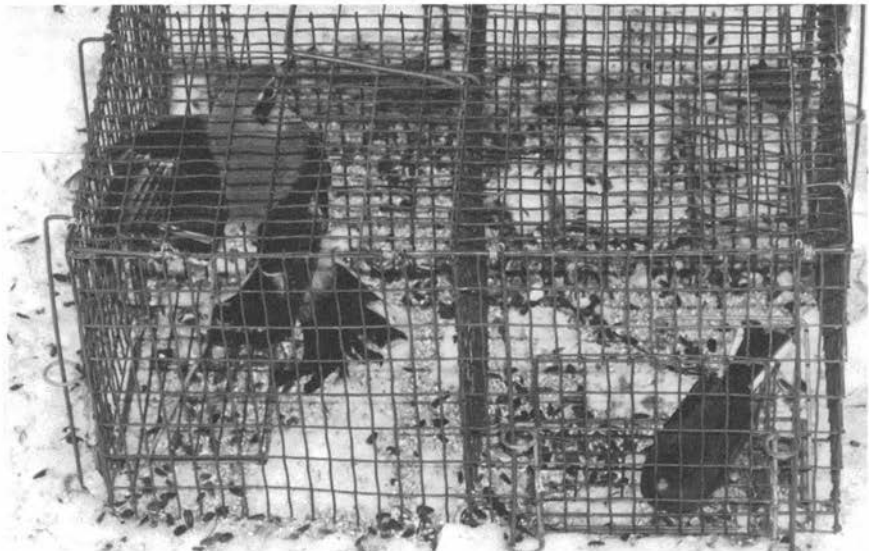
The authors would like to thank Marta Hersek, Jerome and Bette Jackson, John Kricher, and Wayne R. Petersen for reviewing earlier drafts of the manuscript.

FIELD NOTES FROM HERE AND THERE

Hungry Northern Shrike Trapped

On December 29, 1995, while banding birds at my home in Foxboro, Massachusetts, I inadvertently baited and trapped a Northern Shrike. At 2:55 P.M. I noticed from my kitchen window that a Dark-eyed Junco had been caught in one cell of a four-cell Potter Trap which was on the snow-covered ground. When I went out to retrieve the junco and band it, I found a Northern Shrike fluttering on the sides and top of the trap-cell which contained the junco. When I had approached to a distance of twelve feet, the shrike flew to low perch in a yew four feet from the trap. I walked back to the house and from the kitchen watched the shrike again attempt to attack the junco. After about four minutes, the shrike entered the trap cell adjacent to the junco and became trapped (see photograph). The shrike was tinged with buff, suggesting that it was an immature bird. In the winter of 1995-1996 record numbers of Northern Shrikes invaded Massachusetts (see Petersen and Davis, this issue) and as is often the case with irruptive species, a high percentage of the invading birds are immatures, presumably driven south by the failure of major prey species. The intensity and persistence of the attack of this shrike on the trapped junco suggests that the shrike was hungry. The shrike was released, and the junco banded and released unharmed.

William E. Davis, Jr., Foxboro, MA



Dark-eyed Junco and Northern Shrike, December 29, 1995

Photograph by William E. Davis, Jr.

BIRD SIGHTINGS

NOVEMBER/DECEMBER 1996

SUMMARY

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

November was very cold, dry and sunny, and December warm, dry and cloudy. November's temperature at Boston averaged 40.3°, about 5° below normal. Rainfall totaled 2.29 inches, 1.93 inches less than average, and snowfall measured 1.8 inches, 0.5 inch more than normal. The first trace of snow was on November 25. December saw the temperature average 39.3°, 5.7° above normal for Boston. The high was 61° on December 24. This was the tenth warmest December in 126 years. Rain totaled 5.76 inches, and snow was a mere 5.0 inches in Boston. A snowstorm on December 5 was wet and heavy, weighing down tree limbs. Inland and northwestern parts of the state received as much as 20 inches of snow from this storm and caused massive damage and power outages inland.

R. H. S.

LOONS THROUGH WOODPECKERS

The lack of coastal storms throughout most of period resulted in no reports of large concentrations of birds. Loon and grebe numbers were unremarkable. An **Eared Grebe**, discovered in Gloucester in October, remained through the end of the year. Very good numbers of three species of shearwaters were noted on a boat trip in early November, reflecting the good showing on inshore waters during the summer and early fall. The only significant storm in early December produced a handful of Northern Fulmars and several distant shearwaters. The two **American White Pelicans** in Falmouth were likely part of the flock present in Hyannis and vicinity during the previous two months. Reports for the heron clan were sparse, the most notable being a Cattle Egret present for a brief period on Martha's Vineyard. Most interesting among waterfowl reports were several reports of **Tundra Swan** and **Greater White-fronted Goose**. More unusual was a sighting of the Eurasian form of Green-winged Teal. This form is a regular visitor in spring migration, but is rarely reported in late fall or winter. Eurasian Wigeon put in a good appearance, but Redheads were scarce except on Nantucket, a situation that has remained fairly constant in recent years. Of three **Tufted Ducks** reported, two were of the infrequently-reported female type. Ring-necked Duck totals were very low, while Ruddy Ducks were widespread in good numbers, including a high count of 700 at Cherry Hill Reservoir in West Newbury. Harlequin Duck put in a fine showing at their local strongholds. Three King Eider representing three different plumages were present through most of the period at Rockport. Common and Hooded Mergansers were very well reported, the latter particularly on Cape Cod.

A **Black Vulture** was observed at Martha's Vineyard, where the same or different individuals had been reported in the prior few months. The remainder of raptor reports were routine. Fewer than usual November Ospreys were reported. Reports of accipiters were seasonally strong, with the notable exception of Northern Goshawk, which was very scarce. Judging from the few reports, it was not going to be a winter for Rough-legged Hawk.

The outstanding highlight of the season was a first Massachusetts record for **Northern Lapwing**, discovered on December 26 on Martha's Vineyard. During the ensuing four days that it was present, it made sporadic appearances in the field where it was first discovered and was seen by numerous observers, but often only briefly and even then only occasionally in flight. This appears to be only the third record of this species in New England, but it has appeared more frequently on nearby Long Island, New York. The balance of the shorebird roster was fairly typical for the season and features late stragglers of a number of species, a trend that has been continuing for a number of years. Most notable of these was a Spotted Sandpiper and two or three Western Sandpipers in December, but also included were late appearances for American Golden-Plover, American Oystercatcher, Hudsonian Godwit, Stilt Sandpiper and Short-billed Dowitcher.

There were scattered reports of both Parasitic and Pomarine Jaegers. The early December storm brought at least 10 Pomarine Jaegers to First Encounter Beach in Eastham, along with another 20 jaegers that were probably Pomarines. At least one Pomarine and an unidentified jaeger lingered to be tallied on the Cape Cod

Christmas Count. Reports of two **Mew Gulls** in very close proximity brings to question whether it might not be the same bird. Only a single Little Gull was reported, and Black-headed Gull was widely reported, mostly as singles, with an unusual inland occurrence at West Bridgewater. Small numbers of Iceland Gull were noted, with the best count at its Nantucket stronghold, but only a few Glaucous Gulls were seen. Perhaps the best indication that no strong storms occurred was the lack of a notable count for Black-legged Kittiwake. Both Common and Forster's tern lingered to early November in Plymouth but were almost totally absent thereafter. Alcid reports were normal for the period by recent standards. Modest numbers of both Razorbills and Black Guillemots were observed, but only a few Dovekies and three individual Thick-billed Murres were found, with only a single **Atlantic Puffin** reported.

The minor influx of **Boreal Owls** in late October culminated with the presence of a bird of Commonwealth Avenue in Boston. The bird was elusive for several weeks after its initial discovery, but then settled down to roost every night in a yew tree, where it was reliably seen until New Years Day. This individual may have been the most observed Boreal Owl in ornithological history. Otherwise things on the owl front were very quiet. Snowy Owl was rather late in arriving and when they did appear seemed to be concentrated in southern coastal regions, with the exception of birds at Logan Airport in Boston. The other unusual owls were very scarce. Three Red-headed Woodpeckers and a Yellow-bellied Sapsucker were about par for the season, but Red-bellied Woodpeckers were everywhere. The species seems to be well ensconced in the state and may soon prove to be no longer noteworthy.

R. A. F.

Date	Location	Number	Observers	Date	Location	Number	Observers
Red-throated Loon				11/2	Stellwagen	106 BBC	(G. d'Entremont)
11/10	Rockport (A.P.)	25+	R. Lockwood	Manx Shearwater			
11/12	Lincoln	1	S. + L. Hennin	11/2	Stellwagen	51 BBC	(G. d'Entremont)
11/17	Rockport (H.P.)	28	J. Nove	Large unidentified shearwater			
11/30	Manomet	7	G. d'Entremont	12/8	Eastham (F.E.)	1	B. Nikula#
12/6	Rockport (H.P.)	28	C. Witt	Small unidentified shearwater			
12/10	Nantucket	54	J. Papale	12/8	Eastham (F.E.)	2	B. Nikula#
Common Loon				Northern Gannet			
11/10	Rockport (A.P.)	15	R. Lockwood	11/2	Stellwagen	381 BBC	(G. d'Entremont)
11/10	Sandwich	13	M. Lynch#	11/9	Rockport	200	J. Berry
11/17	P.I./Salisbury B.	11	R. Lockwood	12/1	Rockport	150	J. Berry
11/17	Rockport	11	M. Lynch#	12/8	Nantucket	1500	J. Papale
Pied-billed Grebe				12/8	Eastham (F.E.)	60+	B. Nikula#
11/1	GMNWR	8	G. Gove	American White Pelican			
11/2	Northboro	4	M. Lynch#	11/10	Falmouth	2	M. Lynch#
11/3	Lakeville	17	S. Arena	Great Cormorant			
11/6	Wakefield	7	D. + I. Jewell	11/2	Plymouth	10 BBC	(G. d'Entremont)
11/10	W. Newbury	4	J. Berry	11/17	Rockport (H.P.)	6	M. Lynch#
12/7-8	Cape Cod	64	CCBC	11/23	Scituate	17	R. Lockwood
12/24	Wareham	3	R. Finch	American Bittern			
thr	Reports of 1 or 2 indiv. from 11 loc.			11/1-12-11	P.I.	1	v.o.
Horned Grebe				11/11	Hyannis	1	S. + E. Miller
11/3	Lakeville	5	S. Arena	Great Blue Heron			
11/9	Lynnfield	1	P. + F. Vale	11/29	Halifax	4	R. Finch
11/16	Quincy Bay	83	G. d'Entremont#	12/7	Wakefield	6	D. Williams
11/18	Dartmouth	7	S. Arena	Great Egret			
12/7	N. Falmouth	50	J. Eddy	11/1	P.I.	3	R. Heil
12/28	Winthrop	20	P. + F. Vale	Cattle Egret			
Red-necked Grebe				11/2-10	M.V.	1	J. Norton + v.o.
11/1	Camb. (F.P.)	1	J. Barton	Black-crowned Night-Heron			
11/7	Gloucester	7	J. Soucy#	11/10	Falmouth	3	M. Lynch#
11/10	Rockport (A.P.)	16	R. Lockwood	12/17	Yarmouthport	2	S. + E. Miller
11/16	Randolph	1	G. d'Entremont#	12/19	Nantucket	19	J. Papale
11/17	Duxbury	8	D. Ferren	Tundra Swan			
11/23	Scituate	33	R. Lockwood	11/1	Melrose	1	D. + I. Jewell
11/30	Gloucester	17	R. Heil	11/17	W. Newbury	1 BBC	(I. Giriunas)
12/7	Dennis	38	B. Nikula#	11/29	Ipswich	4	G. d'Entremont#
12/28	Winthrop	35	P. + F. Vale	Whooper Swan			
Eared Grebe				11/1-12/31	Ipswich/P.I.	2-8	J. Berry
11/7-12/31	Gloucester	1	J. Soucy + v.o.	Mute Swan			
Northern Fulmar				11/16	Gloucester	10	P. + F. Vale
12/8	Eastham (F.E.)	4+	B. Nikula#	11/18	Westport	69	S. Arena
Greater Shearwater				12/28	New Bedford	89	R. Finch
11/2	Stellwagen	522 BBC	(G. d'Entremont)	Greater White-fronted Goose			
11/27	Eastham	8	L. High	11/17-12/11	Ipswich	1-2	v.o.
Sooty Shearwater				11/23	Sterling	1	F. McMenemy

Snow Goose				11/30	S. Monomoy	1	B. Nikula
11/2	P.I.	33	R. Lockwood	12/1-31	Chatham	2 m	v.o.
11/6	Lakeville	1	D. Preison	12/24	S. Carver	1 f	K. Anderson
11/7	Berkeley	2	imm R. Turner	American Wigeon			
11/9	Wakefield	1	imm P. + F. Vale	11/17, 24	Ipswich	11, 6	J. Berry
11/14	Katama	4	J. Varkonda#	11/1-22	Camb. (F.P.)	59 max	J. Barton
11/16-12/31	Arlington	1	M. Pelikan	11/2	Lexington	84	J. Young
11/30	P.I.	25	J. Askilson	11/9	Sudbury	14	E. Taylor
12/15	Westport	1	M. Boucher	11/10	Waltham	11	M. Pelikan
12/16	Dedham	1	W. Petersen	11/11	Marstons Mills	80	M. Partridge
12/20	Charlton	1	L. Healy	11/30	S. Monomoy	50	B. Nikula
Brant				12/7-8	Cape Cod	125	CCBC
11/20	Revere	110	R. Cressman	Canvasback			
11/30	Hull	130	N. Swirka	thr	Camb. (F.P.)	117 max	J. Barton
11/30	Plymouth H.	350	G. d'Entremont	11/9	Arlington Res.	2	M. Pelikan
12/14	Bourne	100	L. Robinson	11/18	Lakeville	37	S. Arena
Wood Duck				11/18	Westport	3	S. Arena
11/2	Maynard	6	L. Nachtrab	11/22	Marlboro	3	S. Hennin
11/10	IRWS	5	J. MacDougall	11/23	Cambridge	100	E. Taylor
11/16	Worcester	37	M. Lynch#	11/30	S. Monomoy	120	B. Nikula
12/18	Yarmouthport	1	S. + E. Miller	11/30	Ipswich	2	J. Nove#
Green-winged Teal				12/7-8	Cape Cod	506	CCBC
thr	Cambridge	10 max	J. Campbell	12/15	Westport	67	M. Boucher
11/3	P.I.	165	BBC (S. Charette)	12/24	Wareham	28	R. Finch
11/15	E. Sandwich	35	S. + E. Miller	Redhead			
11/24	Arl. Res.	10	D. Deifik	11/3	Camb. (F.P.)	2	J. Barton
11/30	S. Monomoy	10	B. Nikula	12/1	Nantucket	35	J. Papale#
12/1	Nantucket	16	J. Papale	12/7	Falmouth	3	G. Martin#
12/22	Seekonk	20	D. Zimmerlin	Ring-necked Duck			
Eurasian Green-winged Teal				11/1	Camb. (F.P.)	39	J. Barton
12/22	Seekonk	1 m	M. Boucher#	11/3	Arlington Res.	130	M. Pelikan
American Black Duck				11/3	Southboro	112	M. Lynch#
11/18	Westport	500+	S. Arena	11/10	Lincoln	60	M. Pelikan
11/22	P.I.	465	W. Drew#	11/16	Winchester	48	M. Rines
11/30	Plymouth H.	425	G. d'Entremont	11/22	Marlboro	70	S. + L. Hennin
Northern Pintail				11/30	S. Monomoy	200	B. Nikula
thr	Arlington Res.	1	M. Pelikan	12/14	Framingham	70	E. Taylor
11/2	Worcester	1 f	M. Lynch#	12/21	Arlington Res.	68	R. Stymeist
11/3	P.I.	26	BBC (S. Charette)	Tufted Duck			
11/9	Sudbury	6	E. Taylor	11/1-24	Sterling	1	v.o.
11/29	Halifax	5	R. Finch	11/3-4	Nantucket	1 f	N. Brooks + v.o.
11/30	S. Monomoy	45	B. Nikula	12/27-28	New Bedford	1 f	D. Zimmerlin#
12/22	Seekonk	7 m	M. Boucher	Greater Scaup			
12/29	Marlboro	3	B. Parker	11/2	West Newbury	7	R. Lockwood
Blue-winged Teal				11/9	Lynnfield	9	P. + F. Vale
11/10	Marstons Mills	1	M. Lynch#	11/10	Gloucester	4	R. Lockwood
11/17	Squibnocket	1	J. Verner#	11/13	Camb. (F.P.)	9	J. Barton
Northern Shoveler				11/18	Lakeville	52	S. Arena
11/1-30	Worcester	1	R. Quimby	11/18	Westport	42	S. Arena
11/3, 12/22	Seekonk	1	D. Zimmerlin	11/23	Falmouth	2140	BBC (R. Stymeist)
11/9, 12/14	Marlboro	1	E. Taylor	12/8	Winthrop	24	P. + F. Vale
11/16	Melrose	1 m	D. + I. Jewell	Lesser Scaup			
11/30	S. Monomoy	25	B. Nikula	11/3	Camb. (F.P.)	2	J. Barton
11/30	Marstons Mills	2 f	M. Lynch#	11/3	Lakeville	34	S. Arena
12/1	Kingston	1	D. Clapp	11/10	W. Newbury	5	J. Berry
Gadwall				11/10	Falmouth	15	M. Lynch#
11/3, 12/22	Seekonk	100, 10	D. Zimmerlin	12/1	Marlboro	2	M. Lynch#
11/4	DWWS	18	D. Clapp	12/8	Randolph	1 f	G. d'Entremont
11/22	Ipswich	57	R. Heil	12/8	Wachusett Res.	1	M. Lynch#
11/23	Woburn	12	G. Glennon	12/15	Winthrop	4	S. Perkins#
11/30	Marstons Mills	56	M. Lynch#	12/28	Fairhaven	39	M. Boucher
11/30	Gloucester	11	R. Heil	Common Eider			
12/7-8	Cape Cod	155	CCBC	11/9	Rockport	2000	J. Berry
12/14	DWWS	36	D. Clapp	11/17	Duxbury	1500	D. Ferren
12/29	Woburn	13	D. Scott	11/29	Chatham	800	H. Miller
Eurasian Wigeon				11/30	Plymouth H.	2000	G. d'Entremont
11/11-23	Camb. (F.P.)	1 m	J. Barton + v.o.	12/28	Winthrop	300+	P. + F. Vale
11/11	Barnstable	3	S. Clifton	King Eider			
11/19	Nantucket	1	N. Brooks#	11/10-12/31	Rockport	1-3	v.o.
11/30	Belmont	1	R. Kelly	11/11	Gloucester	1 m	H. Miller
11/30	Marstons Mills	5	M. Lynch#	Harlequin Duck			

thr	Rockport	25	max	v.o.	11/1	Attleboro	86	G. Valade
11/16	Duxbury B.	1		R. Ferren	11/1	Newbypt H.	19	R. Heil
11/17	Squibnocket	45		J. Verner#	11/2	Melrose	48	P. + F. Vale
11/23	Scituate	8		R. Lockwood	11/2	Lincoln	200	S. + L. Hennin
12/1	Nantucket	15		J. Papale	11/3	Lakeville	30	S. Arena
Oldsquaw					11/3	Southboro	125	M. Lynch#
11/10	Rockport (A.P.)	100+		R. Lockwood	11/5	Boston	90	H. Miller
11/18	Lincoln	3		M. Pelikan	11/5	Danvers	40	J. Brown#
12/7	Chappaquiddick	800		V. Laux#	11/10	W. Newbury	700	J. Berry
Black Scoter					11/14	Melrose	52	D. + I. Jewell
11/9	Rockport (A.P.)	70		J. Berry	11/20	Camb. (F.P.)	178	J. Barton
11/16	P.I.	3		P. + F. Vale	11/22	Marlboro	300	S. + L. Hennin
Surf Scoter					11/23	Eastham	165	B. Nikula
11/9	Rockport (A.P.)	50		J. Berry	11/30	S. Monomoy	30	B. Nikula
11/18	Gloucester	6		P. + F. Vale	11/5, 9	Brighton	90, 85	H. Miller
White-winged Scoter					12/1	Wakefield	27	D. Williams
11/9	Rockport (A.P.)	50		J. Berry	12/7-8	Cape Cod	180	CCBC
Common Goldeneye					12/8	Randolph	17	G. d'Entremont
11/16	Lakeville	20		P. Donahue#	Black Vulture			
11/23	Scituate	12		R. Lockwood	11/24	Edgartown	1	S. + M. Vancour
11/30	Lincoln	12		S. Perkins#	Turkey Vulture			
12/24	Wareham	20		R. Finch	11/3	Natick	1	E. Taylor
12/28	Winthrop	10		P. + F. Vale	11/10	W. Newbury	3	J. Berry
Barrow's Goldeneye					11/11	N. Dartmouth	5	M. Boucher
11/22-29	S. Boston	1 m		R. Donovan	11/18	Westport	1	S. Arena
11/23	Bourne	1		I. Giriunas#	11/23	Falmouth	1	BBC (R. Stymeist)
12/1	E. Boston	1 m		BBC (R. Stymeist)	12/20	N. Dartmouth	8	M. Boucher
12/7-31	Winthrop	1		H. Miller	12/21	DWWS	1	D. Furbish
12/10	East Chop	2 m		P. Davey#	12/25	W. Barnstable	1	B. Nikula#
12/14	Salem	2		BBC (J. Paluzzi)	12/29	Fairhaven	3	F. Smith
12/23	Gloucester	1		J. Soucy	Osprey			
Bufflehead					11/1-13	Worcester	1	R. Quimby
11/1	GMNWR	12		G. Gove	11/2	Pepperell	1	E. Stromsted
11/3	Lakeville	65		S. Arena	11/11	Lakeville	1	M. Boucher
11/10	Falmouth	130		M. Lynch#	Bald Eagle			
11/16	Lakeville	25		K. Anderson	11/4	Nantucket	2	fide E. Ray
12/8	Revere	30		P. + F. Vale	11/5	N. Attleboro	1	imm G. Valade
Hooded Merganser					11/10	Canton	1	imm P. O'Neill
11/10	Falmouth	103		M. Lynch#	11/17	Concord	1	J. Labara
11/10	Boston	17		R. Stymeist#	11/22	Lakeville	2	ad K. Anderson#
11/11	Ipswich	25		J. Nove	11/28	Sandwich	1	H. Miller
11/13	Camb. (F.P.)	12		J. Barton	12/9	Wayland	1	ad N. Patterson
11/15	Arlington Res.	28		M. Rines	12/13	Nantucket	1	ad J. Papale
11/16	Worcester	49		M. Lynch#	12/21	Sherborn	1	imm E. Taylor
11/16	Lakeville	70		R. Ferren	12/21	Wareham	1	M. LeBossiere
11/16	Winchester	14		M. Rines	12/31	Danvers	1	J. Paluzzi
11/18	Lakeville	62		S. Arena	Northern Harrier			
11/30	Eastham	50		R. Clem	11/1	P.I.	5	R. Heil
12/7-8	Cape Cod	518		CCBC	11/4	DWWS	1	D. Clapp
12/7	Wakefield	21		D. Williams	11/16	Newbypt.	1	P. + F. Vale
12/24	Wareham	14		R. Finch	11/22	Cumb. Farms	4	R. Finch
12/24	Hanson	33		R. Finch	11/24	Concord (NAC)	1	R. Forster
Common Merganser					11/30	Middleboro	5	S. + L. Hennin
11/16	Worcester	57		M. Lynch#	12/11	Salisbury	1	C. Ralph
11/18	Lakeville	18		S. Arena	12/15	P.I.	1	S. Hennin
11/30	Lincoln	18		S. Perkins#	12/21	DWWS	1	D. Furbish
11/30	W. Newbury	64		R. Heil	12/23	Cumb. Farms	2	R. Finch
12/7	Lynnfield	350+		P. + F. Vale	Sharp-shinned Hawk			
12/7	Westboro	459		M. Lynch#	11/3	DWWS	2	G. Gove
12/7	Wakefield	140		D. Williams	11/9	Ipswich	2	BBC (J. Berry)
12/8	Randolph	46		G. d'Entremont	11/10	Falmouth	3	M. Lynch#
12/8	Peabody	400		D. + I. Jewell	thr	Reports of indiv. from 21 locations		
12/14	N. Andover	65		E. Stromsted	Cooper's Hawk			
Red-breasted Merganser					11/2	Hardwick	2	M. Lynch#
11/1	Bourne	52		K. Anderson	11/3	W. Bridgewater	2	S. Arena
11/18	Duxbury	450		P. Donahue#	11/18	Westport	2	S. Arena
12/2	Falmouth	67		R. Finch	thr	Reports of indiv. from 28 locations		
12/8	Winthrop	25		P. + F. Vale	Northern Goshawk			
12/21	Malden	2		P. + F. Vale	11/1	P.I.	1	imm R. Heil
Ruddy Duck					11/17	Needham	1	imm G. d'Entremont
11/1	GMNWR	27		G. Gove	11/23	E. Boxford	1	ad J. Brown#

Red-shouldered Hawk				11/23	Eastham	140	B. Nikula
11/17-12/31	Sudbury	2 ad	K. Hamilton	11/25	GMNWR	20	fide MAS
12/12	Wayland	1 ad	R. Forster	11/30	S. Monomoy	90	B. Nikula
12/21	Marion	1 ad	K. Anderson#	11/5, 9	Brighton	60, 35	H. Miller
12/24	E. Middleboro	1	K. Anderson	12/7-8	Cape Cod	380	CCBC
12/28	Middleborough	1	R. Finch	12/8	Arlington	95	M. Rines
Rough-legged Hawk				12/29	Woburn	17	D. Scott
11/14	Salisbury	1 lt	L. Healey	Northern Lapwing			
11/16	P.I.	1	P. + F. Vale	12/26-30	Chilmark	1 ad	A. Keith + v.o.
11/22	Cumb. Farms	1	R. Finch	Black-bellied Plover			
12/7	Salisbury	1	G. Marley	11/1	Newbury	200	R. Heil
12/29	DWWS	1 dk	D. Furbish	11/2	N. Monomoy	200	B. Nikula
Merlin				11/4	W. Bridgewater	5	K. Anderson
11/2	Dedham	1 m	N. Komar	11/7	Cumb. Farms	87	K. Anderson
11/3	Brookline	1	N. Komar	11/9	Ipswich	30	BBC (J. Berry)
11/10	Wakefield	1	BBC (D. Williams)	11/16	Wollaston	2	G. d'Entremont#
11/11	Marstons Mills	1	M. Partridge	11/23	Duxbury	5	R. Lockwood
11/14	Melrose	1	D. + I. Jewell	11/24	Chatham (S.B.)	64	B. Blodget
11/15	Newton	1	H. Miller	11/28	P.I.	2	J. Nove#
11/17	P.I.	1	M. Lynch#	12/6-11	Ipswich	4	C. Witt + v.o.
11/17	Duxbury B.	1	R. Ferren	12/28	S. Dartmouth	1	M. Boucher
11/20	Hull	1	N. Swirka	American Golden-Plover			
11/22	Duxbury	1	N. Swirka	11/1	Newbury	4	R. Heil
11/22	Essex	1	T. Young	11/3	W. Bridgewater	3	S. Arena
12/4	Melrose	1	D. + I. Jewell	11/10	Katama	1	V. Laux#
12/7	Chappaquiddick	2	V. Laux#	Semipalmated Plover			
12/18	Bedford	1	M. Rines	11/2	N. Monomoy	5	B. Nikula
12/21	Waltham	1	C. Ralph	11/17	P.I.	1	M. Lynch#
12/23	Westboro	1	A. Boover	Killdeer			
Peregrine Falcon				11/3	Cumb. Farms	40	S. Arena
11/1-30	Boston	2	K. Hudson	11/16	Wakefield	13	BBC (D. Williams)
11/9	Ipswich	1	BBC (J. Berry)	11/18	Taunton	3	S. Arena
11/18	Rockport	1	P. + F. Vale	11/29	Halifax	1	R. Finch
11/18	Plymouth	1	P. Donahue#	11/30	Rowley	1	R. Heil
11/22	Duxbury	1	S. Hecker	American Oystercatcher			
11/30	S. Monomoy	1 ad	B. Nikula	12/7	Cape Poge	2	M. Dix#
12/1	M.V. (Cape Poge)	1	A. Keith#	12/27	Oak Bluffs	1	A. Keith
12/8	Nantucket	1	J. Papale	Greater Yellowlegs			
12/15	P.I.	1	S. Hennin	11/6	Cumb. Farms	2	K. Anderson
Ruffed Grouse				11/10	Squantum	24	G. d'Entremont
11/1	E. Middleboro	1	K. Anderson	11/11	P.I.	9	J. Berry
11/3	Southboro	3	M. Lynch#	11/11	Rowley	21	J. Berry
11/6	Middleton	3	J. MacDougall	11/18	Dartmouth	5	S. Arena
12/8	Concord	1	M. Pelikan	11/18	Lakeville	2	S. Arena
12/10	Wayland	1	N. Patterson	Lesser Yellowlegs			
12/10	Marshfield	1	D. Furbish	11/3	Cumb. Farms	1	S. Arena
12/21	Braintree	1	G. d'Entremont	Spotted Sandpiper			
Wild Turkey				12/3	Chatham	1	R. Clem
11/1	Plainville	12	G. Valade	Hudsonian Godwit			
11/8	Carlisle	5	B. Miskolczy	11/3-4	W. Bridgewater	1	S. Arena
11/20-27	Worc. (BMB)	12	J. Liller	11/22	P.I.	2	W. Drew#
11/30	Newbypt	7	BBC (S. Moore)	Marbled Godwit			
11/30	Sherborn	5	F. Bouchard	11/2	N. Monomoy	3	B. Nikula
Northern Bobwhite				Ruddy Turnstone			
11/12	Marshfield	2	D. Furbish	11/11	Salem	21	L. Healey
11/23	Cumb. Farms	4	BBC (R. Stymeist)	11/24	Chatham	2	B. Blodget
Virginia Rail				Red Knot			
11/22	Essex	2	T. Young	11/10	Katama	1	V. Laux#
11/23	Newbypt	1	R. Heil	11/24	Chatham (S.B.)	29	B. Blodget
11/29	IRWS	1	J. Nove	Sanderling			
Common Moorhen				11/10	Falmouth	56	M. Lynch#
11/18	Nantucket	1	J. Papale	11/10	Barnstable	70	M. Lynch#
American Coot				11/10	P.I.	100	J. Berry
11/3	Camb. (F.P.)	10	J. Barton	11/10	Winthrop	100	G. Finnegan
11/3	Lakeville	50	S. Arena	11/16	Wollaston	42	G. d'Entremont#
11/5	Boston	60	H. Miller	11/23	Duxbury	50	R. Lockwood
11/10	Gloucester	12	R. Lockwood	11/24	Chatham (S.B.)	225	B. Blodget
11/10	Waltham	40	M. Pelikan	12/23	Sandwich	200	M. Boucher
11/17	P.I.	86	M. Lynch#	12/24	Lynn	800	L. Healy
11/20	Woburn	15	G. Glennon	Western Sandpiper			
11/22	Marlboro	70	S. + L. Hennin	11/30	S. Monomoy	1	B. Nikula

12/7	Eastham (F.E.)	1	R. Forster#	11/10	Barnstable	6	M. Lynch#
12/22	Eastham	1	W. Petersen#	Little Gull			
White-rumped Sandpiper				12/30	Nantucket	1	J. Papale
11/1	Newbury	16	R. Heil	Black-headed Gull			
11/2	N. Monomoy	12	B. Nikula	11/3-4	W. Bridgewater	1	S. Arena
11/3	W. Bridgewater	9	S. Arena	11/6	Lynn	1	J. Quigley
11/5	Cumb. Farms	1	K. Anderson	11/9	E. Boston	3	J. Quigley
Pectoral Sandpiper				11/17	Hull	1	N. Swirka#
11/3	W. Bridgewater	11	S. Arena	11/19	Nantucket	1	N. Brooks
11/3	Middleboro	3	S. Arena	11/29	Eastham (F.H.)	1 ad	G. Martin
11/10	Truro	1	J. Young	11/30	Newbypt	1	BBC (S. Moore)
11/18	Cumb. Farms	1	R. Finch	11/30	Plymouth H.	1 ad	G. d'Entremont
Purple Sandpiper				12/11	Newbypt	1	C. Ralph
11/19	Rockport	5	J. Soucy	12/17	Cotuit	1 ad	G. Martin
11/23	Scituate	105	R. Lockwood	12/24	Lynn B.	1 1W	L. Healy
11/30	Manomet	5	G. d'Entremont	12/28	Winthrop	1	P. + F. Vale
11/30	Cape Ann	35	BBC (S. Moore)	Bonaparte's Gull			
12/11	Salisbury	20	C. Ralph	11/10	Ipswich	16	J. Berry
12/15	Rockport	80	J. Berry	11/17	Duxbury B.	150	R. Ferren
12/28	Winthrop	2	P. + F. Vale	11/23	Newbypt	35	J. Berry
Dunlin				11/29	Hingham	140	J. Nove
11/2	N. Monomoy	700	B. Nikula	11/30	Marshfield	35	G. d'Entremont
11/3	Cumb. Farms	1	S. Arena	12/2	Falmouth	23	R. Finch
11/3	W. Bridgewater	1	S. Arena	12/8	Winthrop	250	P. + F. Vale
11/10	P.I.	80	J. Berry	12/24	Lynn B.	700	L. Healy
11/11	Rowley	70	J. Berry	Mew Gull			
11/18	Dartmouth	65	S. Arena	12/25-31	Winthrop	1 ad	S. Hennin + v.o.
11/18	Plymouth	50	K. Anderson	12/30	South Boston	1 ad	R. Donovan
11/23	Duxbury	200+	R. Lockwood	Ring-billed Gull			
11/24	Chatham (S.B.)	450	B. Blodget	11/16	Worcester	660	M. Lynch#
12/23	Sandwich	600	M. Boucher	11/30	Plymouth H.	400	G. d'Entremont
12/23	Scusset	600	M. LeBossiere	Iceland Gull			
12/24	Lynn B.	400	L. Healy	11/2	Stellwagen	2	BBC (G. d'Entremont)
12/28	S. Dartmouth	92	M. Boucher	11/9	Easton	1	S. Arena
Stilt Sandpiper				11/17	Winthrop	2	C. Lee
11/1	P.I.	1	R. Heil	11/17	Revere	2	R. Cressman
Short-billed Dowitcher				11/17	Duxbury B.	1	R. Ferren
11/1	Newbury	1	R. Heil	11/17	Hull	1	N. Swirka
11/2	N. Monomoy	2	B. Nikula	12/1	Nantucket	9	J. Papale
Long-billed Dowitcher				12/8	Rockport (A.P.)	2	J. Soucy
11/1	P.I.	10	R. Heil	Lesser Black-backed Gull			
11/2	Wakefield	1	P. + F. Vale	11/3	Concord	1	F. Bouchard
11/11	P.I.	1	J. Berry	11/11	Acton	1	R. Lockwood
Common Snipe				11/20	Nantucket	1 ad	E. Andrews
11/2	Essex	1	T. Young	12/22	Eastham	1	W. Petersen#
11/4	DWWS	1	D. Clapp	Glaucous Gull			
11/22	Cumb. Farms	1	R. Finch	11/22	Rockport	1 ad	M. Flor
12/28	Bridgewater	1	M. Emmons#	12/8	E. Dennis	1 ad	R. Forster#
American Woodcock				12/8	Rockport (A.P.)	1	J. Soucy
11/2	Quabbin (G41)	2	M. Lynch#	12/30	Nantucket	1 ad	J. Papale
11/14	Boston	1 ph	L. Craven	Black-legged Kittiwake			
11/14	Andover	3	C. Turner	11/2	Stellwagen	278	BBC (G. d'Entremont)
12/1	Billerica	1	B. Ballichek	11/9	Rockport	365	J. Berry
Phalarope species				11/24	Barnstable	2	S. Hennin
12/7	Eastham (F.E.)	1	W. Petersen#	11/30	Manomet	2	G. d'Entremont
Pomarine Jaeger				11/30	Marshfield	5	G. d'Entremont
11/2	Stellwagen	6	BBC (G. d'Entremont)	12/8	Eastham (F.E.)	200+	B. Nikula#
11/30	Rockport (H.P.)	2	R. Stymeist#	12/8	Rockport (A.P.)	200	J. Soucy
12/8	Eastham (F.E.)	10+	B. Nikula	12/15	Marshfield	2+	G. d'Entremont
12/22	Eastham	1	W. Petersen#	Common Tern			
Parasitic Jaeger				11/2	Plymouth	6	BBC (G. d'Entremont)
11/2	Stellwagen	4	BBC (G. d'Entremont)	11/10	P'town	3	J. Young
11/10	Gay Head	1	V. Laux	Forster's Tern			
12/1	Rockport	1 imm	J. Berry	11/2	Plymouth	13	BBC (G. d'Entremont)
12/8	Rockport (A.P.)	1	J. Soucy	Dovekie			
Jaeger species				11/7, 19	Rockport (A.P.)	5, 7	J. Soucy#
12/8	Eastham (F.E.)	30	B. Nikula	11/21-23	Wellfleet H.	1	v.o.
12/22	Eastham	1	W. Petersen#	11/30	P'town H.	1	S. Highley#
Laughing Gull				11/30	Gay Head	1	A. Keith
11/9	E. Boston	1 ad	J. Quigley	12/7	Marshfield	1 grounded	E. Einhorn
11/10	Falmouth	6	M. Lynch#	12/8	Rockport	5	J. Soucy

Thick-billed Murre									
11/22,29 P'town H.	1		J. Sones#	11/24 Nahant	2		M. Rines#		
11/24 Wellfleet H.	1		R. Prescott#	11/24 Cambridge	1		M. McCabe		
11/30 Gay Head	1		A. Keith#	11/28 Essex	2		T. Young		
Razorbill				12/1 Woburn	1		D. + I. Jewell		
11/2 Stellwagen	2	BBC	(G. d'Entremont)	12/10 P.I.	1		W. Drew#		
11/17 Duxbury B.	5		R. Ferren	12/19 Marlboro	1		B. Parker		
11/19 Rockport	65		J. Soucy	12/28 Boston	1		J. Young		
11/30 Marshfield	60		G. d'Entremont	Snowy Owl					
11/30 Gay Head	2		A. Keith#	11/8 Boston (Logan)	1		S. Arena		
11/30 Manomet	3		G. d'Entremont	11/15-12/31 P.I.	1		v.o.		
12/1 Rockport	330		J. Berry	11/18 Lynn B.	1		L. Healey		
12/11 P.I.	2		B. Gette	11/21 Nantucket	1		H. Young		
12/13 Rockport (H.P.)	54		C. Witt	11/22, 12/19 Duxbury	2, 3		S. Hecker		
12/14 Dennis	10		B. Nikula	11/30 S. Monomoy	1		B. Nikula		
12/15 Marshfield	3		G. d'Entremont	12/14 Boston (Logan)	4		N. Smith		
Black Guillemot				Barred Owl					
11/6 Rockport (A.P.)	3		J. Soucy#	11/3 Clinton	1		E. Salmela		
11/16 Cape Ann	6	BBC	(R. Petersen)	11/11 Ipswich	1		J. Berry		
11/24 Hull	1		Dennis Oliver#	11/23 Weston	1		J. McCoy		
11/30 Marshfield	11		G. d'Entremont	Long-eared Owl					
12/1 Rockport	2		J. Berry	11/6 Wayland	1		S. Arena		
12/7 P'town	1		R. Forster	11/23 Salisbury	1		E. Salmela#		
12/23 Sandwich	1		M. Boucher	Short-eared Owl					
12/23 Scusset	1		M. LeBossiere	11/18 Cumb. Farms	2		R. Finch		
12/23 Marblehead	6		L. Healy	Boreal Owl					
Atlantic Puffin				11/2 Petersham	1		M. Lynch#		
12/22 Chatham (S. B.)	1		V. Laux#	11/22-12/31 Boston	1 ph		K. Hudson + v.o.		
Large alcid species				Northern Saw-whet Owl					
12/8 Eastham (F.E.)	40		B. Nikula#	11/15 Athol	3		D. Small#		
12/14 Dennis	85		B. Nikula	11/18 Concord	1 dead		B. Parker		
Eastern Screech-Owl				11/28 IRWS	1		J. MacDougall		
11/2 Rockport	1		J. McLaughlin	Red-headed Woodpecker					
11/10 Stoneham	1		D. + I. Jewell	11/1-30 Sherborn	1		E. Taylor		
11/22-25 Boston	1		D. Alessi	11/18-12/31 Essex	1 imm		T. Young + v.o.		
11/28 Essex	1		T. Young#	12/22-31 Orleans	1		D. Clapp + v.o.		
11/29 Lexington	1		M. Rines	Red-bellied Woodpecker					
12/18 Newton	1		H. Kupserman	11/1-12/31 Sherborn	3-4		E. Taylor		
12/21 Weymouth	2		R. Campbell	12/1-31 Pepperell	4		E. Stromsted		
12/21 Braintree	1		R. Campbell	thr Reports of 1 or 2 indiv. from 47 loc.					
12/21 Randolph	1		G. d'Entremont	Yellow-bellied Sapsucker					
12/28 Taunton	1		G. d'Entremont#	12/13 Marshfield	1		D. Clapp		
12/28 Berkeley	1		G. d'Entremont#	Hairy Woodpecker					
Great Horned Owl				11/3 Quabbin (G45)	3		R. Lockwood		
thr Mt. A.	1		R. Stymeist#	11/10 Brookline	4		R. Stymeist#		
11/2 Dedham	1		N. Komar	Pileated Woodpecker					
11/11 Concord	2		R. Lockwood	11/2 Quabbin (G41)	1		M. Lynch#		
11/14 Westford	2		S. Wedge	11/4 Pepperell	1		E. Stromsted		
11/16 DWWS	1		R. Ferren	11/6 Hamilton	1		J. MacDougall		
11/16 E. Middleboro	pr		K. Anderson	11/23 Concord	1		D. Lange		
11/20 Medford	1		A. Mace	12/11 Wayland	1		N. Patterson		
11/23 Malden	1		P. + F. Vale	12/13 Wellesley	1		D. Sharon		
11/23 Lexington	1		D. + I. Jewell	12/14 IRWS	1		J. MacDougall		

FLYCATCHERS THROUGH GROSBEAKS

For the second year in a row, a **Scissor-tailed Flycatcher** was present in early November. Most records for this species appear during spring and early summer. Only two Western Kingbirds were reported, which is up one from last year but considerably down from previous years. There seems to be a major shift in the winter range of Fish Crows. The Sudbury River Valley used to be home to many of these birds, but during the past three years, it has been hard to find more than one individual.

The relatively mild and snowless winter surely accounted for many lingering species such as House Wren, Ruby-crowned Kinglet, Blue-gray Gnatcatcher, Eastern Bluebird, Hermit Thrush, Gray Catbird, American Pipit, Eastern Towhee and Eastern Meadowlark. There was also a strong showing of late warblers, with thirteen species being tallied. Dickcissels were noted from eleven locations, Clay-colored Sparrows from Rockport and Lexington, Lark Sparrows from Nantucket and Attleboro, and a wide scattering of Fox Sparrows. Exceptionally late sightings included a Solitary Vireo in Southbridge, a Black-

throated Blue Warbler in Wellesley, an Ovenbird in Mashpee, a Grasshopper Sparrow in Chilmark, and a Bobolink in Hyannis.

This season produced several show stoppers besides the Scissor-tailed Flycatcher mentioned above. A **Townsend's Solitaire** was discovered in West Barnstable during the Mid-Cape Christmas Bird Count (CBC). This species has occurred fewer than ten times in Massachusetts. On Martha's Vineyard, a **Black-throated Gray Warbler** was seen in a Vineyard Haven yard, and confirmed by local experts on December 27. The bird seen on that date was reported as a male; then on December 28, a number of visitors to the island looking for the Northern Lapwing saw a female of this species in the same location. Unfortunately the male was never relocated.

The recent split of Northern Oriole, which resurrected old friends Baltimore and Bullock's orioles, has led to a touch of controversy. Four female Bullock's Orioles were identified using what are considered conventional field marks. Unfortunately, these marks, which focus primarily on a grayish or white belly for Bullock's Oriole, are also shared by a very small percentage of Baltimore Orioles. The only individual that was critically examined proved to be a Baltimore Oriole. In light of this, it is best to list these orioles as "Northern" Orioles, and encourage observers to photograph all suspect orioles.

Winter finch sightings did not suggest a good winter for these erratic visitors. Only a scattering of Purple Finches were reported, plus a handful of Pine Siskins, and single reports of Red Crossbills and Evening Grosbeaks.

R. H. S.

Eastern Phoebe			11/19	Bedford	1	M. Rines
11/3 Brookline	1	N. Komar	11/24	Topsfield	1	J. MacDougall
11/23 Bourne	1	J. Silva	11/30	Rockport	3	R. Heil
11/30 Marstons Mills	1	M. Lynch#	12/1-31	E. Middleboro	2	K. Anderson
Western Kingbird			12/7	Southboro	1	M. Lynch#
11/8-29 Tisbury	1	P. Uhlendorf + v.o.	12/14	Southbridge	1	S. + L. Hennin
11/21 E. Falmouth	1	B. Goode	12/14	Newton	2	H. Miller
Scissor-tailed Flycatcher			12/15	Wayland	1	M. Pelikan
11/6-8 Wellfleet	1 ad	M. Terry	12/15	Lexington	2	M. Pelikan
Horned Lark			12/18	DWWS	2	D. Furbish
11/10 W. Quincy	6	G. d'Entremont	12/27	Westboro	1	A. Boover
11/16 Cumb. Farms	150	R. Ferren	House Wren			
11/17 Duxbury B.	7	R. Finch	11/17	Melrose	1	D. + I. Jewell
11/22 Ipswich	30	R. Heil	Winter Wren			
11/23 Duxbury	15	R. Lockwood	11/1-12/31	Medford	1-3	M. Rines
12/18 S. Carver	3	K. Anderson	11/8	Lexington	1	F. Bouchard
12/23 Cumb. Farms	175+	R. Finch	11/10	Brookline	1	R. Stymeist#
Tree Swallow			11/18	Dartmouth	2	S. Arena
11/17 Squibnocket	1	J. Verner#	11/23	Bourne	1	BBC (R. Stymeist)
11/29 Ipswich	1 imm	G. d'Entremont#	12/8	W. Barnstable	1	R. Forster#
Barn Swallow			12/8	Nantucket	2	J. Papale
11/5 Bedford	1	R. Lockwood	12/12	N. Dartmouth	1	M. Boucher
American Crow			12/14	Southbridge	1	S. + L. Hennin
11/03, 7 Framingham	500, 4300	E. Taylor	12/14	E. Middleboro	1	B. Harrington
11/10 W. Quincy	350	G. d'Entremont	12/15	Arlington Res.	1	M. Pelikan
12/8, 28 Framingham	4700, 8500	E. Taylor	12/21	Braintree	2	G. d'Entremont
Fish Crow			Marsh Wren			
11/10 W. Quincy	2	G. d'Entremont	11/22	Swampscott	1	L. Healey
11/16 Squantum	2	G. d'Entremont#	11/23	Newbypt	2	R. Heil
11/28 Sudbury	1	R. Forster	11/30	Gloucester	2	R. Heil
11/28 Watertown	18	R. Stymeist	12/23	Westport	1	A. Strauss
Red-breasted Nuthatch			Golden-crowned Kinglet			
11/1-30 E. Middleboro	1-2	K. Anderson	11/10	Brookline	12	R. Stymeist#
11/2 Quabbin (G41)	8	M. Lynch#	11/11	Concord	12	R. Lockwood
12/6 Marshfield	2	D. Furbish	12/11	Sudbury	8	R. Forster
Brown Creeper			12/14	Malden	5	P. + F. Vale
11/1 Medford	2	M. Rines	Ruby-crowned Kinglet			
11/2 Maynard	2	L. Nachtrab	11/2	Mt.A.	1	R. Stymeist
11/3 Quabbin (G45)	2	R. Lockwood	11/10	Brookline	4	R. Stymeist#
11/3 Southboro	4	M. Lynch#	11/16	Randolph	1	G. d'Entremont#
11/11 Concord	3	R. Lockwood	11/18	Dartmouth	1	S. Arena
11/29 Halifax	4	R. Finch	11/29	S. Boston	1	R. Donovan
12/1-31 Mt.A.	2-3	R. Stymeist	12/3	Medford	1	D. + I. Jewell
12/29 Hudson	2	B. Parker	12/11	Sudbury	1	R. Forster
Carolina Wren			12/14	Lexington	1	M. Rines
11/10 Ipswich	2	J. Berry	Blue-gray Gnatcatcher			
11/11 Marstons Mills	5	M. Partridge	11/2	Rockport	1	BBC (J. Nove)
11/18-30 Marlboro	1	B. Parker	Eastern Bluebird			

11/3	Brookline	7	N. Komar	12/18	Bedford	1 imm	M. Rines
11/10	Pepperell	6	E. Stromsted	European Starling			
11/11	Concord	9	R. Lockwood	11/10	Methuen	750,000	J. Hogan
11/11	Essex	6	D. Brown	Solitary Vireo			
11/16	Charlton	16	S. + L. Hennin	12/14	Southbridge	1	S. + L. Hennin
12/7	GMNWR	8	S. + L. Hennin	Orange-crowned Warbler			
12/17	E. Middleboro	4	K. Anderson	11/2	Melrose	1	P. + F. Vale
12/18	DWWS	5	D. Furbish	11/8	Lexington	1	F. Bouchard
12/21	Foxboro	25	S. Correa	11/10	Wakefield	1	BBC (D. Williams)
12/21	Topsfield	7	J. Brown	11/11	Hyannis	1	S. + E. Miller
12/27	Westboro	8	A. Boover	11/27-29	S. Boston	1	R. Donovan
12/27	Chilmark	6	K. Anderson#	Nashville Warbler			
12/28	Taunton	9	D Larson#	11/6	Lexington	1	M. Rines
12/29	Hamilton	6	K. Disney	11/29	S. Boston	1	R. Donovan
Townsend's Solitaire							
12/29-31	W. Barnstable	1	V. Laux + v.o.	Northern Parula			
Hermit Thrush							
11/3	ONWR	1	E. Salmela	11/9	N. Attleboro	1 f	G. Valade
11/7	Medford	1	M. Rines	Cape May Warbler			
11/12	Lexington	2	M. Rines	11/10	Truro	1 imm	J. Young
11/13	Marshfield	1	D. Furbish	11/28-12/9	Nantucket	1	J. Papale
11/15	Burlington	1	M. Rines	Black-throated Blue Warbler			
11/16	Randolph	1	G. d'Entremont#	11/21	Wellesley	1 m	J. Titus
11/17	Needham	1	G. d'Entremont	Black-throated Gray Warbler			
11/18	Dartmouth	2	S. Arena	12/14-30	Vineyard Haven	1-2 M.	Sibert + v.o.
11/22	Newton	1	H. Miller	Yellow-rumped Warbler			
11/29	S. Boston	1	R. Donovan	11/3	Quabbin (G45)	14	R. Lockwood
11/30	Gloucester	1	R. Stymeist#	11/9	Burlington	15	M. Rines
12/24	Cambridge	1	H. Hofheinz	11/10	Brookline	4	R. Stymeist#
12/25	E. Boxford	1	J. Brown#	11/16	Squantum	55	G. d'Entremont#
American Robin							
11/1	Newbypt	280	R. Heil	11/17	Ipswich	8	J. Berry
11/28	Essex	400	T. Young#	11/18	Dartmouth	85	S. Arena
12/14	Belmont	275	C. Cook	12/11	P.I.	50	B. Gette
12/15	Newton	40	R. Veit#	12/23	Sandwich	25	M. Boucher
12/15	DWWS	75	G. d'Entremont	Pine Warbler			
Gray Catbird							
11/10	Squantum	2	P. O'Neill	12/28	Bridgewater	1	K. Anderson
11/18	Dartmouth	2	S. Arena	Palm Warbler			
11/22	Ipswich	1	R. Heil	11/18	Dartmouth	1	S. Arena
11/24	W. Newbury	2	J. Nove	11/24	Nahant	1	R. Stymeist#
11/30	Gloucester	1	R. Heil	11/30	Gay Head	1	A. Keith#
12/2	Falmouth	1	R. Finch	12/28	N. Dartmouth	1	M. Boucher
12/21	Braintree	1	G. d'Entremont#	12/30	Rockport (H.P.)	1	J. MacDougall
12/23	Westboro	1	A. Boover	Ovenbird			
Brown Thrasher							
11/3	Topsfield	1	C. Cusson	11/30	Mashpee	1	G. LeBaron
11/5	Cummaquid	1	S. + E. Miller	Common Yellowthroat			
11/18	Dartmouth	1	S. Arena	11/16	Randolph	1	G. d'Entremont#
11/30	P.I.	1	R. Shutsky	11/16	Woburn	2	M. Rines
12/3	Medford	1	D. + I. Jewell	11/22	Ipswich	1	R. Heil
American Pipit							
11/1	Newbury	32	R. Heil	11/30	Gloucester	1	R. Heil
11/3	Middleboro	85	S. Arena	12/9	MNWS	1	L. Healy
11/10	W. Quincy	3	G. d'Entremont	12/23	Westport	1	A. Strauss
11/10	Katama	65	V. Laux#	Northern Cardinal			
12/1	Gloucester	1	E. Stromsted	11/2	Melrose	7	P. + F. Vale
12/23	Cumb. Farms	1	R. Finch	Indigo Bunting			
Cedar Waxwing							
12/27	Westboro	131	A. Boover	11/3	Brookline	1	N. Komar
Northern Shrike							
11/3	Cumb. Farms	1	R. Finch	11/10	Gay Head	1	V. Laux
11/9	Concord	1	D. Lange	Dickcissel			
11/18	Wayland	1	B. Parker	11/1-12/31	Athol	1	B. Fregeau
11/24	Nahant	1 imm	M. Rines#	11/2	Rochester	1	F. Smith
11/29-12/7	Salisbury	1	v.o.	11/3	Truro	1	R. Clem
12/12	Wayland	1	N. Patterson	11/3	Chilmark	2	A. Keith
12/13	Sudbury	1	K. Hamilton	11/12-12/31	Melrose	1	D. + I. Jewell
12/15	Lexington	1	M. Pelikan	11/17	Framingham	1	K. Hamilton
12/15	GMNWR	1	J. Melonotis	11/22	Athol	1	D. Small
12/15	Wayland	1	M. Pelikan	11/24	Nantucket	1	J. Papale#
				12/7	Mansfield	1	J. Kricher
				12/12	Gardner	1	T. Pirrou

12/25-31	Centerville	1	J. Keil	White-throated Sparrow			
12/26	Salisbury	1	G. Leet	11/15	Burlington	43	M. Rines
Eastern Towhee				White-crowned Sparrow			
11/1-12/31E.	Middleboro	1 f	K. Anderson	11/2	Nantucket	2	fide E. Ray
11/2	Acton	1	S. Wedge	"Oregon" Junco			
11/6	Cambridge	1	H. Miller	12/5	Lincoln	1	M. Rines
11/13	Stoneham	1	D. + I. Jewell	Lapland Longspur			
11/30	Gloucester	3	R. Heil	11/2	N. Monomoy	15	B. Nikula #
12/28	N. Dartmouth	2	M. Boucher	11/5	Cumb. Farms	2	K. Anderson
12/28	Bridgewater	1	K. Anderson	11/17	Duxbury B.	11	R. Ferren
12/28	Taunton	1 m	G. d'Entremont#	11/18	Lynn	1	L. Healey
American Tree Sparrow				11/24	Katama	32	V. Laux#
11/2	P.I.	20	R. Lockwood	12/11	Scusset B.	2	D. Furbish
11/3	ONWR	30+	E. Salmela	12/23	Cumb. Farms	5	R. Finch
11/6	Lexington	15	M. Rines	Snow Bunting			
11/17	Salisbury B.	11	R. Lockwood	11/1	Newbury	57	R. Heil
11/30	DWWS	11	G. d'Entremont	11/3	P.I.	120	M. Pelikan
12/7	Wakefield	10	P. + F. Vale	11/3	Salisbury	190	M. Pelikan
12/8	Randolph	13	G. d'Entremont	11/4	Orleans	200	S. + E. Miller
12/15	E. Boston (B.I.)	20	S. Perkins#	11/10	W. Quincy	4	G. d'Entremont
Chipping Sparrow				11/10	Revere	7	G. Finnegan
11/2	Melrose	1	P. + F. Vale	11/13	Duxbury B.	46	D. Furbish
12/11	Framingham	3	K. Hamilton	11/17	Plainville	47	G. Valade
12/28	Medway	1	J. Young	11/17	Ipswich	35	J. Berry
Clay-colored Sparrow				11/18	Dartmouth	45	S. Arena
12/22-31	Rockport	1	BBC (W. Drummond)	11/23	P.I.	25	B. Gette
12/29	Lexington	1	M. Pelikan	11/26	Pepperell	50	E. Stromsted
Field Sparrow				11/30	Plymouth B.	25+	G. d'Entremont
11/2	Melrose	1	P. + F. Vale	11/30	Squibnocket	50	A. Keith
11/16	Braintree	1	G. d'Entremont#	12/23	Sandwich	56	M. Boucher
12/8	Randolph	1	G. d'Entremont	Bobolink			
12/28	N. Dartmouth	6	M. Boucher	11/11	Hyannis	1	S. + E. Miller
Vesper Sparrow				Red-winged Blackbird			
11/3	Gay Head	3	A. Keith#	11/3	Southboro	60	M. Lynch#
Lark Sparrow				11/9	Concord (NAC)	250	R. Forster
11/3-10	Nantucket	1	E. Andrews#	11/9	Sudbury	1000	R. Forster
11/16-30	N. Attleboro	1	G. Valade	11/10	W. Quincy	4	G. d'Entremont
Savannah Sparrow				11/10	Stow	50	B. Parker
11/2	Wakefield	2	P. + F. Vale	11/18	Marlboro	40	B. Parker
11/10	W. Quincy	6	G. d'Entremont	11/28	Sudbury	150	R. Forster
11/13	Bedford	1	M. Rines	12/15	Lincoln	3	L. Harvey
"Ipswich" Sparrow				12/18	DWWS	4	D. Furbish
11/3	Salisbury	1	M. Pelikan	12/23	Milton	9	O. Kerr
Grasshopper Sparrow				Eastern Meadowlark			
11/10	Chilmark	1	V. Laux#	11/6	Dennis	12	S. + E. Miller
Nelson's Sharp-tailed Sparrow				11/16	Marshfield	50	M. Partridge
12/11	P.I.	1	C. Ralph	11/16	DWWS	40+	M. Partridge
Fox Sparrow				11/19	Essex	1	T. Young#
11/3	Southboro	3	M. Lynch#	11/23	Cumb. Farms	11	BBC (R. Stymeist)
11/7	Lexington	4	M. Rines	12/21	DWWS	13	D. Furbish
11/9	Saugus	5	P. + F. Vale	12/26	Bedford	1	M. Rines
11/11	Marlboro	4	F. Howes	12/28	N. Dartmouth	2	M. Boucher
11/12	Melrose	3	D. + I. Jewell	Rusty Blackbird			
11/15	Wakefield	2	D. + I. Jewell	11/2	Pepperell	2	E. Stromsted
11/15	Burlington	3	M. Rines	11/3	ONWR	80+	E. Salmela
11/1-31	Reports of indiv. from 11 locations			11/3	Gay Head	6	A. Keith#
12/7	Brookline	1	H. Wiggin#	11/10	Sudbury	63	R. Forster
12/8	Concord	1	M. Pelikan	11/17	Concord	1	G. d'Entremont#
12/15	Newton	1	S. Perkins#	11/17	Arlington	1	M. Rines#
12/22-31	Mt. A.	1	P. Stevens + v.o.	12/7-9	Acushnet	1	M. LaBossiere
12/22	W. Boxford	1	T. Walker	Common Grackle			
12/30	Marlboro	1	B. Parker	11/3	Methuen	"millions"	J. Hogan
12/31	Arlington	1	R. Stymeist	11/4	Pepperell	700	E. Stromsted
Lincoln's Sparrow				11/9	Sudbury	400	E. Taylor
11/12	Cummaquid	1	S. + E. Miller	11/10	Squantum	18	G. d'Entremont
Swamp Sparrow				11/11	Stow	200	B. Parker
11/10	W. Quincy	6	G. d'Entremont	11/17	Needham	6+	G. d'Entremont
11/13	Arlington	3	M. Rines	Brown-headed Cowbird			
11/17	Concord	3	G. d'Entremont#	11/10	Rockport	2	R. Lockwood
11/18	Cumb. Farms	6	R. Finch	11/29	Newbury	3	G. d'Entremont
11/30	DWWS	5	G. d'Entremont	12/20	DWWS	6	D. Furbish

Baltimore Oriole				11/30	DWWS	1	G. d'Entremont
11/10	Truro	1	J. Young	11/7,8	Newton	2	H. Miller
12/21-31	Malden	1	M. Starr	12/5-21	Mattapoisett	3	F. Smith
12/22	Lincoln	1	N. Claflin	12/28	N. Dartmouth	1	M. Boucher
12/23-31	W. Gloucester	1 f	v.o.	Red Crossbill			
"Northern" Oriole				11/24	Petersham	9	B. Fregeau
11/11	Hingham	1 f	N. Swirka	Pine Siskin			
12/18-31	Sherborn	1 f	fide E. Taylor	11/2	Quabbin (G41)	2	M. Lynch#
12/08-16	Taunton	1 f	D. Emerson	11/2	Worcester	3	M. Lynch#
Purple Finch				11/7, 30	Athol	5, 1	D. Small
11/1	Wayland	8	G. Gove	11/13	N. Attleboro	1	G. Valade
11/2	Mt. A.	1	BBC (R. Stymeist)	11/17	Mt. A.	1	J. McCoy
11/3	P.I.	1	P. + F. Vale	11/23	Melrose	1	P. + F. Vale
11/10	Marlboro	1	B. Parker	12/13	Nantucket	1	J. Papale
11/11-14	Brookline	3	H. Wiggin#	12/18	Acton	1	S. Wedge
11/17	Melrose	1	D. + I. Jewell	Evening Grosbeak			
11/24	W. Newbury	2	J. Nove	12/13	Athol	5	D. Small

HOW TO CONTRIBUTE BIRD SIGHTINGS TO *BIRD OBSERVER*

This publication prints monthly compilations of reports of birds seen in the ten counties of eastern Massachusetts (Worcester County and east) and offshore waters. Space does not permit the inclusion of all material submitted. However, bird sightings sent to *Bird Observer* are archived at the Massachusetts Audubon Society. Our compilers select and summarize for publication sightings that provide a snapshot of birdlife during the reporting period. These sightings include early and late dates for migratory species, maximum counts of migrants and some common birds, and species found beyond their normal ranges.

Sightings for any given month must be reported in writing by the eighth of the following month. Send to Bird Sightings, Robert H. Stymeist, 94 Grove Street, Watertown, MA 02172. Please organize reports by month and by species in current A.O.U. checklist order. Include name and phone number of observer, common name of species, date of sighting, location, number of birds, number of observers, and information relevant to age, sex, morph, etc.

Reports of difficult identifications, vagrants, rarities, or species unusual as to place, time, or prior nesting activity in Massachusetts also should be reported promptly to the Massachusetts Avian Records Committee, c/o Wayne Petersen, Massachusetts Audubon Society, South Great Road, Lincoln, MA 01773. Include, in addition to the above information, time of day and light available, weather conditions, the optics used and approximate distance from the bird, length of observation, observer's prior experience with the species, and field guide or other references used. Provide a description of the bird based solely on personal observation. Comment on the distinguishing field marks (observed and unobserved), vocalizations, activity, general behavior, habitat, and other birds present. Include with your report copies of any field notes and sketches.

Corrigendum

For bird sightings for August 1996 in Volume 24, Number 6:

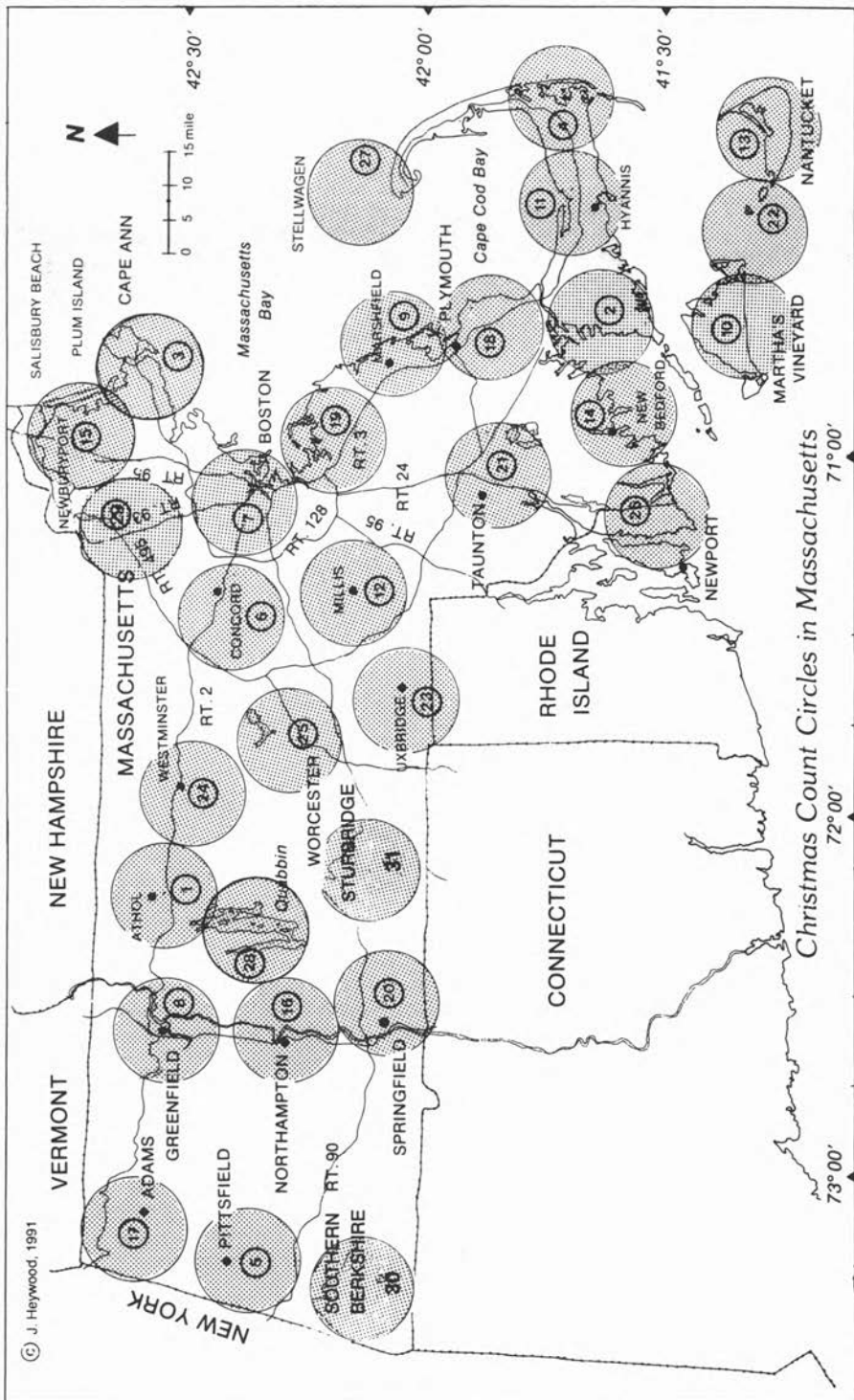
Willet
8, 25 N. Monomoy 4, 6 B. Nikula

should read:

Willet
8, 25 N. Monomoy 40, 6 B. Nikula

LIST OF ABBREVIATIONS

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



CHRISTMAS BIRD COUNT, 12/20/96-1/5/97

Compiled by Marjorie W. Rines and Robert H. Stymeist

The Ninety-seventh annual Christmas Bird Count (CBC), sponsored by the National Audubon Society, was held from December 20, 1996 to January 5, 1997. Eastern Massachusetts and a portion of Rhode Island contain twenty-five count areas (see map). Results from these counts are summarized in the following pages. A total of 185 species plus one subspecies, "Ipswich" Sparrow, were recorded. The Whooper Swans that have been present for some time in Essex County were found on the Newburyport CBC, but these are not currently recognized as "wild" species, so were not included. Three additional species were found during the CBC period, but were not found on the count day: a Common Moorhen and Pine Grosbeak on Nantucket and a Black-throated Blue Warbler on the Concord CBC. The Cape Cod CBC led the area counts were 120 species, followed closely by Nantucket with 119.

Unusual species reported included Least Bittern, Tundra Swan, Greater White-fronted Goose, Tufted Duck, Western Sandpiper, both Pomarine and Parasitic jaegers, Atlantic Puffin, Boreal Owl, Townsend's Solitaire, Varied Thrush, Clay-colored Sparrow and Bullock's Oriole. The highlight was, of course, the very cooperative Boreal Owl which was tallied by so many observers not participating in the Boston CBC.

The National Audubon Society and Partners in Flight have just published their first "watchlist," an annual documentation of birds in decline or in immediate danger. Several of the 90 species on this list were reported on this year's eastern Massachusetts CBCs: Sharp-tailed Sparrow, Red Knot, American Bittern, Short-eared Owl, Red-headed Woodpecker, Gray Catbird, Dickcissel, Clay-colored and Field sparrows, and Rusty Blackbird.

In the following tables, birds identified only by species type, such as "scaup species" have not been shown unless no identifiable form was noted, and the totals of individuals 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; **Dick McHale**, 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; **Tom Young**, Newburyport; **Trevor Lloyd-Evans**, Plymouth; **Scott Sumner**, Quabbin; **Glenn d'Entremont and Patty O'Neill**, Quincy; **Simon Perkins**, Stellwagen; **Mark Lynch**, Sturbridge; **Steve Arena**, Taunton-Middleboro; **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), Tuckermuck Island (22), Uxbridge, MA/RI (23), Westminster (24), Worcester (25), Newport County, RI/Westport, MA (26), Stellwagen Bank (27), Quabbin (28), Andover (29), and Sturbridge (30).

97th CHRISTMAS BIRD COUNT, December 20, 1996-January 5, 1997

species	And.	Athol	B. B.	C. Ann	C. Cod	Conc.	Gr. Bos.	Marsh.	M. V.	Mid-C.	Millis
Red-throated Loon	0	0	15	8	381	0	5	12	100	36	0
Common Loon	0	1	35	95	61	1	2	13	355	60	1
Pied-billed Grebe	0	0	16	1	24	0	2	1	0	7	0
Horned Grebe	0	0	119	57	9	0	52	2	44	69	0
Red-necked Grebe	0	0	3	17	5	0	17	9	6	67	0
Northern Gannet	0	0	0	77	5260	0	0	1	21	12	0
Great Cormorant	6	0	23	119	34	0	6	2	60	6	0
Double-cr. Cormorant	1	0	7	3	4	1	22	1	5	2	0
American Bittern	0	0	0	0	0	0	0	0	0	1	0
Least Bittern	0	0	0	0	0	0	0	0	0	0	0
Great Blue Heron	0	0	38	5	64	6	22	17	31	67	3
Black-cr. Night-Heron	0	0	0	0	0	0	1	0	5	0	0
Tundra Swan	0	0	0	0	0	0	0	0	0	0	0
Mute Swan	0	0	56	17	23	0	13	20	64	76	0
Gr. W.-fronted Goose	0	0	0	0	0	0	0	0	0	0	0
Snow Goose	0	0	0	0	0	0	1	0	0	0	0
Brant	0	0	238	2	1492	0	441	192	22	144	0
Canada Goose	1181	31	866	1161	1477	2527	2470	794	940	506	1156
Wood Duck	0	2	0	0	0	2	6	0	0	7	0
Green-winged Teal	0	0	1	0	12	0	101	4	4	25	0
American Black Duck	39	19	727	478	1815	77	886	1353	670	3575	75
Mallard	436	10	445	383	252	869	2407	381	600	438	677
Northern Pintail	0	0	3	0	0	2	2	7	7	19	0
Blue-winged Teal	0	0	0	0	0	0	0	0	1	0	0
Northern Shoveler	0	0	0	0	0	1	0	0	0	1	0
Gadwall	0	0	32	33	6	0	12	33	4	170	0
Eurasian Wigeon	0	0	0	0	2	0	0	0	1	3	0
American Wigeon	0	0	2	1	52	0	13	16	37	134	3
Canvasback	0	0	62	0	25	0	3	0	0	76	0
Redhead	0	0	3	0	0	0	0	0	1	0	0
Ring-necked Duck	0	0	25	0	112	0	42	8	24	82	14
Tufted Duck	0	0	0	0	0	0	0	0	0	0	0
Greater Scaup	0	0	1307	2	6	0	89	0	260	1	0
Lesser Scaup	0	0	3	0	4	0	2	0	2	3	16
Common Eider	0	0	4476	205	3284	0	1978	2278	750	1237	0
King Eider	0	0	0	1	0	0	0	0	0	0	0
Harlequin Duck	0	0	0	71	3	0	0	0	21	0	0
Oldsquaw	0	0	157	87	333	0	0	27	340	108	0
Black Scoter	0	0	15	22	121	0	0	5	285	20	0
Surf Scoter	0	0	236	50	18	0	7	10	65	41	0
White-winged Scoter	0	0	472	312	359	0	218	164	208	97	0
Common Goldeneye	8	0	392	216	256	34	190	117	940	183	1
Barrow's Goldeneye	0	0	1	2	0	0	1	0	2	1	0
Bufflehead	0	0	1396	553	1324	0	520	304	720	749	3
Hooded Merganser	6	0	248	1	67	20	161	12	102	59	40
Common Merganser	61	2	73	10	42	89	77	3	4	34	18
Red-br. Merganser	0	0	1076	309	2843	6	658	362	868	526	0
Ruddy Duck	0	0	34	0	66	92	131	0	0	0	4
Turkey Vulture	0	0	3	0	0	0	0	0	0	0	0
Bald Eagle	1	2	0	0	0	0	0	0	0	0	1
Northern Harrier	0	0	6	0	13	0	2	7	4	7	0
Sharp-shinned Hawk	2	0	6	3	8	8	7	6	4	8	5

97th CHRISTMAS BIRD COUNT, December 20, 1996-January 5, 1997

species	Nant.	N.B.	Nbpt.	Ply.	Quab.	Quin.	Stell.	Sturb.Tau/Mb.	Uxbr.	Wstrn.	Worc.	Nwp	
RTLO	171	2	11	10	0	8	17	0	0	0	0	30	
COLO	186	8	53	51	7	15	27	0	2	1	0	98	
PBGR	13	0	0	9	0	5	0	0	0	0	0	10	
HOGR	30	75	76	56	23	185	10	0	3	0	0	111	
RNGR	48	0	22	20	0	36	16	0	0	0	0	5	
NOGA	745	0	6	3	0	0	246	0	0	0	0	0	
GRCO	59	28	2	35	0	75	3	0	2	0	0	125	
DCCO	8	0	0	6	1	5	0	0	3	0	0	10	
AMBI	0	0	0	0	0	0	0	0	0	0	0	0	
LEBI	0	0	1	0	0	0	0	0	0	0	0	0	
GBHE	30	16	7	14	0	12	3	0	4	4	1	31	
BCNH	16	0	0	0	0	0	0	0	0	0	0	0	
TUSW	0	0	1	0	0	0	0	0	0	0	0	1	
MUSW	21	175	18	28	0	27	0	0	10	0	0	123	
GWFG	0	0	1	0	0	0	0	0	0	0	0	0	
SNGO	0	0	40	1	0	0	0	1	0	0	0	1	
BRAN	199	12	190	72	0	407	0	0	0	0	0	0	
CAGO	519	933	3827	1198	3	1379	6	572	1771	1671	74	533	4889
WODU	0	0	1	2	0	3	0	0	1	8	0	1	1
GWTE	9	8	12	0	0	1	0	0	3	0	0	1	37
ABDU	553	885	3503	881	28	1136	356	15	134	91	41	136	1126
MALL	613	313	927	297	219	390	3	463	452	418	287	933	769
NOPI	2	0	15	1	0	3	0	0	0	0	0	0	66
BWTE	0	0	0	0	0	0	0	0	0	0	0	0	1
NOSH	1	0	0	1	0	0	0	0	0	0	0	1	0
GADW	3	11	56	14	0	0	1	0	0	2	0	1	52
EUWI	0	0	0	1	0	1	0	0	1	0	0	0	0
AMWI	3	13	1	8	0	1	0	0	53	0	0	0	242
CANV	81	0	0	0	0	11	0	0	17	0	0	0	732
REDH	35	0	0	0	0	0	0	0	0	0	0	0	0
RNDU	21	0	1	11	4	3	0	0	10	0	0	1	0
TJDU	0	1	0	0	0	0	0	0	0	0	0	1	0
GRSC	622	47	5	18	0	86	8	0	5	1	0	17	2354
LESC	49	41	0	0	0	0	0	0	1	1	0	1	188
COEI	3625	3047	1713	1434	0	6028	606	0	0	0	0	0	394
KIEI	2	0	0	2	0	0	0	0	0	0	0	0	0
HADU	22	0	0	0	0	0	0	0	0	0	0	0	80
OLDS	148615	41	135	44	0	146	37	0	0	0	0	0	0
BLSC	286	0	15	6	0	11	1	0	0	0	0	0	80
SUSC	69	61	0	130	0	34	1	0	0	0	0	0	77
WWSC	428	148	386	233	0	379	323	0	0	0	0	0	87
COGO	1527	935	423	155	25	262	23	2	52	1	1	55	509
BAGO	3	0	0	0	1	0	0	0	0	0	0	0	0
BUFF	699	439	247	247	0	607	137	0	99	0	0	4	347
HOME	65	10	17	75	29	43	0	10	25	12	0	55	53
COME	17	0	91	393	259	57	3	463	56	131	5	52	108
RBME	767	134	166	662	0	506	385	0	6	0	0	0	345
RUDU	1	0	27	0	0	1	0	0	83	0	0	0	198
TUVU	0	0	0	0	0	0	0	0	0	0	0	0	8
BAEA	0	0	2	0	22	0	0	2	2	0	0	0	0
NOHA	25	2	5	0	0	1	2	0	0	0	0	0	11
SSHA	8	2	7	4	6	6	1	4	4	7	0	1	7

97th CHRISTMAS BIRD COUNT, December 20, 1996-January 5, 1997

species	And.	Athol	B. B.	C. Ann	C. Cod	Conc.	Gr. Bos.	Marsh.	M. V.	Mid-C.	Millis
Cooper's Hawk	0	3	3	2	4	6	3	1	3	1	0
Northern Goshawk	0	0	0	0	0	0	0	0	0	0	1
Red-shouldered Hawk	0	0	2	0	0	4	0	0	0	0	0
Red-tailed Hawk	23	6	23	22	17	77	81	22	27	7	60
Rough-legged Hawk	0	0	0	0	0	0	0	0	0	0	0
American Kestrel	0	0	1	1	1	4	10	1	0	0	1
Merlin	0	0	0	0	3	0	3	0	2	1	1
Peregrine Falcon	1	0	0	0	2	0	6	2	2	0	0
Ring-necked Pheasant	2	1	1	1	1	6	13	0	4	0	8
Ruffed Grouse	0	1	2	0	0	8	0	4	0	0	7
Wild Turkey	0	199	0	0	0	0	1	0	22	0	12
Northern Bobwhite	0	0	12	0	2	0	0	0	1	7	0
Virginia Rail	0	0	1	1	5	1	0	1	3	6	0
American Coot	0	0	144	6	110	1	76	0	5	20	6
Black-bellied Plover	0	0	7	2	16	0	0	4	38	0	0
Killdeer	0	0	0	3	7	0	0	1	3	0	0
American Oystercatcher	0	0	0	0	0	0	0	0	1	0	0
Greater Yellowlegs	0	0	1	1	2	0	6	0	2	0	0
Ruddy Turnstone	0	0	0	0	0	0	0	0	0	0	0
Red Knot	0	0	0	0	0	0	0	0	0	0	0
Sanderling	0	0	27	2	671	0	24	0	264	99	0
Western Sandpiper	0	0	0	0	1	0	0	0	0	0	0
Purple Sandpiper	0	0	0	5	0	0	0	68	2	0	0
Dunlin	0	0	10	30	1624	0	0	270	29	125	0
Common Snipe	0	0	2	0	1	0	0	1	0	0	0
American Woodcock	0	0	1	0	0	0	0	2	2	0	1
Pomarine Jaeger	0	0	0	0	1	0	0	0	0	0	0
Parasitic Jaeger	0	0	0	0	0	0	0	0	0	0	0
Little Gull	0	0	0	0	0	0	0	0	0	0	0
Black-headed Gull	0	0	0	0	0	0	2	0	0	0	0
Bonaparte's Gull	0	0	73	183	155	0	35	21	11	23	0
Ring-billed Gull	977	1	199	390	198	228	4590	253	186	434	189
Herring Gull	1282	371	1591	6595	4414	4996	6133	4152	1490	836	111
Iceland Gull	0	0	0	4	7	0	0	0	0	0	0
Lesser Bla.-bac. Gull	0	0	0	0	1	0	1	0	0	1	0
Glaucous Gull	0	0	0	0	2	0	1	0	0	0	0
Great Bla.-bac. Gull	61	73	212	1818	893	450	644	1241	335	299	9
Black-legged Kittiwake	0	0	0	29	2335	0	0	0	14	3	0
Dovekie	0	0	0	2	9	0	0	0	1	0	0
Common Murre	0	0	0	0	0	0	0	0	0	0	0
Thick-billed Murre	0	0	0	0	1	0	0	0	0	0	0
Razorbill	0	0	1	59	391	0	0	5	32	5	0
Black Guillemot	0	0	0	27	0	0	0	0	0	0	0
Atlantic Puffin	0	0	0	0	1	0	0	0	0	0	0
Rock Dove	1265	909	384	632	111	853	3547	349	262	206	507
Mourning Dove	292	313	454	327	215	2237	494	119	480	206	520
Barn Owl	0	0	0	0	0	0	0	0	3	0	0
Eastern Screech-Owl	1	1	1	17	2	20	28	18	14	9	5
Great Horned Owl	1	2	1	7	6	27	4	3	0	3	8
Snowy Owl	0	0	0	1	1	0	4	2	0	0	0
Barred Owl	0	1	0	0	0	7	1	0	0	0	1
Long-eared Owl	0	0	0	0	0	0	0	1	0	0	0

97th CHRISTMAS BIRD COUNT, December 20, 1996-January 5, 1997

species	Nant.	N.B.	Nbpt.	Ply.	Quab.	Quin.	Stell.	Sturb.Tau/Mb.	Uxbr.	Wstm.	Worc.	Nwp	
COHA	2	1	3	0	0	4	0	4	4	5	0	2	7
NOGO	0	0	0	0	0	0	0	0	0	2	0	0	1
RSHA	0	1	0	1	0	0	0	1	2	0	0	0	2
RTHA	23	4	47	7	19	18	1	30	19	37	5	49	47
RLHA	2	0	0	0	0	0	0	0	0	0	0	0	0
AMKE	0	0	4	1	0	0	0	0	2	1	0	0	9
MERL	5	1	2	1	0	1	0	0	0	0	0	0	2
PEFA	2	0	2	1	0	1	0	0	0	1	0	0	1
RNPH	21	0	4	1	4	1	0	3	0	8	3	1	1
RUGR	0	0	3	0	38	5	0	4	1	9	1	1	0
WITU	0	0	5	0	97	1	0	19	0	0	7	61	0
NOBO	0	0	0	1	0	0	0	0	0	0	0	0	0
VIRA	2	0	0	0	0	0	0	0	0	0	0	0	7
AMCO	110	20	6	13	1	5	0	0	35	0	0	18	670
BBPL	13	5	0	0	0	2	0	0	0	0	0	0	0
KILL	0	0	0	1	0	0	0	0	0	0	0	0	4
AMOY	0	0	0	0	0	0	0	0	0	0	0	0	0
GRYE	0	0	0	0	0	0	0	0	1	0	0	0	1
RUTU	3	32	0	0	0	0	0	0	0	0	0	0	24
REKN	0	0	0	0	0	0	1	0	0	0	0	0	0
SAND	464	0	8	1	0	42	0	0	0	0	0	0	98
WESA	0	0	0	0	0	0	0	0	0	0	0	0	0
PUSA	29	14	42	22	0	45	0	0	0	0	0	0	124
DUNL	7	170	80	43	0	0	400	0	0	0	0	0	125
COSN	0	0	0	0	0	0	0	0	1	2	1	1	4
AMWO	1	1	1	0	0	0	0	1	2	0	0	0	1
POJA	0	0	0	0	0	0	5	0	0	0	0	0	0
PAJA	0	0	0	0	0	0	1	0	0	0	0	0	0
LIGU	2	0	0	0	0	0	0	0	0	0	0	0	0
BHGU	2	0	1	1	0	0	0	0	0	0	0	0	0
BOGU	320	17	69	40	0	469	5	0	0	0	0	0	360
RBGU	25	1616	976	716	31	1310	56	353	345	117	23	895	1724
HEGU	4441	376	2243	995	82	6645	852	513	2993	275	2010	168	1995
ICGU	45	0	4	0	0	0	16	0	0	0	3	0	1
LBBG	2	0	0	0	0	0	0	0	0	0	0	0	1
GLGU	2	0	0	0	0	0	1	0	0	0	0	0	0
GBBG	1790	77	445	250	16	674	788	93	446	40	327	43	582
BLKI	158	0	11	0	0	0	1335	0	0	0	0	0	0
DOVE	0	0	0	0	0	0	0	0	0	0	0	0	0
COMU	0	0	0	0	0	0	6	0	0	0	0	0	0
TBMU	0	0	0	0	0	0	1	0	0	0	0	0	0
RAZO	134	0	1	2	0	3	407	0	0	0	0	0	0
BLGU	4	0	0	0	0	2	2	0	0	0	0	0	0
ATPU	0	0	0	0	0	0	0	0	0	0	0	0	0
RODO	221	427	649	183	185	800	384	1178	451	1005	673	678	513
MOD0	402	117	733	150	421	157	3	415	869	868	230	234	477
BROW	6	0	0	0	0	0	0	0	0	0	0	0	0
EASO	0	1	9	4	0	13	0	2	4	27	1	6	8
GHOW	0	0	6	0	7	4	1	2	7	32	3	0	10
SNOW	3	0	0	0	0	1	1	0	0	0	0	0	0
BAOW	0	0	0	0	6	0	0	2	0	2	0	0	0
LEOW	1	0	0	0	0	0	0	0	0	0	0	0	0

97th CHRISTMAS BIRD COUNT, December 20, 1996-January 5, 1997

species	And.	Athol	B. B.	C. Ann	C. Cod	Conc.	Gr. Bos.	Marsh.	M. V.	Mid-C.	Millis
Short-eared Owl	0	0	0	0	0	0	0	0	0	0	0
Boreal Owl	0	0	0	0	0	0	1	0	0	0	0
North. Saw-whet Owl	0	3	0	0	0	0	0	0	0	0	0
Belted Kingfisher	1	1	12	3	8	12	3	4	14	24	2
Red-hea. Woodpecker	0	0	0	1	1	0	0	0	0	0	3
Red-bel. Woodpecker	3	1	4	4	6	24	9	1	30	4	9
Yellow-bel. Sapsucker	0	0	0	0	0	0	0	1	2	0	1
Downy Woodpecker	72	46	64	59	71	429	210	52	69	62	180
Hairy Woodpecker	19	26	12	5	13	81	7	8	12	9	29
Northern Flicker	3	0	19	14	66	18	37	18	42	30	22
Pileated Woodpecker	0	3	0	3	0	8	0	0	0	0	1
Eastern Phoebe	0	1	2	0	1	0	0	0	2	0	0
Horned Lark	0	0	28	118	121	7	19	22	3	7	0
Tree Swallow	0	0	0	2	0	0	0	0	0	0	0
Blue Jay	278	730	372	258	367	1616	461	68	336	199	702
American Crow	7616	265	633	848	634	1708	5775	541	1010	526	1112
Fish Crow	13	0	0	0	0	0	69	0	0	0	1
Common Raven	0	18	0	0	0	0	0	0	0	0	0
Black-cap. Chickadee	327	1369	974	674	1133	2598	996	477	1200	1176	949
Tufted Titmouse	128	182	235	151	139	938	271	187	0	125	408
Red-br. Nuthatch	10	49	18	15	15	27	13	11	7	2	26
White-br. Nuthatch	51	118	75	91	66	499	164	42	125	57	287
Brown Creeper	6	25	2	10	3	40	20	4	8	8	29
Carolina Wren	1	0	111	7	75	14	0	27	87	95	14
House Wren	0	0	0	0	0	0	1	0	1	0	0
Winter Wren	0	1	6	2	5	1	1	1	3	7	2
Marsh Wren	0	0	2	0	0	0	0	0	0	3	0
Golden-cr. Kinglet	16	173	36	20	12	62	21	30	11	10	14
Ruby-crowned Kinglet	0	0	2	1	0	0	0	1	0	2	0
Eastern Bluebird	0	0	0	6	0	97	0	5	26	17	63
Townsend's Solitaire	0	0	0	0	0	0	0	0	0	1	0
Hermit Thrush	1	0	23	4	18	1	6	2	0	9	0
American Robin	63	0	413	817	936	645	2508	151	123	1138	67
Varied Thrush	0	0	0	0	0	0	0	0	0	0	1
Gray Catbird	0	0	15	3	8	0	2	1	9	9	2
Northern Mockingbird	28	9	100	65	76	170	204	41	44	82	56
Brown Thrasher	0	0	0	0	1	0	0	0	0	0	0
American Pipit	0	0	0	0	0	0	0	0	1	0	0
Cedar Waxwing	91	56	189	86	286	640	17	56	48	32	149
Northern Shrike	0	5	0	0	1	3	0	0	0	2	0
European Starling	3139	1573	1545	3981	1587	5515	99776	6833	1920	1195	4170
Orange-cro. Warbler	0	0	0	0	0	0	1	0	0	0	0
Yellow-rumped Warbler	0	0	113	163	583	1	31	91	170	143	1
Pine Warbler	0	0	0	1	2	0	0	0	0	0	0
Palm Warbler	0	0	11	1	2	0	0	0	0	2	0
Common Yellowthroat	0	0	0	1	0	0	1	0	3	2	0
Yellow-breasted Chat	0	0	2	0	3	0	0	0	1	2	0
Northern Cardinal	43	34	366	121	328	413	260	99	191	356	201
Dickcissel	0	1	0	1	0	0	1	0	0	0	0
Eastern Towhee	0	0	18	1	6	2	1	0	12	3	4
Amer. Tree Sparrow	62	106	102	171	12	485	453	61	12	14	214
Chipping Sparrow	1	0	0	0	0	0	0	2	0	0	0

97th CHRISTMAS BIRD COUNT, December 20, 1996-January 5, 1997

species	Nant.	N.B.	Nbpt.	Ply.	Quab.	Quin.	Stell.	Sturb.	Tau/Mb.	Uxbr.	Wstrn.	Worc.	Nwp
SEOW	1	0	0	0	0	0	0	0	0	0	0	0	0
BOOW	0	0	0	0	0	0	0	0	0	0	0	0	0
NSWO	3	0	0	0	7	0	0	0	1	0	2	0	0
BEKI	0	3	6	6	6	5	0	3	2	9	0	5	3
RHWO	0	0	0	0	0	0	0	0	0	0	0	0	0
RBWO	4	2	11	4	2	2	0	9	9	10	1	10	7
YBSA	0	0	0	0	0	0	0	1	0	0	0	0	0
DOWO	14	16	166	30	145	49	4	114	71	172	98	103	46
HAWO	1	1	28	2	38	2	0	15	8	24	23	14	4
NOFL	111	10	40	27	4	26	1	6	40	34	7	6	36
PIWO	0	0	2	0	29	0	0	1	0	0	2	1	0
EAPH	0	0	0	1	0	0	0	0	0	0	0	0	0
TRSW	0	0	0	0	0	0	0	0	0	0	0	0	0
HOLA	9	0	204	14	0	4	10	103	0	20	0	7	148
BLJA	173	58	617	218	500	154	40	669	700	635	911	605	181
AMCR	503	171	1246	376	310	976	60	897	519	711	267	2065	779
FICR	0	0	0	3	0	33	0	0	0	0	0	0	0
CORA	0	0	0	0	25	0	0	6	0	0	0	1	0
BCCH	287	92	1756	653	1690	419	85	1244	680	1311	1090	730	373
TUTI	0	54	321	184	255	92	1	364	257	597	128	195	48
RBNU	11	0	25	11	134	3	0	22	2	11	14	17	0
WBNU	1	58	269	21	259	50	0	157	75	264	115	169	32
BRCR	1	1	14	1	82	2	0	27	14	22	20	35	2
CAWR	51	7	0	57	0	6	3	0	19	18	0	3	73
HOWR	0	0	0	0	0	0	1	0	0	0	0	0	0
WIWR	2	0	2	3	3	3	0	0	2	0	1	1	3
MAWR	7	0	3	0	0	0	1	0	1	0	0	0	5
GCKI	4	4	41	19	312	0	0	50	24	33	43	40	15
RCKI	1	0	0	5	3	0	0	1	0	2	0	0	0
EABL	0	3	8	4	1	0	0	16	49	31	0	6	2
TOSO	0	0	0	0	0	0	0	0	0	0	0	0	0
HETH	2	2	0	13	0	1	1	0	0	1	0	0	11
AMRO	933	93	797	183	204	347	96	30	152	94	53	76	1035
VATH	0	0	0	0	0	0	0	0	0	0	0	0	0
GRCA	20	1	0	7	1	2	0	2	1	0	0	1	22
NOMO	43	27	78	74	21	91	6	23	90	64	13	61	163
BRTH	0	0	0	0	0	0	0	0	0	0	0	0	1
AMPI	0	0	0	0	0	0	0	0	0	0	0	0	21
CEWA	127	39	327	60	224	29	0	59	167	233	296	272	96
NOSH	4	0	0	0	2	0	0	1	0	4	0	0	0
STAR	2162	1084	8580	1578	699	10365	63	7220	4313	3321	1615	2293	9730
OCWA	0	0	0	0	0	0	0	0	0	0	0	1	0
YRWA	1516	22	221	393	0	185	77	0	33	3	0	0	203
PIWA	0	0	0	5	0	0	0	0	1	0	0	0	0
PAWA	1	1	1	2	0	2	3	0	1	0	0	0	3
COYE	0	0	1	0	0	0	0	1	0	0	0	0	5
YBCH	1	0	0	0	0	0	0	0	0	0	0	0	1
NOCA	100	63	205	167	43	90	12	91	188	194	42	105	172
DICK	0	0	1	0	0	0	0	0	0	0	0	0	0
EATO	14	5	1	1	2	0	0	0	4	6	1	0	8
ATSP	7	24	557	42	185	117	11	147	198	237	154	132	168
CHSP	0	0	0	0	0	0	0	0	0	4	0	0	0

97th CHRISTMAS BIRD COUNT, December 20, 1996-January 5, 1997

species	And.	Athol	B. B.	C. Ann	C. Cod	Conc.	Gr. Bos.	Marsh.	M. V.	Mid-C.	Millis
Clay-colored Sparrow	0	0	0	1	0	0	0	0	0	0	0
Field Sparrow	0	1	35	1	5	11	4	5	50	1	52
Vesper Sparrow	0	0	1	0	0	0	0	0	0	1	0
Savannah Sparrow	0	0	162	0	3	1	0	1	34	18	0
"Ipswich" Sparrow	0	0	0	0	1	0	0	1	2	2	0
Sharp-td Sparrow sp.	0	0	0	0	0	0	0	1	0	1	0
Fox Sparrow	0	0	4	0	1	5	4	0	0	0	1
Song Sparrow	15	13	365	70	214	138	303	50	113	292	106
Swamp Sparrow	0	1	36	1	33	11	5	11	13	44	16
White-thr. Sparrow	8	11	351	59	302	167	229	184	178	242	134
White-cr. Sparrow	0	0	0	0	0	1	0	0	0	0	0
Dark-eyed Junco	185	894	264	243	85	1495	930	166	205	70	864
Lapland Longspur	0	0	1	0	3	0	3	8	0	0	0
Snow Bunting	0	12	27	83	100	0	98	3	53	1	0
Red-winged Blackbird	0	2	332	0	1	11	20	44	3	12	219
Eastern Meadowlark	0	0	1	0	26	0	0	20	6	10	2
Rusty Blackbird	0	0	0	0	0	4	11	49	0	1	8
Common Grackle	0	0	1	0	8	4	4	1	6	0	106
Br.-headed Cowbird	0	0	7	45	0	55	50	0	3	0	1
Baltimore Oriole	0	0	0	0	2	2	1	0	0	1	0
Bullock's Oriole	0	0	0	1	0	0	0	0	0	0	1
Purple Finch	16	6	2	5	2	3	0	2	2	0	20
House Finch	57	95	461	196	822	1002	526	331	295	215	279
Red Crossbill	0	0	0	0	0	0	0	0	0	0	0
White-winged Crossbill	0	0	0	0	0	0	0	0	0	0	0
Common Redpoll	0	0	0	0	0	0	0	0	0	0	2
Pine Siskin	0	6	0	0	0	0	0	0	20	0	0
American Goldfinch	179	650	931	299	548	1427	633	264	237	265	406
Evening Grosbeak	0	10	0	0	0	0	5	0	0	0	1
House Sparrow	562	676	767	1337	383	1301	2875	669	750	933	793
number of species	50	57	110	105	120	76	108	100	113	108	79
total birds	18640	9120	25247	24517	40195	34351	143314	23351	18308	18425	15308

And. = Andover CBC	12/28/96
Athol = Athol CBC	12/21/96
B. B. = Buzzards Bay CBC	12/21/96
C. Ann = Cape Ann CBC	12/22/96
C. Cod = Cape Cod CBC	12/22/96
Conc. = Concord CBC	12/28/96
Gr. Bos. = Greater Boston CBC	12/22/96
Marsh. = Marshfield CBC	12/29/96
M. V. = Martha's Vineyard CBC	1/5/97
Mid-C. = Mid-Cape Cod CBC	12/29/96
Millis = Millis CBC	12/21/96

97th CHRISTMAS BIRD COUNT, December 20, 1996-January 5, 1997

species	Nant.	N.B.	Nbpt.	Ply.	Quab.	Quin.	Stell.	Sturb.Tau/Mb.	Uxbr.	Wstrm.	Worc.	Nwp	
CCSP	0	0	0	0	0	0	0	0	0	0	0	0	
FISP	11	9	1	39	1	33	0	4	83	37	0	3	6
VESP	0	0	0	0	0	0	0	0	0	0	1	0	0
SASP	4	0	10	3	0	24	2	0	4	0	0	0	28
"IP"SP	1	0	2	0	0	1	0	0	0	0	0	0	2
STSP sp	0	0	1	0	0	0	0	0	0	0	0	0	0
FOSP	0	0	0	2	0	1	0	1	0	0	1	0	2
SOSP	281	37	105	207	46	153	14	86	172	144	26	86	385
SWSP	14	1	3	11	0	4	2	1	13	7	0	1	83
WTSP	183	52	105	219	95	102	13	143	108	108	22	97	402
WCSP	0	0	1	0	0	0	0	0	0	0	0	0	6
DEJU	45	50	345	129	1035	232	17	1538	521	758	660	701	77
LALO	0	0	45	0	0	1	3	0	0	0	0	0	0
SNBU	13	51	19	4	0	75	32	4	1	0	0	0	13
RWBL	75	0	3	0	0	0	0	0	0	43	0	5	38
EAME	1	3	0	0	0	0	0	0	0	0	0	0	23
RUBL	0	0	0	0	0	0	0	0	0	1	0	0	0
COGR	1	0	2	0	0	0	9	0	0	1	0	0	52
BHCO	5	1	4	0	0	12	0	2	1	1	0	0	817
BAOR	1	0	0	0	0	0	0	0	0	0	0	0	0
BUOR	0	0	0	0	0	0	0	0	0	0	0	0	0
PUFI	7	7	4	1	4	0	0	5	6	1	2	0	1
HOFI	208	173	418	200	160	147	11	331	250	439	191	190	299
RECR	0	0	0	0	4	0	0	0	0	0	0	0	0
WWCR	0	0	0	0	1	0	0	0	0	0	0	0	0
CORE	0	0	0	0	0	0	0	0	0	0	0	0	0
PISI	0	0	0	0	0	0	0	2	0	0	0	0	0
AMGO	338	152	782	234	303	174	28	371	259	526	278	337	210
EVGR	0	0	1	0	0	0	0	0	0	0	4	0	0
HOSP	315	183	1424	393	606	791	40	961	416	1017	647	806	334
# species	119	81	108	100	63	95	72	65	85	70	51	69	114
# birds	176060	12928	35931	14173	8975	36878	7130	18530	17572	15943	10424	13149	36279

Nant.	=	Nantucket CBC	1/4/97
N. B.	=	New Bedford CBC	12/28/96
Nbpt.	=	Newburyport CBC	12/29/96
Ply.	=	Plymouth CBC	12/27/97
Quab.	=	Quabbin CBC	1/4/97
Quin.	=	Quincy CBC	12/21/96
Stell.	=	Stellwagen CBC	12/21/96
Sturb.	=	Sturbridge CBC	12/20/96
Tau/Mb.	=	Taunton-Middleboro CBC	12/28/96
Uxbr.	=	Uxbridge, MA/RI CBC	1/4/97
Wstrm.	=	Westminster CBC	12/28/96
Worc.	=	Worcester CBC	12/21/96
Nwp.	=	Newport, RI/Westport, MA CBC	12/21/96

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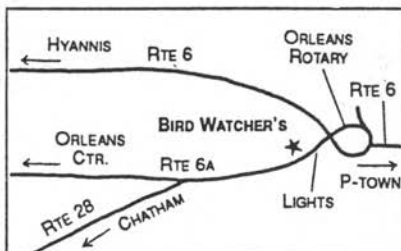
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ABOUT THE COVER: NORTHERN SHRIKE

The Latin name for the Northern Shrike, *Lanius excubitor*, says a lot about the bird. *Lanius* means butcher, and *excubitor* means sentinel or watchman. The "butcher-bird" description comes from the shrike's habit of impaling its rodent or avian prey on thorns, twigs, or barbed wire, or jamming the prey in the fork of a branch, to store it or to facilitate tearing it apart. On cold winter days, we search for a Northern Shrike perched atop tall trees or shrubs, from which it watches for predators and searches for its prey.

The Northern Shrike differs from the similar Loggerhead Shrike in a number of ways. It is larger, has a grayer head, a narrower mask which does not extend above the eye, a larger bill, and faint gray barring on the ventral plumage. At a distance or at a glance, a Northern Shrike may be confused with a Northern Mockingbird, whose color pattern is vaguely similar; moreover, both species often perch in the open. Northern Shrikes are monomorphic but juvenile birds have a distinctly brownish or rusty cast and a less pronounced mask. The species is highly polytypic, with at least seventeen subspecies worldwide, two of which are recognized in North America.

Northern Shrikes are Holarctic in distribution, and in North America their breeding range extends from Alaska through a narrow band of central Canada, around the southern part of Hudson Bay, to Labrador. Most Northern Shrikes are migratory. Their wintering range includes roughly the northern half of the United States and southern Canada, but along the coasts they winter to Alaska and Newfoundland. The species is often erratic in its winter distribution and irruptive, with birds on the east coast sometimes reaching as far south as Virginia. During "flight years" in Massachusetts, shrikes may begin to appear as early as late October, with peak numbers in December and January. They are usually gone by early April.

On the breeding grounds, Northern Shrikes prefer semi-open areas: taiga, scrub, and bogs, or open deciduous and coniferous forest. Their song is a soft but melodious jumble of warbles, harsh notes, trills, whistles, and mimicked song of other species. They may sing year-round, and it is an odd sensation to listen to their soft warbling amid the snow and ice of midwinter in Massachusetts. Northern Shrikes are highly territorial birds with a variety of aggressive displays and appeasement postures. Courtship displays include extensive nuptial flights by the male, with spiralling, hovering, gliding, and calling.

The breeding biology is poorly known for North American races, but is well described for Eurasian birds. The male "shows" the female a number of possible nest sites. Both birds participate in nest construction and territorial defense, and have been known to hover and dive at a human intruder. The nest is often in a spruce and is a bulky affair of twigs, roots, grass, bark, and feathers. Four to six

off-white eggs, splotted olive, brown, and pinkish, is the usual clutch. Incubation lasts for about two weeks, and is done mostly or exclusively by the female that is brought food by the male. The fledging period is about three weeks.

Northern Shrikes are versatile foragers and alter their diet in response to conditions. They prefer small mammals—shrews, mice, voles—and insects, but shift to a diet largely of birds when the snows of winter eliminate or obscure their preferred prey. Shrikes may wait and watch from a perch and then pounce on prey, or fly low over the ground, presumably to avoid detection. Birds are caught more easily by surprise at perches than in direct pursuit. Shrikes may search for insect prey by hopping along on the ground. They lack the talons and strong grasping feet of raptors, and so rely mainly on their hooked beaks for subduing prey. Shrikes kill vertebrate prey by severing the spinal cord at the base of the skull, and occasionally strike the base of the skull with their bill. Birds caught in flight are usually driven to the ground before being killed. Shrikes remove the stingers of bees and wasps by mashing the insects with their bill and wiping the stinger out on branches. Largely solitary outside of the breeding season, Northern Shrikes may defend winter territories. Like raptorial species, shrikes regurgitate pellets of bone, fur, and feathers.

The irruptive behavior of Northern Shrikes, and their proclivity for frequenting winter birdfeeding stations, occasionally has brought them into hazardous conflict with humans. In the late nineteenth century, about 50 were shot in a single winter by wardens of the Boston Common, who were protecting the newly introduced European House Sparrows! In the large flight of 1926-1927, 62 shrikes were reported "destroyed" by bird banders along the east coast. Their arctic breeding grounds free them, however, from most human disturbance and pesticides. Northern Shrikes do not occupy all of the potentially suitable breeding habitat of the far north, and it is suggested that winter resources and severe climatic conditions are the principal factors which limit their populations. Presumably, it is harsh conditions that render small mammal prey inaccessible, and/or a failure of the prey populations, that drive these magnificent predators into our area to brighten our winters.

W.E. Davis, Jr.

ABOUT THE COVER ARTIST

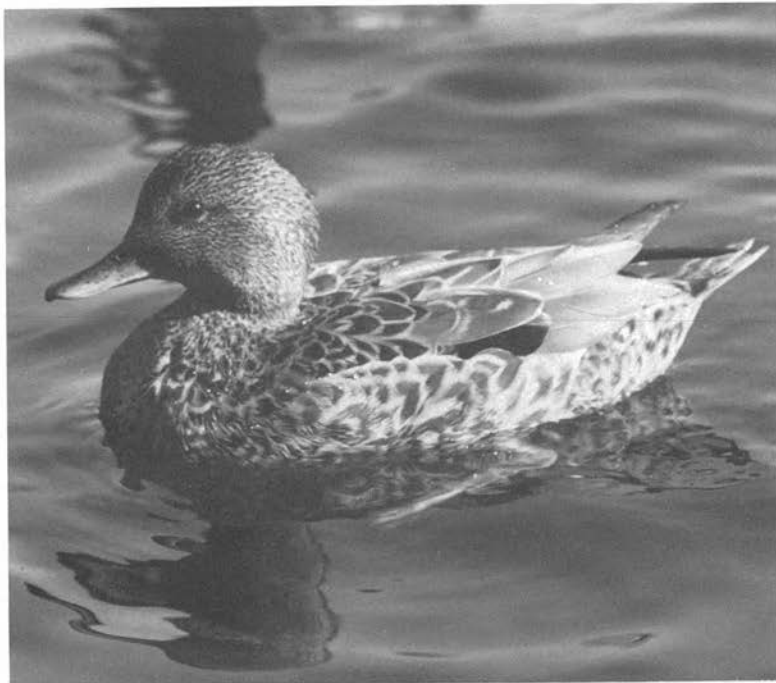
Barry van Dusen, an artist and illustrator based in central Massachusetts, appears frequently on *Bird Observer* covers. One of Barry's recent projects was providing plates (mainly terns and gulls) for a section called "The Aerialists" in *All the Birds of North America*, a new field guide produced by the American Bird Conservancy. The largest exhibition to date of Barry's art was held April 25 through May 23 in the Crocker House at Wachusett Meadow Sanctuary. M.L.P.

AT A GLANCE *February 1997* _____ *Wayne R. Petersen*

Ducks are one of the most distinctive groups of birds. Their generally broad, flat, round-tipped bills (except for mergansers) quickly distinguish them from other birds that sit on the water, such as loons, grebes, cormorants, gulls, and alcids. For many duck species, color is less important to the identification process than pattern, although for the males of species like scaup, head color is helpful but not essential. After some practice, male waterfowl in showy breeding plumage can readily be identified, even a great distance.

But ducks in juvenile and female plumage, as well as males in summer eclipse plumage, can pose some nasty identification challenges. The February mystery photograph is just such a bird, lacking much in the way of a distinctive pattern.

The first thing to do when working on an unknown duck, regardless of the plumage, is to determine whether it is a diving duck (e.g., scaup, eider, merganser) or one of the dabbling ducks (e.g., Mallard, Wood Duck, teal) that tip up in shallow water or walk on land when foraging. The rather narrow bill, rounded head, pointed tail, strongly mottled pattern, and buoyant carriage on the water are all more or less characteristic of dabbling ducks.



Gadwall

Photo by Hugo H. Schroder, Courtesy of MAS

The lack of obvious markings typical of breeding-plumaged male ducks, except possibly the American Black Duck, combined with the bird's mottled pattern, indicate that the mystery bird is probably a female or juvenile dabbling duck. (Drakes in eclipse plumage almost invariably display at least some of the characteristics of the breeding plumage.)

Having made the determination that the mystery bird is most probably a female or juvenile, there are several features visible in the picture that contribute to the process of elimination. First, the bill is quite narrow and the upper mandible appears to be dark down the center with light edges. American Black Duck, both Green-winged and Blue-winged teal, and Northern Pintail have bills uniform in color and pattern. The two wigeon species have light blue bills with a prominent black tip, and the female Mallard has a broad, dark saddle in the middle of the upper mandible. Northern Shoveler can be easily eliminated because the bill is not broad and spatulate in shape. The female Wood Duck would show a white tear-shaped mark around the eye.

Lest we jump to conclusions at this point, let us further concentrate on the rather uniform pattern of the head, the steep forehead that gives the head an angular appearance on the front, the absence of obvious white on the outer tail feathers, the uniform pale appearance of the tertials, and the presence of a partially visible black secondary feather on the folded wing. Collectively, these features indicate that the duck in the photo can only be a Gadwall (*Anas strepera*), probably a female, although the smooth, unpatterned appearance of the tertials means that a juvenile male cannot be ruled out.

The Gadwall is a locally common migrant and breeder in Massachusetts, and modest numbers routinely winter on coastal ponds, particularly in the southeastern parts of the state.

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AT A GLANCE

Photo by Hugo H. Schroder
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Can you identify this bird?

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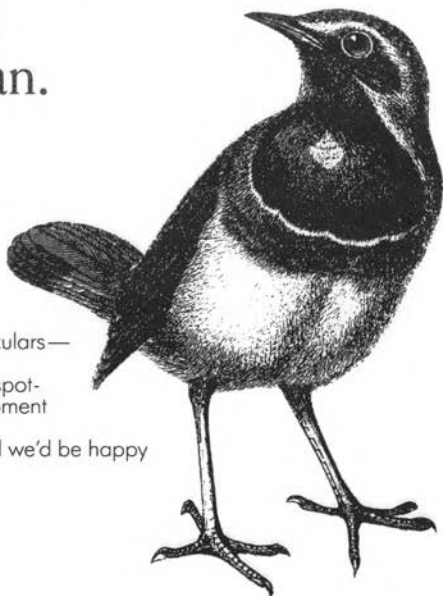
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