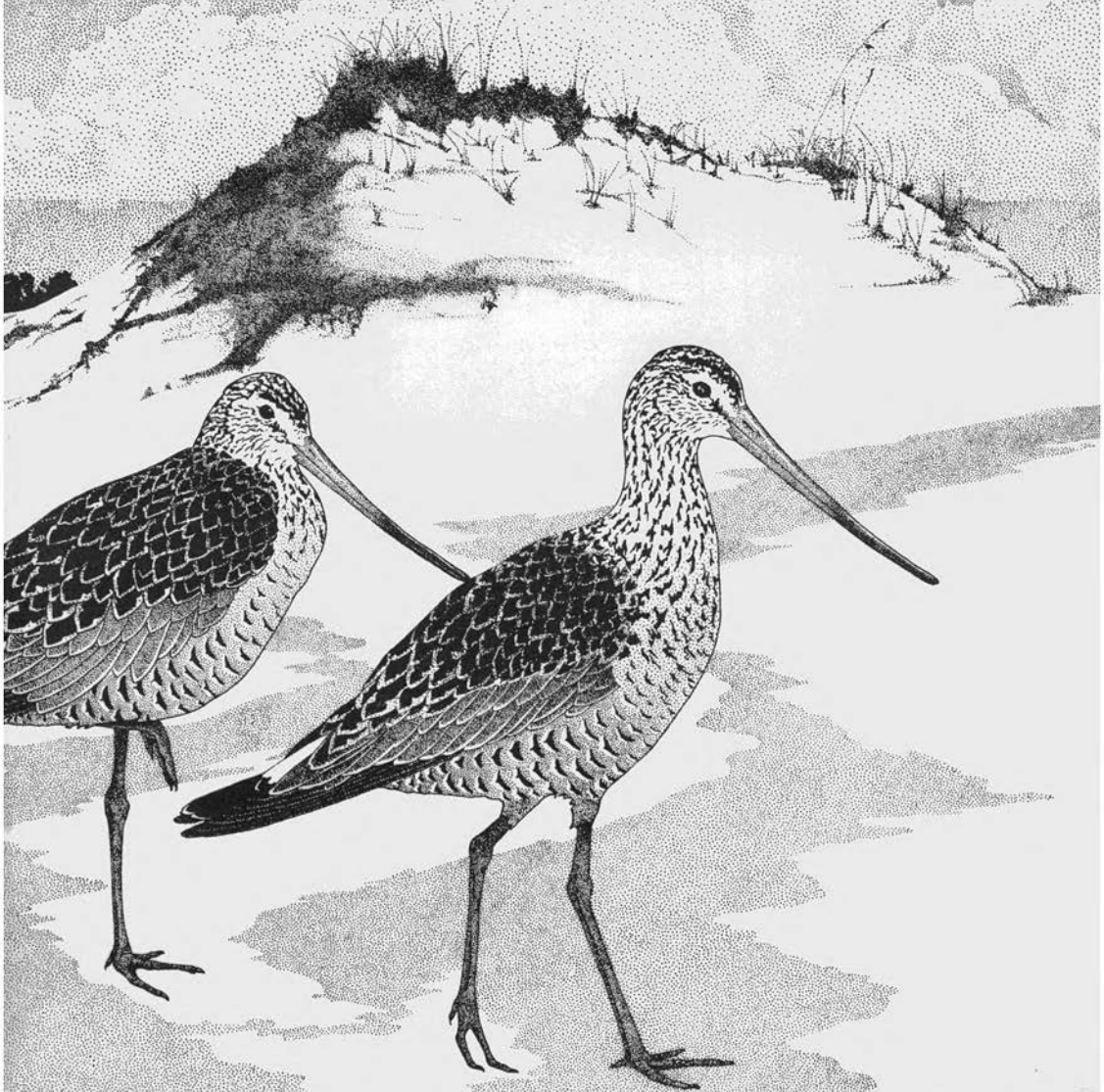


BIRD OBSERVER

OF EASTERN MASSACHUSETTS



AUGUST, 1979

VOL. 7 NO. 4



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Bird Observer of Eastern Massachusetts (USPS 369-850)

A bi-monthly publication

Volume 7, no. 4 July-Aug. 1979

\$6.50 per calendar year, January-December

All correspondence should be sent to:

Bird Observer
462 Trapelo Road
Belmont, Massachusetts 02178

Second class postage is paid at Boston, Massachusetts.

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Subscription to BIRD OBSERVER is based on a calendar year, from January to December, at \$6.50 per year. Back issues to new subscribers are available at \$6.50 per year or \$1.25 per issue.

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EDITOR'S PAGE

FALL PELAGIC TRIP

The final Brookline Bird Club pelagic birding trip of the year will leave from Plymouth on October 28. For reservations, send a non-refundable deposit of \$8 (by check) to Mr. Herman D'Entremont, P.O. Box 207, Newton Center, Massachusetts 02159. For further information, call Mr. D'Entremont at 734-1289.

TAKE A SECOND LOOK

On October 6, Nancy Claflin will lead a "Take a Second Look" field trip to Plum Island to study the coastal movements of accipiters and falcons. For specific information on the walk and a preview of what is expected, call Nancy Claflin at 484-5651.

The last TASL field trip of the year will be held in Lexington on November 11, when John Andrews will lead a study of raptor winter ranges in Lexington. For details, contact John Andrews at 862-6498.

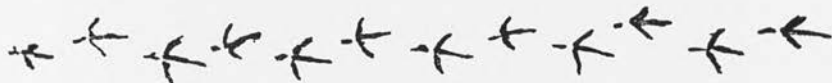
EASTERN MASSACHUSETTS HAWK WATCH

The second half of the Eastern Massachusetts Hawk Watch will be conducted on the weekends of September 29-30 and October 27-28. Observers are needed for all dates. Please contact Paul M. Roberts, 24 Pearson Road, Somerville, Massachusetts 02144 (776-8566) for details.

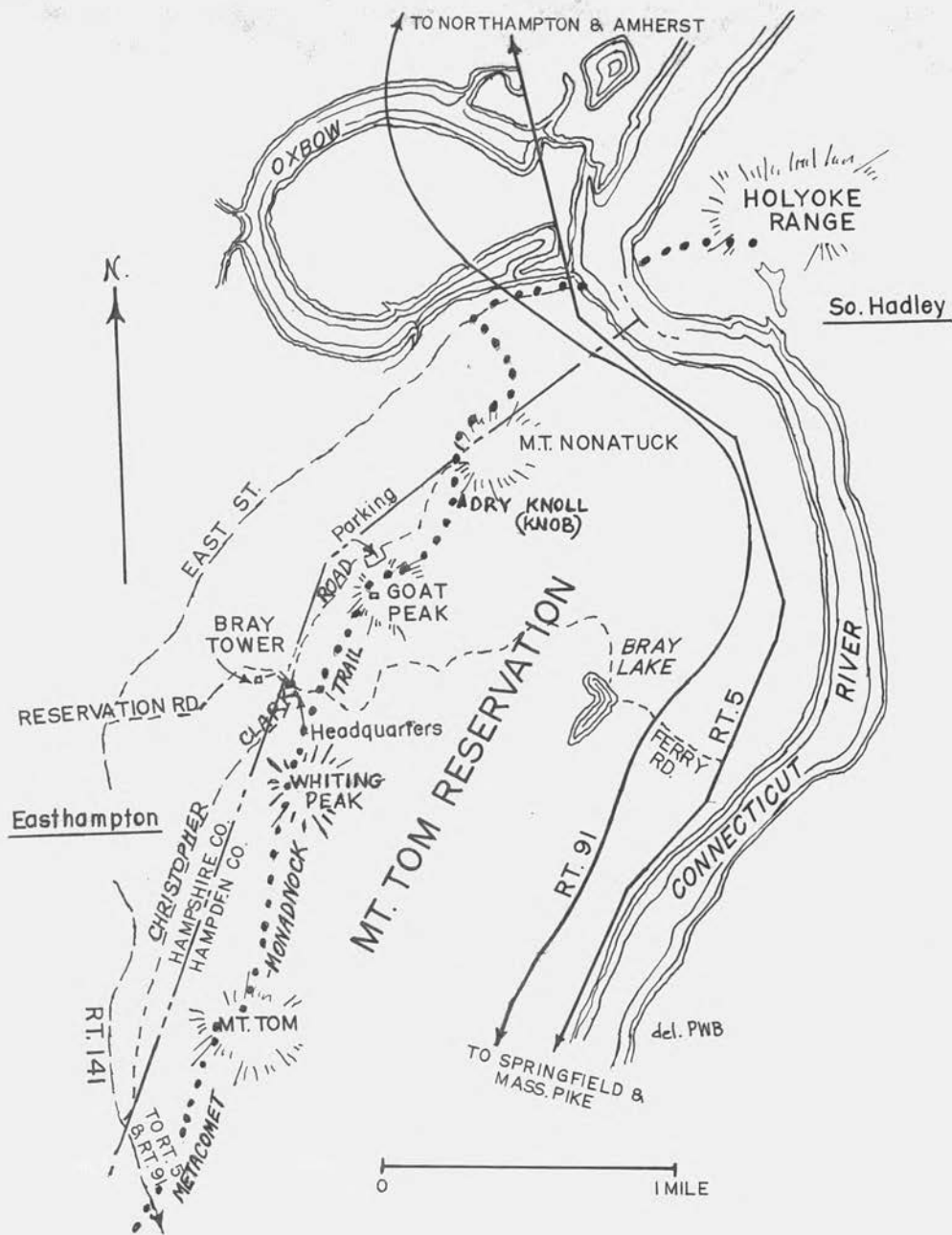
NORTH CAROLINA GULF STREAM PELAGIC TRIP

Sunday, October 7, 1979, from Hatteras Village, North Carolina Outer Banks: 7 a.m.-5 p.m., \$33.00 per person. Monday, October 8, 1979, is a rain date. Last October several Black-capped Petrels were seen well by all on board. Other species that may be encountered include Cory's Shearwater, Audubon's Shearwater, Bridled Tern, and more. On the Outer Banks shorebirds can be seen well and the passerine migration can be spectacular during suitable weather conditions.

For more information contact: Paul DuMont, 4114 Fessenden Street, N.W., Washington, D.C. 20016; phone (202) 353-8994 during evening hours.



According to a recent CBS News report, legal and ornithological precedents were established in Denmark when a parrot was called to testify in court to identify the individual who had been charged with abducting the bird from its rightful owner.



MOUNT TOM STATE RESERVATION

by David L. Fischer, Macomb, Illinois

Mount Tom State Reservation, located about 95 miles west of Boston, is among the state's premier birding areas. Although known to birders primarily for its hawk migrations, the reservation is situated in the heart of the Connecticut River Valley, New England's major inland avian migration route, and consequently attracts a wide variety of birds. The reservation encompasses nearly the entire Mt. Tom Range, a five-mile string of peaks which begins at the northeast end with the relatively low (750'-850') Mt. Nonotuck, Dry Knoll and Goat Peak, then drops through a low area known as Free Orchard Notch and finally rises up to the higher (1100'-1200') Whiting Peak and Mt. Tom (a two-mile distance with spectacular west-facing cliffs). South of the reservation, the same ridge-line continues at a lower elevation into central Connecticut. Nearly the whole reservation is forested; the south-facing slopes are primarily oak, the northern and eastern slopes a mixture of hemlock, white pine, and a variety of hardwoods. Open water and marshland areas are lacking with the exception of Bray Lake, which may attract a few grebes or diving ducks during the fall migration.

Mt. Tom Reservation can be reached from Interstate 91 in Holyoke by taking Rte. 141 1.6 miles west to the reservation entrance (Christopher Clark Rd.) near the Holyoke-Easthampton line. From US Rte. 5 north from Holyoke Center or south from Northampton, take Reservation Rd. (well marked). A third entrance connects to East St., Easthampton, about a mile west of the Massachusetts Audubon Society's Arcadia Sanctuary turnoff. The reservation is administered by officials of Hampden County and is generally open from 8 A.M. to sunset throughout the year. Numerous picnic facilities, hiking trails and scenic views are the focus of public usage. Camping is not permitted.

Ornithological interest in Mt. Tom is not new. Peregrine Falcons were reported nesting here as early as 1869. The first hawk migration studies were conducted by state ornithologist Joseph A. Hagar in 1936. In the years since, a multitude of birders and hawkwatchers have visited the area and much has been learned about hawk migration here. In this regard, a quantum leap in knowledge has occurred within the last decade as a result of the New England Hawk Watch project. Coincidental with hawk migrations, observers have also noted many other species migrating past Mt. Tom, especially waterbirds. Snow Geese by the thousands are expected in early April and late October. In addition, loons, Double-crested Cormorants, Great Blue Herons in numbers, Canada Geese, scoters, swallows, winter finches and many others are regularly seen moving past Mt. Tom. Anything might turn up on this avian highway, as was proved when three Canary-winged Parakeets winged by a group of puzzled hawkers in 1973.

The extensive forests of Mt. Tom may also play host to concentrations of passerines, which seem to filter through the trees along the ridges during good May and September days, though there is never the tremendous concentration of birds as at a coastal landbird trap. Still, this observer has several times listed 15 to 20 species of warblers from Goat Peak Tower during lulls in the day's hawk flight in September. State listers may find the area worth visiting for its regular Worm-eating

Warbler and resident Pileated Woodpeckers, Ruffed Grouse and Great Horned Owls, all of which frequent and sometimes nest in the main picnic area.

BIRDING HOT SPOTS

Though the focus of birding at Mt. Tom is generally the two hawkwatching towers, there are a couple of other spots worth checking at certain times of the year.

Bray Lake Area: This area has nesting Pileated Woodpecker, Ruffed Grouse, Wood Duck, and Louisiana Waterthrush. In mid-April it is good for Blue-gray Gnatcatcher, Winter Wren and early warblers. The best trail leaves the road 0.1 mile west of the lake (up the hill) and descends northward into swampy woods before dead-ending near a golf course. Park at the bottom of the hill in the space available along the road or in the Bray Lake parking lot. Explore other trails if time allows.

Christopher Clark Rd.: The reservation is so vast that often the best approach to birding the area is to systematically drive through it with your car windows open, stopping whenever you hear or see something of interest. Christopher Clark Rd. is best for this method since it has numerous pull-offs in which to park. Listen for the resident Worm-eating Warbler along the southern 0.3 miles of the road in May/June.

Metacomet-Monadnock Trail: This trail runs from Connecticut to New Hampshire and bisects the reservation, more or less following the ridgeline. The portion of the trail most often birded is the southern ascent from Rte. 141 to the Mt. Tom summit. This can be excellent early in the morning in May; nocturnal migrants seem to land and concentrate here before filtering through the trees northward. Many rarities have been found here in recent years (Hooded, Cerulian, Kentucky, and Mourning Warblers; Summer Tanager; Acadian Flycatcher; etc.) though the area is not well covered. This is another good place to look for the Worm-eating Warbler (just at base of the very steep part of the trail). Enthusiastic hikers are encouraged to complete the hike to the Mt. Tom summit for a spectacular view. The trail leaves Rte. 141 where the power lines cross the road 0.2 miles east of the Christopher Clark Rd. entrance; parking is available along the highway. Summer hikers reaching the upper slopes should beware of rattlesnakes and copperheads (the author has yet to find one in over twenty climbs).

HAWKWATCHING HOT SPOTS

Hawkwatching is generally done from two locations: Bray Tower and Goat Peak Tower. Bray Tower is used in the spring, Goat Peak in the fall. Though Goat Peak is probably the superior site at both seasons, road access is often not available in the spring. Bray Tower is sometimes used in late fall when wind chill renders Goat Peak Tower uninhabitable for any length of time.

Bray Tower: This tower is located near the reservation headquarters building (intersection of Christopher Clark Rd. and Reservation Rd.). Take your first left if coming in the Christopher Clark Rd. entrance. An excellent view of the Whiting Peak cliffs and the western horizon is obtained from the tower. Many birds pass directly over the tower so that

the limited visibility to the east is not usually detrimental. Comparatively little can be seen from the ground.

Spring migration begins in early March with the passage of the larger buteos and an occasional harrier, Goshawk, other accipiter or falcon. There is an early peak for these species around March 20 to April 5, and then a second peak about April 17 to the 27th in which Broad-wings, Ospreys, Sharp-shins and kestrels are the principal species. Best days seem to be on southwest winds; east winds are the poorest. Warm, gentle breezes are preferred by most species to cold, blustery conditions.

Goat Peak Tower: To reach this tower, proceed north from the intersection near the headquarters building and park in the large gravel parking area on the right (about 0.5 miles). From here, a 10-minute walk up a paved (restricted vehicle access) roadway will bring you to the tower. A cleared bluff just east of the tower offers excellent ground viewing when the area becomes crowded on September weekends. The view from the tower itself offers a complete 360° view of the horizon.

Fall hawk migration in New England begins with a trickling of birds in August, peaks in mid-September for numbers and in late September-early October for species, before ending with another trickling of the larger species in November. At Mt. Tom there is typically an early kestrel peak around September 10, a Broad-wing-Osprey peak within five days of the 17th, a long accipiter-falcon peak from about September 22 to October 10, and finally a Red-tailed-Red-shouldered Hawk peak during the last two weeks in October. In the fall any wind direction may produce a hawk flight at Mt. Tom as long as visibility is good and there is no precipitation. It has been shown that clearing weather after a period of rain (a high pressure system moving in behind a low) during the peak Broad-wing period will consistently produce massive movements of Broad-winged Hawks in New England. These conditions usually produce northwest winds and a large flight may result at Mt. Tom or, as in 1975 and 1978, the majority of the birds may pass to the east. A dry northeast wind, however, has seldom produced anything less than spectacular results. The 6,000 Broad-wings that passed Goat Peak Tower in about an hour's time on 9/18/69 was on such a wind. Accipiter flights also tend to occur on northeast or east winds. Curiously, best kestrel days seem to occur on westerly winds.

How many hawks can you see at Mt. Tom and when should you come? The time to come depends on what you want to see. What you actually see is largely a function of weather conditions, luck and patience. On any decent day in mid-September (as long as it's not raining, foggy, or threatening to rain) you should expect to see over a hundred hawks, mostly Broad-wings. In October, you may only average 2-3 hawks per hour on a poor day. Arrive by 9 or 9:30 A.M., if possible, to catch the lower, more exciting, early accipiter flight.

The table below lists seasonal totals from counts prior to 1978 at Mt. Tom. It is included to give the reader some idea as to the numbers of hawks observed here and relative abundance of each species. This data was collected and compiled by Mary and Sebastian Yenlin, Diane Hathaway, George and Helen Champoux, Tom Gagnon and the author.

Species	Fall Flights (1973-77)					Spring Flights	
	1973	1974	1975	1976	1977	1975	1976
Turkey Vulture	4	NC	17	31	19	48	15
Goshawk	11	13	10	12	20	12	10
Sharp-shinned Hawk	138	226	589	657	897	186	223
Cooper's Hawk	24	25	49	23	38	13	24
Red-tailed Hawk	28	14	89	37	102	94	14
Red-shouldered Hawk	7	4	16	15	5	94	53
Broad-winged Hawk	4136	5639	5036	2344	11778	277	440
Bald Eagle	2	0	2	3	1	0	1
Marsh Hawk	16	37	47	31	44	22	13
Osprey	112	83	182	112	199	95	56
Peregrine Falcon	2	2	4	1	2	0	0
Merlin	3	4	2	5	5	5	0
American Kestrel	115	189	332	252	203	113	47
Unident. & Other	7	28	87	31	19	12*	8
Total	4605	6264	6462	3554	13332	971	904

NC = not counted

* - includes one Swainson's Hawk

COLOR-DYED SHOREBIRD PROGRAM

In 1979, the Canadian Wildlife Service will be continuing an extensive program of banding and color-marking shorebirds in James Bay, with the objective of defining migration routes used by shorebirds on their journeys between the Arctic breeding grounds and wintering areas. Since 1974, over 38,500 shorebirds have been captured in southern James Bay. Much new information is being obtained on migration routes and strategies, and your assistance in looking out for and reporting color-marked birds would be very much appreciated and would contribute very substantially to the success of the program.

Feather dyes (yellow/orange) and colored leg bands (yellow or light blue) will be used to mark the birds according to age and date and place of capture. If you see a marked shorebird, please record details of: species, place, date, color-marks and, if possible, numbers of other shorebirds present. For color-dyed birds, please record the color and area of the bird that was dyed (e.g. entire breast, upper breast only, belly from legs to tail only, etc.). For color bands and standard metal leg bands please record which leg the bands were on, the colors involved, and the relative position of the bands if more than one was on a leg (e.g. right leg, blue over metal, etc.). A note should also be made whether the bands were below or above the "knee" of the bird.

Reports can be sent to Massachusetts Audubon Society, Natural History Services, Lincoln, Massachusetts 01773 or by phone (617) 259-9500.

SOME HIGHLIGHTS OF CONTEMPORARY RAPTOR RESEARCH

by Leif J. Robinson, Wellesley, and

Paul M. Roberts, Somerville

Allentown, Pennsylvania, is not a city you would want to visit for sight-seeing or for a cultural experience. But it is situated only twoscore miles from the historical mecca of hawkwatching in North America--Hawk Mountain, the first sanctuary in the world devoted specifically to the protection of birds of prey. Thus, Allentown was an appropriate gathering place for some 600 participants in the annual conference of the Raptor Research Foundation (RRF), November 3-6, 1978. During this meeting, a one-day session of the Hawk Migration Association of North America (HMANA) was held concurrently.

Seven simultaneous all-day workshops prevailed during the first day, ranging from climbing techniques, to methods of Peregrine Falcon release, to raptor rehabilitation. Of course, we could not attend them all, so our reporting will necessarily be spotty.

At the workshop concerning the status of the Bald Eagle, it became apparent that this species is at least holding its own throughout the continent and is probably expanding as the result of better breeding success since the turn of this decade. Exceptions are Chesapeake Bay, where recent pollution has had disastrous effects, and Maine. The number of eagles found at wintering sites has also continued to grow, although this might be attributed to more extensive coverage.

At the session devoted to captive breeding techniques it became clear that the most difficult aspect of hand-raising Peregrine Falcons is in getting the eggs fertilized. Female falcons will readily lay, but the males are reluctant to copulate. Thus, much discussion centered around artificial insemination techniques, which are now being employed with greater effectiveness than previously.

During the next day's session on raptor migration, Peter Dunne brought forth the fascinating possibility that some species (Merlins in particular) may migrate nocturnally, or at least when only the vaguest hint of light prevails. From several years of study at Cape May, New Jersey, Dunne and his colleagues have found that, although scores of Merlins may be seen hunting in the evening twilight, these birds will have left by first light of the next day.

This leads to the basic question--which raptors might fly at night? Presumably those with the least wing-loading, that is, the birds with the least body weight per unit surface area of wings (harriers are another prime example).

On Saturday, William Clark reported on Merlin migration at Cape May from 1971 to 1977, citing increasing numbers. In the autumn, Clark observed, most Merlins appear between September 15 and October 7. Approximately 80% of these birds are immature, with females, which greatly outnumber the males, arriving 3-5 days earlier. Spring flights contain proportionally fewer immatures (60%), with female to male ratios of 5.4:1.8 for immatures and 1.6:2.1 for adults. Adult males precede the females by several

days in the spring, when the bulk of the flight occurs between April 20 and May 10.

According to Clark, most Merlins migrate out of sight of the coast from earliest light, working in towards the coast to hunt late in the day. Merlin flights at Cape May begin about 2 p.m. and reach a peak about 3 p.m..

If any species was highlighted at the conference, it had to be the Merlin, heretofore one of the least studied North American falcons. In a workshop on the techniques and problems associated with assessing Merlin populations, Lynn Oliphant noted how little we know about the breeding status of this small falcon. Between 1968 and 1978, relatively few breeding Merlins have been confirmed throughout its range. Total known nests for the entire decade are approximately as follows:

<u>1-5 nests</u>	<u>6-10 nests</u>	<u>11-99 nests</u>	<u>100+ nests</u>
Ontario	British Columbia	Newfoundland (20)	Manitoba
Nebraska	South Dakota	Montana	Saskatchewan
Idaho	Alberta	Wyoming	
Yukon Territory	NW Territories	Alaska	
Quebec			
Minnesota			

Our ignorance of Merlin population trends is due, in part, to the difficulty of locating nests. The feisty male often displays on territory for as much as a week, only to abandon the site. Food exchange and copulation are often performed on more than one territory in the area. Furthermore, Oliphant has personally found Merlins, especially the males, to be much less aggressive than reported elsewhere. When checking nests, he was often unmolested until he was half-way up the tree! This lack of aggression creates a need to develop other methods of locating breeding pairs.

In his research in Saskatchewan, Oliphant has been observing Merlins nesting in urban areas, including city parks. Recently, many have been wintering in the Canadian prairie cities, feeding on the waxwings and Starlings which, in turn, are feasting on ornamental plantings. Strangely, all of the wintering birds seen in Saskatchewan have been females or immatures. Adult males are not seen until late February, when they are found chasing Horned Larks.

Third birds, usually 1st year birds of either sex, are regularly observed near every nest site in Saskatoon and are not subject to much aggression from the paired birds. Nesting pairs have been found within 100 yards of each other; the usual range is $\frac{1}{2}$ mile.

Although the mercury content in urban Merlins has declined over the last decade, the DDE and organochloride levels have not, despite the fact that these birds do not migrate to South America. Nevertheless, producing 4-5 birds per nest, the urban Merlin population is stable if not increasing.

Oliphant provided the visual highlight of the conference: an hour-long movie, with live narration, on Merlins breeding in Saskatoon, from

territorial establishment amid spring snows to training of the young in hunting techniques.

During the HMANA session, one of the more provocative talks was given by the first author of this article. From several lines of reasoning, he suggested that the flight of some 10,000 Broad-winged Hawks observed on September 13, 1978, at Mt. Wachusett, probably passed at altitudes two or three times higher than the generally supposed ceiling. There was a consensus at the session that measurement of Broad-winged Hawk flight altitudes is needed and that precise observations by hawk-watchers are possible.

Of local interest was Paul Spitzer's review of the status of the north-eastern coastal Osprey population. Once having the highest nesting density ever recorded, this area has suffered an 85-90 percent decline during the last thirty years, mainly due to pesticide-induced nesting failure. At current densities--118 active nests between Long Island and southeastern Massachusetts--a fledgling rate of 0.75 to 0.85 young per nest provides population stability. This production is currently being exceeded, and it appears that our Osprey is recovering, albeit very slowly.

Joan Dobbs and her associates at the University of California, Davis, described laboratory tests to determine what factors influenced food acceptance by Red-tailed Hawks. They found that color, size, and texture are all important. Using artificially-colored chick carcasses, the hawks selected yellow over red, blue or green. Mice weighing less than 7.5 grams (about $\frac{1}{4}$ ounce) were swallowed whole; larger ones were torn apart. A prepared foodstuff was accepted if it was small enough to swallow whole, but larger pieces were rejected upon contact with the hawk's talons.

Foraging behavior of Prairie Falcons was the topic of Bruce Haak of Oregon State University. From studies of 6 males and 4 female radio-tagged birds, he learned that individuals would forage in specific areas. However, between the incubation and nestling stages, changes would take place in foraging distance, elevation, and, in some cases, prey species. From the six male falcons, the mean home range was 180.2 square kilometers (about 70 square miles). After the young hatched, the home range of three males increased about 30 percent. Foraging distances up to 21 kilometers (13 miles) from the nesting site were recorded.

Wayne Nelson of Calgary argued that "only one of 10 published hypotheses of sexual size dimorphism in raptors appears to explain the direction and degree of size differences and the upper and lower size limits for each sex."

Since male birds use dangerous talons in territorial and courtship behavior, the smaller male will be favored because of its increased speed and agility. Small males will also be favored in capturing small swift prey in the air, but larger males will be favored in ground fighting with larger, sluggish prey.

"The proportion of aerial to ground fighting establishes the optimal size for males. The size for females is influenced by factors such as heat concentration, size and type of prey, and habitat," Nelson said.

Of special local interest, Michael Root reported on the status and breeding ecology of uncommon raptors in northwestern Connecticut. In the second year of his study with Peter DeSimone, 20 Gosawks, 7 Red-shouldered Hawks, 7 Barred and 3 Great Horned Owl nests were found within a 15 mile radius of Sharon, Connecticut. The investigators are monitoring as many nests as possible, gathering data on nesting habits, territory size and utilization, food habits, and the interrelationship of these species within their nesting territories.

NOTES ON GREAT GRAY OWLS

by Tad Lawrence, Cambridge

A recent study in northeastern Finland, by P. Erkki and K. Loisa, focussed on nesting Great Gray Owls (Strix nebulosa) in spruce dominated mixed forests with clear areas of bog. It appears that these birds prefer this habitat, for all but one of the seven nests observed had been constructed by other species and were used without alteration by the owls.

Only the female incubated the eggs and cared for the young. The smaller male did the vast majority of hunting, primarily during the "darker half of the day," until the young could be safely left unattended. The female was provided with at least four voles (Microtus) daily. After the young hatched, as many as 14 were brought to the nest, comprising 88 per cent of the total prey. In light of the recent irruption of Great Gray Owl, this prey species is of special interest, for Microtus is widespread throughout the northeastern United States.

The authors note that the striking sexual dimorphism of these owls seems to be adaptive. The female's larger size is needed for thermal regulation during incubation; the male's smaller size aids agility in hunting. (This trait is common among raptors.)

I am unaware of anyone reporting size differences among birds seen during last winter's irruption. I would appreciate information from anyone who saw several birds, particularly on the same date. Write to the author at 17 Willard Street, Cambridge, Massachusetts 02138.

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By Appointment

THE BROAD-WINGED HAWK FLIGHT OF SEPTEMBER 13, 1978

by Paul M. Roberts, Somerville

One of the most spectacular hawk flights ever witnessed in New England, totalling 10,213 hawks, was observed from Mt. Wachusett in Princeton, Massachusetts on September 13, 1978. This includes 10,086 broad-winged Hawks (Buteo platypterus) which appear to have been part of the single biggest broadwing movement ever recorded in the northeastern United States.

The weather certainly appeared favorable for a good flight when four observers, Nancy Clayton, Leif J. Robinson, Michael Sporer and I arrived on the summit that morning. A clearing high pressure system had arrived late on the afternoon of September 12, pushing out a low pressure system which had given us two days of strong southwest winds and rain. At 8 a.m. EST, the temperature was 46° F., with chilly winds estimated at 20 mph blowing out of the northeast. Humidity was low, and with Greylock standing clearly in the west and Boston shimmering in the sunlight to the east, the visibility was the best I've ever seen on Wachusett.

We were dismayed when we saw only 129 hawks in our first four hours. Several observers grumbled about departing imminently when, at 11:52 a.m. EST, Mike called out that he had 6 broadwings in a thermal northeast of the summit. Our second biggest kettle of the morning! Mike followed the birds, uttering an expletive as he discovered the biggest kettle he had ever seen. Several hundred broadwings were rising in a tight ball above the first small kettle.

Mike began to count the birds while I quickly looked to the top of the large kettle to see if any birds had already peeled off. I found a river of broadwings stretching from horizon to horizon. Some had already passed over us, gliding so high that we had initially failed to perceive them. We can't know how many birds had already passed from our view, but within the next fifteen minutes we tallied 2387 broadwings, almost invisible to the naked eye, passing directly over the summit. Another 1598 were recorded over the next half hour.

We were incredulous. Approximately 4000 hawks in 45 minutes. Our necks and eyeballs ached, but with adrenalin surging through our systems, we were in a state of euphoric shock.

The altitude of the birds we had seen compelled us to continue to scan the skies with our binoculars and scopes. There was little activity until approximately 1:30 p.m. EST when Leif, using his 20x, 80 mm Jaeger scope, discovered a major kettle forming to the north of the mountain. The rest of us ran to our scopes, including Bushnell 20x and Tasco 20-60x models (60mm), but either our optics were inadequate or the objective was too minute, for none of us could locate the kettle in our scopes. After that kettle moved on, Leif discovered a second kettle forming in the same spot. With his scope locked on that location for the next hour, Leif picked up kettle after kettle forming over the same terrain. As these kettles moved southwest, they usually passed within range of our 60 mm scopes, and often our binoculars, but they almost always remained beyond the range of our unaided vision.

Following another brief lull, Mike Sporer called me over to his scope, advising me to look through it and "think hawk." I thought he must have had a Peregrine Falcon, or a Goshawk, but when I put my eye to the glass I saw nothing. I looked again. What now appeared to be a minute drop of condensation on the lens was moving slowly -- horizontally. A kettle! For more than an hour, kettle after kettle formed in the same spot north-east of the summit and passed east of the lookout. This stream of hawks, our third distinct alley of flight, did not abate until almost 3:30 p.m. EST.

Suddenly, the kettles disappeared. Individual birds began to materialize in front of us, often coming in from below the summit. For half an hour we enjoyed our best views of birds -- when we could focus our eyes that close.

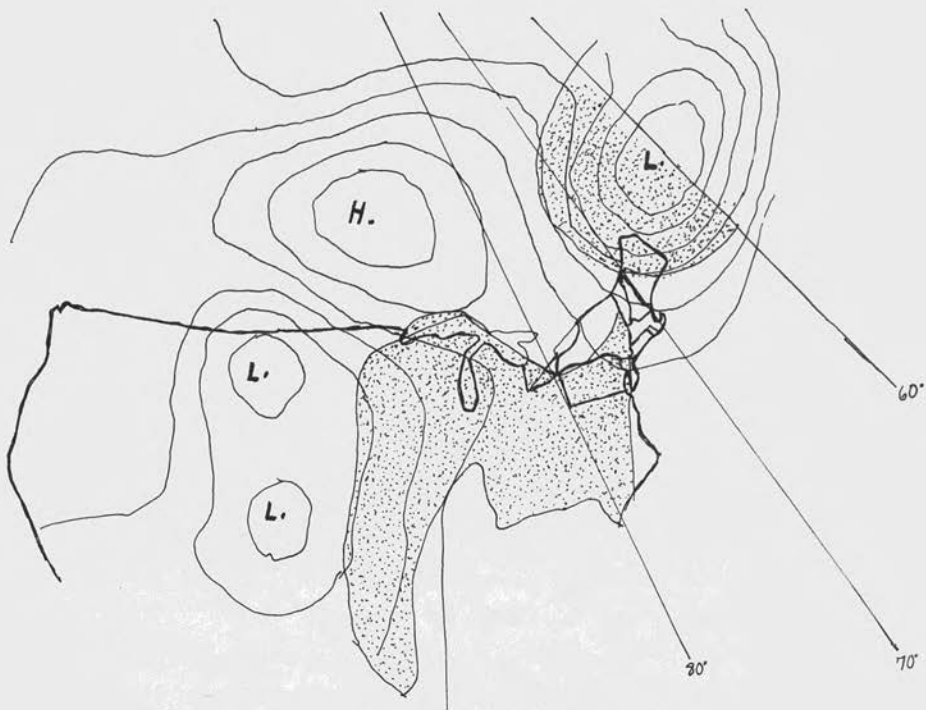
Our minds were boggled. That evening we independently recorded our recollections of the day's events and our emotions. One observer attempted to write poetry for the first time in decades, but none of us could capture in words the floodtide of emotions which had overrun us that incomparable day. As the emotions ebbed, we began to seriously examine what we had observed and recorded, conscious that we had seen something rare and significant.

The incredible totals compelled us to question our counting techniques. Had we grossly overcounted the flight? We think not. Our procedures were as follows: at least one person always scanned the northern skies for hawks. When birds were sighted, two or more observers would count them, singly or estimating by tens, and the lowest tally would be recorded next to the minute when the birds were first spotted. If the birds peeled off within our vision, we would recount for verification, recording the "hardest" total. In several instances recounts revealed that our first estimates had been low. Meanwhile, the fourth observer would glance in the opposite direction to ascertain if there was any activity behind us.

The flight was so structured that it was relatively easy to count. Apart from the first tidal wave of birds, which almost certainly exceeded the 750 we were able to count, only two kettles exceeded 500 birds. The remaining kettles, ranging from 100-500 hawks, streamed by in three distinct alleys over a 3½ hour period.

We were grateful that there had been four observers on the summit. If only one or two people had been there, thousands of birds would probably have been missed. Even with four people scanning the skies, perhaps as many as 2-3,000 birds might have passed unseen if it hadn't been for Leif's scope and his intelligent use of it. Perhaps our greatest mistake was failing to notice and count species other than broadwings in the kettles. We did see 46 Ospreys, many of which were majestically topping off kettles, but we undoubtedly overlooked Sharp-shinned Hawks, American Kestrels and other species.

Believing that our total is credible, we questioned what factors might explain the magnitude of the flight. We first looked to the weather. Leif obtained synoptic weather maps for North America for the 850, 750 and 500 millibar levels, or approximately 5,000'; 10,000'; and 20,000' respectively.



WEATHER SYSTEMS, SEPTEMBER 12, 1978

6 p.m. EST, 850 mb
(shading denotes cloud cover)



PREDOMINANT SURFACE WINDS

SEPTEMBER 13, 1978

On September 10, an intense low pressure system hung over the Atlantic east of Newfoundland while two weak lows hovered over James Bay and the Wyoming-Montana border. A small high pressure system, which I've arbitrarily termed the "Keewatin high," was forming over the Keewatin district of Canada.

On the 11th, the eastern low intensified as it moved eastward slowly. The low over Montana remained there, deepening. Clouds enveloped the entire northern U.S. from the Pacific to Michigan, and all of southern Canada from Vancouver to New Brunswick. The shroud extended down the Atlantic coast from the St. Lawrence to southern New Jersey.

The eastern low continued to move eastward on the 12th; the Montana low remained stationary. The Keewatin high, however, began to bulge almost due south, intersecting the two low pressure systems and clearing the skies over the Canadian side of the Great Lakes and into northern New England (see map). By 7 p.m. EST the entire northern U.S. from Nebraska to the Atlantic was overcast, with the notable exception of a channel of clear skies almost bisecting New England. At the northern tip of this swath of sunlight, in southeastern Quebec, winds at 5,000' were 21-31 mph out of the northeast. In the southwestern corner of the province winds were from the north at 15-25 mph.

The arrival of the polar front in southeastern Canada and northern New England, following the warm winds and rain of the 11th and 12th, brought very cold air in over rather warm earth. In Boston, which is unusually warm during this season because of its coastal location, the highest temperature on the 13th was 20° F. below the high of the previous day. In the corridor of dry sunny skies, conditions were ideal for the development of powerful thermal updrafts. The positions of the two dominant air masses in the northeast, the low off Newfoundland and the polar high shooting almost due south, provided modest-to-strong winds which blew thermal bubbles in the desired southerly direction and provided a tail wind.

New England field reports confirm the impression that these conditions were ideal for Broad-winged Hawk migration. On the 13th, a number of major hawk watching sites in the northeast recorded their biggest broadwing flights of the year; in some instances ever. Mt. Tom had 3,822; Southwick, 2,429; Watertown, Connecticut, 4,186; Hook Mountain, New York, 4,378; and of course Mt. Wachusett, 10,086. The same high pressure system presented Hawk Mountain with its all-time record-breaking flight of 21,488 Broad-winged Hawks on the 14th. Clearly, the Keewatin high had produced one of the most extraordinary hawk flights ever recorded in the northeast. (Although few non-raptorial diurnal migrants were reported on the 13th and 14th, one must question if there was not a major nocturnal migration during that period, enabling large numbers of passerines to "blow through" New England.)

Yet the question remains: why did Mt. Wachusett have the largest hawk flight reported in New England? We can only speculate.

The accompanying flow table illustrates that Little Round Top in Bristol, N.H., Pittsfield and Mt. Everett in western Massachusetts, and Salisbury and West Hartland in western Connecticut, had little perceived migration. Significant hawk activity was observed between the Uncanoonucs and Derry in New Hampshire, and Westhampton and Wachusett in Massachusetts. This concentrated activity began and ended earlier, and was of much shorter duration, in the western portion of this corridor than in the eastern half. Mt. Tom had 91.8% of its broadwings between 10:30 a.m. EST and 1:00 p.m.; Southwick, 94.2%; and Westhampton, 99.5%. Warner Hill, in Derry, had well under half its hawks during those $2\frac{1}{2}$ hours and Wachusett had only 41.8%.

The structure of the flight, studied in conjunction with the local surface winds map, leads to the following extended hypothesis regarding the origin and nature of the flight over Mt. Wachusett.

Either the sudden drop in temperature, the excellent thermal conditions, the favorable winds, or any combination thereof, induced large numbers of Broad-winged Hawks to migrate within a relatively short period of time.

As the hawks moved quickly into northern New England, those in the western portion of the corridor of sunny skies encountered westerly winds which caused some drift eastward. They compensated by cutting west or southwest as they progressed from thermal to thermal, but there was some general drift to the east. Broadwings migrating out of the maritimes, however, had northerly or northeasterly winds which carried them south or southwest, requiring little or no compensatory action.

Assuming that the Atlantic coast functioned as a leading line, the flight paths of substantial numbers of broadwings converged as they approached the coastal counties of southern Maine and New Hampshire. The combination of westerly winds less than 60 miles inland and easterly winds off the ocean probably directed the birds into a relatively narrow front. Given these conditions, one could hypothesize that the western birds, travelling shorter distances, would arrive earlier. They did. One might also expect that the eastern portion of the corridor, presumably drawing birds from a larger area, would contain more birds. It did.

Continuing this line of speculation, as the eastern birds approached the Fitchburg--Leominster region, they encountered a series of hills northeast of and essentially parallel to Mt. Wachusett. Powerful thermals were rising off these hills, which increase in elevation as you proceed southwest. When it became obvious that some broadwings were achieving high altitudes very quickly using the lift of these thermals, birds from a fairly wide radius streamed into those columns of rapidly rising air. As the birds rose quickly, the northeast winds blew their thermals southwest, creating a thermal street in the direction the birds were heading. As the hawks peeled off from their kettles with a running start, they used the tail winds to achieve unusually high land speeds. The sight of hundreds, then thousands, of birds rocketing upward attracted additional thousands from an even wider radius.

NEW ENGLAND HAWK FLOW TABLE

SEPTEMBER 13, 1976

TIME (EST)	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30
Frankfurt, ME	(0)		(19)		(0)		(13)		(0)
Bristol, NH	-	5	17	15	4	9	6	7	6
Hopkinton, NH	-	-	-	-	-	-	-	-	-
Derry, NH	-	0	0	0	3	0	0	0	4
Uncanoonuc, NH	-		(17)		(683)		(318)		(98)
Wachusett, MA	1	4	48	5	6	18	0	2	2387
Mt. Tom, MA	1	21	22	145	67	195	767	413	1937
Westhampton, MA	-	-	-	-	-	-	283	0	200
Pittsfield, MA	(0)		(14)		(97)		(7)		(0)
Southwick, MA	23	3	16	31	60	0	22	56	820
W. Hartland, CT	-	0	0	0	1	0	0	2	0
Mt. Everett, MA	-	2	5	1	3	1	4	0	0
Salisbury, CT	-	-	-	-	16	20	4	143	325
Watertown, CT	-	2	6	10	10	4	-	-	-
Brookfield, CT	-	-	-	0	8	7	0	56	27
Hook Mt., NY	5		(70)		(98)		(18)		(9)

	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	TOTAL
Frankfurt, ME		(0)		(3)		(0)	-	-	-	-	28
Bristol, NH	28	3	4	0	0	4	0	4	0	-	112
Hopkinton, NH	-	-	-	-	-	-	-	0	0	-	0
Derry, NH	346	557	1071	29	-	-	-	-	-	-	2010
Uncanoonuc, NH		(17)		(159)		(228)		(105)		-	1625
Wachusett, MA	1598	233	530	1470	1130	1226	1287	137	4	-	10086
Mt. Tom, MA	247	144	65	26	0	48	7	41	85	91	3822
Westhampton, MA	-	400	2	1	-	-	-	-	-	-	887
Pittsfield, MA		(5)		(5)	0	0	0	0	0	0	128
Southwick, MA	1350	41	0	7	0	-	-	-	-	-	2429
W. Hartland, CT	0	0	1	3	0	-	-	-	-	-	7
Mt. Everett, MA	0	0	0	0	6	0	-	-	-	-	22
Salisbury, CT	6	121	6	16	-	-	-	-	-	-	657
Watertown, CT	-	1097	1	304	1576	4	717	452	3	-	4186
Brookfield, CT	14	14	16	17	-	-	-	-	-	-	159
Hook Mt., NY		(1)		(124)		(4015)		(36)		(0)	4378

Much of what we observed supports the thermal street hypothesis. The hawks moved in three distinct alleys, each of which was sustained for approximately one hour. Within these alleys, the hawks were always discovered kettling to the northeast of the summit, with the kettles moving to the southwest. When the birds peeled off, they would glide over or past the mountain without re-kettling within our vision and with no precipitous increase in their glide angles. Furthermore, they were always flying quite high, generally at or beyond the range of unaided human vision and often at the limits of binoculars-assisted vision. Despite their apparently high altitude, the hawks also appeared to be moving very quickly. We never saw them with wings tucked back in a steep glide nor at any time prior to 3:30 p.m. EST did we observe sustained flapping by any number of broadwings.

The apparent altitude and speed of the hawks caused us to question how high and how fast broadwings can fly. We have never seen them flying higher or faster than they appeared to be on the 13th. We had only two indications of the birds' actual altitude. The hawks which flew directly over the summit, exposing most of their ventral surface area, were at the very limits of unaided human vision. Regrettably, we can find no references in the literature regarding the distances at which humans can first perceive broadwings offering close to maximal surface exposure.

We did observe a kettle of 150+ broadwings rising into a cloud in the second alley. Leif's research revealed that the cloud base was between 8-10,000' ASL. As these birds seemed to be some distance (horizontally) from the summit, visible through Leif's scope only, the hawks were probably a minimum of 7,000' above the terrain, an altitude considerably higher than any reported by the New England Hawk Watch glider study.

The apparent speed of the birds was also thought-provoking. Using extremely rough calculations, Leif estimated that the hawks might have been flying more than 70 mph in their glides, perhaps reaching 100 mph. These figures are so radical, however, that Leif hesitated to even mention them to me.

Independently analyzing the structure of the flight through a nine-state region on the 13th and 14th, I found a pattern suggesting that a wave of broadwings might have been moving through New England at an average ground speed of 70+ mph over a period of several hours. However, there is absolutely no means of proving that the wave recorded contained the same individual birds.

When Leif and I began to discuss flight speeds, the similarity between our estimates tantalized us. We agreed it was necessary to more closely examine the parameters of flight of the broadwing and other hawks.

The flight of September 13, 1978, generated many questions but few answers. How high can broad-winged Hawks fly? Do observers often fail to perceive hawks because the birds are flying high, out of the range of human vision? Do we miss flights because we aren't using our scopes often enough? How far away can people perceive hawks flying directly overhead? Approaching head-on? Flying parallel to, but some distance from the site?

How fast do broadwings and other hawks fly? What land speeds can the broad-wing attain, and how long can it sustain such speeds in migration?

This fall some members of the Eastern Massachusetts Hawk Watch will attempt to begin to answer some questions regarding the parameters of hawk flight. An experimental program using a cinetheodolite, a cross between a surveyor's transit and a 35 mm movie camera, will be conducted on Mt. Wachusett. We hope to gather data on the altitudes, glide angles, ground speeds and headings of broad-winged Hawks in migration. Weather Services Corporation of Bedford, Massachusetts, is generously providing the watch with the most comprehensive weather data available to aid our analysis of the fall migration.

We may never see another hawk flight like that of September 13, 1978, at Mt. Wachusett, but in years to come, perhaps we'll better examine and understand the flights we do observe.

ACKNOWLEDGEMENTS

I owe a debt to everyone who has participated in the New England Hawk Watch, especially those individuals who have contributed many hours documenting the hawk migration through eastern Massachusetts. This paper would not have been possible without their contributions. I must also extend special thanks to Nancy Clayton, Leif J. Robinson and Michael Sporer, and to Seth Berry, Andrew Bihun, Jr., Neil Currie, Donald Hopkins, Seth Kellogg, Diann MacRae, Alex Nagy, Julie Roberts and Stiles Thomas, all of whom have graciously provided data from their sites or regions.

"Birders"

The Outer Cape has long been famous for its impressive bird life. Both species diversity and bird populations are large and varied. From mid-July to November 1st the bird migration is spectacular! Henry David Thoreau, William Brewster, Arthur Cleveland Bent, Henry Beston, and Ludlow Griscom are among the great ornithologists and naturalists to study here.

The **Red River Motel** located on Route 28 in South Harwich on the Chatham Line has been purchased and is managed by a group of birdin' fools. We are close to the famed Monomoy Island Wilderness Area, Chatham - which is tremendous for fall land birds, Nauset Beach - shorebird Heaven and the surrounding waters of Cape Cod which abound with hard to get pelagic species. We also keep abreast of any rarities or unusual birds in the area and have an excellent local knowledge of what is going on.

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THE SPRING MIGRATION

MARCH-MAY 1979

by Richard S. Heil and Robert H. Stymeist

March was very mild, cloudy and somewhat drier than normal. The temperature averaged 42.5°, 4.4° above normal--the 10th warmest March on record. The high reading of 72° was recorded on the 23rd; the low mark was 19° on the 16th. Precipitation totaled 3.03 inches, 0.98 below normal; the most in any 24 hours was 1.19 inches on the 6-7th. This was the first March since 1925 without measurable snowfall. March did not live up to its windy reputation, the average speed being only 13.1 m.p.h.

April was very near normal but was very cloudy. The temperature averaged 48.7°, the highest temperature was 77° on the 23rd and 24th; the low was 33° on the 8th. The last freeze for spring came on March 28th, 11 days earlier than average. Inland suburbs, however, continued to have frequent freezes, and usually also had some during May. Precipitation totaled 3.19 inches, with 1.19 inches on the 27th. Southwest winds were blowing on the 22nd and 28th. A big flight, mostly kinglets and White-throated Sparrows occurred on the 23rd following southwest winds on the 22nd.

May was warm, wet and cloudy. The temperature averaged 61.1°, 2.5° above normal and the 10th warmest in 109 years. A two day heat wave occurred on the 9-10th, the exact anniversary of the remarkable cold wave and snowstorm in May 1977. The mercury reached 95° on the 9th, topping the 90° record set in 1889; on the 10th, 94° tied the record set in 1896. The low was 45° on the 2nd, with the last week being mostly cool and wet. Rain was frequent, with measurable amounts on 16 days, 5 more than average. This was the most in May since 16 in 1956; the record is 18 days in 1954. The total was 4.25 inches. Showery periods of considerable length dampened most birders' spirits with rain on the 12th-15th, the 18th-21st, and the 23rd-26th. Southerly winds were reported on the 3rd, 4th, 9th (the biggest wave), 12th-14th, 21st and 27th-30th. Fog was reported on 18 days during the month.

LOONS THROUGH HERONS

Red-throated Loons staged a heavy flight past Gay Head, Martha's Vineyard, on April 5th, when 750 were counted at a rate of 10/minute for 75 minutes. An early April concentration of Red-necked Grebes along the bay shore between Wellfleet and Provincetown totaled some 2000+ individuals on the 4th. This number far and away exceeds any count in New England and may well be a record for North America. Although the interpretation of weather's effect on avian movement is seldom definitive and often risky, the period from March 29th to April 5th did feature a continuous condition of overcast, fog, and some precipitation; with N or E winds during more than half the period. It seems likely that these flocks originated from coastal localities north of Cape Cod, perhaps being funneled southwest into the bay during the unsettled weather. By April 8th the flocks had "dwindled" to 800+. Following two records in December was a sighting of a Sooty Shearwater on March 14th off Gay Head. A Magnificent Frigatebird was a startling discovery at Penikese Island, Buzzards Bay, May 31. The most recent local record is of a female frigatebird noted soaring off Monhegan Island, Maine, May 21, 1978. Normally a rare spring migrant on Cape Cod, very early Cattle Egrets were reported from 7 Cape localities and Martha's Vineyard in the period of March 28-31.

Common Loon:

3/3	Nantucket, P.I.	25, 22	BBC
4/4-16	Nantucket	50	C.Jackson
5/12,26	P.I., off P'town	3, 50 mig.N-NE	B.Cassie, W.Petersen#

Red-throated Loon:

4/5,15	Gay Head-M.V., Nantucket	750, 125	V.Laux, M.Litchfield
5/12,20	P.I., Winthrop	1, 1	B.Cassie, C.Jackson#

Red-necked Grebe:

3/3, 8	Cape Ann, M.V.	19, 32	R.Heil, V.Laux
3/20, 30	Manomet, Dennis	200+, 91	R.Heil#, B.Nikula
4/4, 8	Outer Cape Cod (bay shore)	2000±, 800+	D.McNair, W.Petersen#
4/4,8	Manomet, Dennis	250, 106	MBO staff, W.Petersen#
4/11	S.N.	150	R.Pease

Horned Grebe:

3/8, 23	M.V., S.N.	150, 90	V.Laux, R.Pease
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3/24, 25	P.I., Quincy Bay	65, 83	R.Heil, D.Brown
4/14, 18	Squantum, P.I.	30, 38	BBC, J.Murphy
4/20, 28	Lakeville, Acoaxet	1, 15	R.Heil#, SSBC
5/19-22, 29	Marblehead Neck, Nantucket	1, 2	R.Stymeist#, C.Faunce
Pied-billed Grebe:			
3/21, 31	Plymouth, P.I.	2, 3	R.Heil, G.Gove
3/10-30	3 localities	singles	v.o.
4/15, 17	S.Hanson, P.I.	3, 2	W.Petersen, G.Wilson#
Northern Fulmar:			
4/28, 29	Stellwagen B., 5 mi. off P'town	10, 50	M.Kasprzyk, R.Prescott#
5/14, 26	Stellwagen Bank	30, 60(4 dk.)	R.Prescott#, W.Petersen#
Greater Shearwater:			
5/26	Rockport(A.P.), Stellwagen Bank	1, 12	R.Heil, W.Petersen#
Sooty Shearwater:			
3/14	Gay Head-M.V.	1	V.Laux
5/21, 22, 26	Nantucket	1, 6, 75	C.Faunce
5/26, 28	Stellwagen, Rockport	150, 6	W.Petersen#, C.Leahy
5/31	Barnstable	25	R.Pease
Manx Shearwater:			
5/12	off P'town	1	W.Petersen
Wilson's Storm-Petrel:			
5/21, 26	Nantucket, Stellwagen Bank	160, 300	C.Faunce, W.Petersen#
Gannet:			
3/14, 19	M.V., Nantucket	450, 95	V.Laux, E.Andrews
4/15, 28	Nantucket, P.I.	350+, 29	M.Litchfield, BBC
5/26	Rockport(A.P.), Stellwagen B.	23, 60	R.Heil, W.Petersen#
Great Cormorant:			
3/3, 3-4	Nantucket, Lakeville	300, 1 ad.	BBC, W.Petersen
3/25, 4/14-16	Quincy Bay, Nantucket	519, 4	D.Brown#, C.Jackson
5/13	N.Scituate, Stellwagen Bank	12 imm., 4 imm.	W.Petersen#, PMS
5/22, 26	Halifax, Stellwagen Bank	2, 1 ad.	W.Petersen#
5/12-26	Plymouth	4-1 imm.	W.Petersen
Double-crested Cormorant:			
4/22	Gloucester, Wellesley	370, 189	BBC, B.Cassie
4/22, 24	Attleboro, S.Natick	75, 150	K.Anderson, F.Hamlen
4/26, 29	Mt.A., Lakeville	107, 70	R.Stymeist, D.Briggs
5/thr., 26	Nahant (Egg Rock), P.I.	1000, 205	R.Stymeist, BBC
Magnificent Frigatebird:			
5/31	Penikese I.-Buzzards Bay	1	D.Masch + v.o.
Great Blue Heron:			
3/10, 25	Duxbury, Orleans	3, 6	BBC, S.Reade
3/4-31	6 other localities	8 inds.	v.o.
4/1-10	9 localities	24 inds.	v.o.
4/11-20	10 localities	38 inds.	v.o.
4/21-29	5 localities	27 inds.	v.o.
5/6	Boxford S.F., Marshfield	4, 5	J.Berry, BBC
5/27	P.I.	5	R.Stymeist
Green Heron:			
4/22-30	general arrival 4/22-25	17 inds.	
5/3, 8	Bolton Flats, Squantum	4, 4	M.Lynch, W.Cornwell
5/12, 20	P.I., Saugus	12, 3	B.Cassie, C.Jackson
Little Blue Heron:			
4/5, 10	Manchester	2 ads., 5 ads.	H.Weissberg, C.Corley#
4/13, 16	Duxbury, Rowley	1, 1	W.Petersen, E.Smith
5/5, 7-20	P'town, P.I.	1, 1 ad.	R.Veit#, v.o.
5/16-17, 19-30	Mt. A., Nantucket	1 ad., 1 sub-ad.	S.Denison#, C.+E.Andrews
Cattle Egret:			
3/25, 25 on	Woods Hole, M.V.	1, 1-2	P.Garrey, v.o.
3/28-31	six Cape Cod localities	singles	fide B.Nikula
4/8-28	Ipswich	1-8	BBC#
4/15, 22	Norfolk, Marshfield	1, 2	R.Butler, SSBC
5/5	Topsfield, Ipswich	6, 5	R.Stymeist + T.Lawrence
5/6, 26	Marshfield, M.V.	2, 1	BBC, V.Laux
Great Egret:			
3/17 on, 29-31	Middleboro, WBWS	1, 1	W.Petersen#, W.Bailey
3/31	Acoaxet	1	W.Petersen
4/13, 29	Duxbury, Neponset	1, 1	W.Petersen, S.Higginbotham#
5/5, 27	P.I.	1, 1	BBC
5/8-20, 22	Squantum, S. Hanson	max.4, 2	R.Emery#, W.Petersen#

Snowy Egret:			"first arrivals"	fide B.Nikula
3/24	lower Cape Cod			H.Weissberg, M.R. Barnett
4/1, 2	Manchester, P.I.		1, 5	BBC
4/14, 15	Squantum, Essex		25, 28	SSBC, BBC
5/13, 27	P.I.		20, 10	C.Jackson, BBC
5/20, 26-28	Saugus, M.V.		30, 35	
Louisiana Heron:				
4/13	Marshfield		1	A.Bates
5/22, 26-28	P.I., M.V.		1 ad., 1	M.Kasprzyk#, BBC
Black-crowned Night Heron:				
3/21, 22	Plymouth, Squantum		3, 3	R.Heil, M.Purder
3/25 on, 4/15 on	Brookline, P.I.		2 imm., 43	D.Arvidson, G.Gove
4/26, 27	Squantum, Manchester		47, 100	D.Brown, H.Weissberg
5/20, thr.	Saugus, Cambridge		15, max. 22	C.Jackson, R.Stymeist
5/26-28	M.V.		25	BBC
Yellow-crowned Night Heron:				
4/8, 15	P.I., Harwichport		1 ad., 1	R.McHale#, E.Stevens
5/13, 20	P.I., Annisquam		1 ad., 1 imm.	T.Raymond, H.Wiggin
Least Bittern:				
5/12 on, 5/13 on	P.I., Wayland		1, nest. pr.	T.Leverich, R.Forster
5/13, 20	Swampscott, Lynnfield		1, 2	S.Zendeh, H.Wiggin#
5/22, 26	Marshfield, W.Newbury		1, 1	W.Petersen, fide R.Emery
American Bittern:				
4/12, 16	E. Middleboro, Lynnfield		1, 1	K.Anderson, E.Smith
4/18 on, 26	S.Peabody, Concord		max. 2, 1	R.Heil, R.Forster
4/26, 5/12	Framingham, P.I.		1, 3	R.Forster, R.Stymeist
5/22, thr.	Bolton Flats, 6 localities		2, singles	Harris, v.o.
Glossy Ibis:				
4/6, 8	E.Boston, P.I.		1, 8	S.Zendeh, R.Heil
4/14, 15	Squantum, P.I.		18, 28	S.Higginbotham, J.Reed
4/16, 23	M.V., S.Peabody		10, 16	V.Laux, R.Heil
5/8	Nauset, Topsfield		14, 16	W.Bailey, R.Forster#
5/6, 19	Marshfield, P.I.		22, max: 33	BBC

WATERFOWL

A single Brant at the Bolton Flats April 16 was a rare Worcester County record for this species "on the ground." There are two possible regions from which vagrant White-fronted Geese in New England might originate. The race gambelli of north-central and western Canada is a common migrant on the Great Plains and now regular (annual), particularly in the fall, along the Atlantic Coast from N.J. south. The Greenland race flavirostris migrates across the North Atlantic to winter mainly in the British Isles. Bill color separates adults in the field, gambelli having a pink bill, yellow or yellowish-orange in flavirostris. There are only five Massachusetts specimens of White-fronteds extant, all are immatures, and all are referable to flavirostris. The Greenland race is presumably less likely in spring, and in fact all racially examined sight records and the five specimens are all fall birds. Gambelli, although also far more likely in the fall, would be the expected race in any rare spring record. There are, however, no gambelli specimens from this state for any time of year. With these points in mind, an adult White-fronted Goose, reportedly with an orange bill, frequenting the Newburyport area April 8-24, was startling if of a wild origin.

Mute Swan:				
4/20, 5/6	Halifax		4, 5 fly. N.	W.Petersen#, K.Anderson
5/20, 22 on	Westport, Ipswich		43, pr.+4 yg.	BBC, R.Stymeist#
Canada Goose:				
3/10, 24	Marshfield, P.I.		400, 800	BBC
4/14, 5/5	P.I.		1000, 1000	BBC
Brant:				
3/12, 21	Ipswich, Plymouth		70, 580	J.Thomas, R.Heil
3/24, 31	Squantum, Newburyport		235, 350	R.Stymeist, G.Soucy#
4/8, 10	Squantum, Salisbury		235, 300	BBC, H.Weissberg
4/13, 16	Duxbury Bay, <u>Bolton Flats</u>		2000+, 1	W.Petersen, B.Blodget
5/6, 27	Newburyport		500, 40	W.Petersen#, SSBC
5/22, 26	Barnstable, Plymouth		270, 100	R.Pease, W.Petersen#
<u>White-fronted Goose:</u>				
4/8-24	Newburyport (-Merrimac-4/18)		1 ad.	J.Andrews, E.Morrier + v.o.
Snow Goose:				
3/17, 31	Newburyport-P.I., Acoaxet		6, 1	BBC, W.Petersen

4/thr.	P.I. marshes	max. 2500±(4/12-15)	v.o.
4/6, 12	Lincoln, Framingham	65, 57	W.Harrington, R.Forster
5/2, 5	P.I.	200, 65	C.Floyd, H.Wiggin
"Blue Goose":			
4/8, 17	P.I.	1 ad., 3	R.Heil, T.Atkinson
Black Duck:			
3/17, 18	Newburyport, W.Bridgewater	1000+, 300	BBC, W.Petersen
Gadwall:			
3/24-31, 25	GMNWR, P.I.	14, 25	O.Komar, W.Petersen
4/thr., 8	P.I., Scituate	max. 11, 6	BBC, M.Litchfield
4/11, 22	Concord, Mt. A.	pr., 1 male	R.Walton, S.Perkins
5/12	P.I.	20	B.Cassie
Pintail:			
3/11, 17	Concord, P.I.	42, 120	R.Forster, R.Heil
4/7	P.I.	75	BBC
5/5, 27	P.I., Ipswich	2, 3	BBC, R.Stymeist#
Green-winged Teal:			
3/3, 18	Nantucket, Wayland	15, 15	BBC, P.Roberts#
3/23, 24	IRWS, P.I.	14, 170	R.Heil
4/1, 7	Marshfield, W.Bridgewater	75, 50	W.Petersen
4/7, 16	P.I., Bolton Flats	165, 36	BBC, B.Blodget
5/5	P.I.	4	BBC
Blue-winged Teal:			
3/12 on, 16-18	four S.Shore localities, P.I.	12, singles	v.o.
4/1-28, 8	P.I., Marshfield	max. 9, 12	BBC, M.Litchfield
5/13	P.I.	8	SSBC
American Wigeon:			
3/3, 21-31	Nantucket, GMNWR	40, 2-8	BBC, P.Garrey#
4/1, 11	P.I., Wellesley	10, pr.	SSBC, B.Cassie
4/14	Wayland	5	R.Forster
5/12-13	P.I., Ipswich	2, 2	SSBC, R.Stymeist
Northern Shoveler:			
4/7	GMNWR, P.I.	2, 2	R. Walton, BBC
4/15-18, 16	W.Bridgewater, Wayland	1 male, 1 male	W.Petersen#, R.Forster
5/12	P.I.	pair	B.Cassie
Wood Duck:			
3/18, 22	GMNWR, Wellesley	6, 7	P.Roberts#, B.Cassie
3/10 on	9 other localities	27 inds.	v.o.
4/1	Newburyport, W.Newbury	5, 6	R.Veit#
4/1, 2	IRWS, Waltham	10, 8	G.Soucy#, R.Stymeist
4/8, 11	Saugus, Wellesley	6, 7	C.Jackson, B.Cassie
5/27, 28	P.I., GMNWR	max. 8, 7(4 yg.)	R.Stymeist, BBC
Redhead:			
3/3, 24	Nantucket, Falmouth	80, 8	BBC, P.Garrey
4/5, 7-11	Lincoln (Camb.Res.), P.I.	2, 1	C.Ewer, BBC#
Ring-necked Duck:			
3/17-30, 18	S.Hanson-Halifax, Sudbury	125+, 99	W.Petersen, R.Walton
3/14, 23	Carver, IRWS	200+, 22	D.Briggs, R.Heil
4/7, 26	Concord	47, 11	H.Wiggin, R.Forster
4/15-20, 28	S. Hanson	150, 8	W.Petersen#
5/5	S.Hanson	5	W.Petersen
Canvasback:			
3/6, 10	Swansea, Newburyport	200, 50	T.Athearn, W.Petersen
3/24, 25	Falmouth, Lakeville	50, 39	P.Garrey, BBC
4/8	Newburyport, Lincoln	8, 6	J.Andrews, B.Wilson
4/10	Squantum	6	G.Wilson
Greater Scaup:			
3/6, 11	Freetown, Newburyport	350, 250	T.Athearn, BBC
3/25	Boston Harbor	<u>11,795</u>	D.Brown#
4/8, 5/22	Squantum, Newburyport	252, 2	BBC, R.Stymeist
Lesser Scaup:			
3/24, 25	Newburyport, Lakeville	8 males, 20	R.Heil#, G.Gove
4/8, 20	Newburyport, Middleboro	4, 1 male	R.Heil, W.Petersen#
Common Goldeneye:			
3/17, 4/8	Newburyport	3500, 700	R.Heil
Barrow's Goldeneye:			
3/1-25	Newburyport	max. 3 males	R.Heil#
3/3, 21	Gloucester, Plymouth	1 fem., 1 male	R.Heil

3/25, 4/5 4/1, 8	Quincy Bay, Truro Newburyport	5(3 m., 2 fem.), 1 male 3, pair	D.Brown#, B.Nikula R.Fox, R.Heil#
Bufflehead: 3/17, 25 4/15, 5/12	Nahant Bay, Newburyport S.Hanson, Nahant Bay	800, 800+ 50, 12	S.Zendeh, W.Petersen W.Petersen, R.Heil
Oldsquaw: 3/3, 10 4/8, 28 5/9, 27	Nantucket, Newburyport Newburyport Newburyport	25000, 1000 1800, 600 1200, 100	BBC, W.Petersen R.Heil R.Heil
Harlequin Duck: 3/3-6, 8 3/11-17, 12 3/thr., 25 4/3	Nantucket, Squibnocket-M.V. Magnolia, Gloucester E.Orleans, Wollaston Magnolia	2, 2 4(1 m., 3 fem.), 1 male max. 7, 1 male 3	BBC, V.Laux J.Berry#, D.Hayward fide B.Nikula, D.Brown H.Weissberg
Common Eider: 3/10, 21 5/30	Lynn, Plymouth Penikese I.	3000, 5700 "2 nests w/ 4 eggs"	S.Zendeh, R.Heil D.Masch#
King Eider: 3/4-25 3/29, 4/11-15	Boston (Long I.) Nahant, P.I.	1 male 1 fem., 1 ad. male	G.Soucy, D.Brown# D.Hayward, P.Parsons#
White-winged Scoter: 3/3, thr. 4/16, 5/12	Nantucket, Nahant Nantucket, P.I.	400, max. 314 200, 12	BBC, S.Zendeh C.Jackson, B.Cassie
Surf Scoter: 4/16, 28 5/12, 27	Nantucket, Westport P.I., Marblehead	200, 90 20, 1	C.Jackson, SSBC B.Cassie, R.Veit#
Black Scoter: 4/8, 15	Truro, Nantucket	800, 300	W.Petersen, C.Jackson
Ruddy Duck: 3/25, 4/thr. 5/thr.	P.I.(Stage I., Pool) P.I.	2 m., max. 14 (4/29) max. 8 (12th)	W.Petersen, R.Stymeist# BBC
Hooded Merganser: 3/18 4/4, 16 5/12, 22	Halifax, GMNWR P.I., Concord P.I., Hingham	22, 7 2, 4 1 fem., 1	W.Petersen, P.Roberts H.Weissberg, R.Flint B.Cassie, W.Petersen#
Common Merganser: 3/4, 17 3/9, 21 4/16, 5/6 5/6, 21	Lakeville, Halifax Braintree, Lincoln S.Hanson, Mt. A. Marshfield, Harwich	30, 70 40, 55 3, 1 2, 1	SSBC R.Campbell, P.Garrey W.Petersen, BBC BBC, B.Nikula
Red-breasted Merganser: 3/3-17, 25 3/17, 20 4/8, 28	Lakeville, P.I. Falmouth, Nantucket Wellfleet-P'town, P.I.	1, 300 2500, 800+ 2300+, 57	W.Petersen# B.Nikula, E.Andrews W.Petersen, BBC

VULTURES thru RAILS

The continued increase and expansion of the Turkey Vulture was never more apparent than with this spring's total of 129. First arrivals were noted in late March; while a concentration of 55 was reported from the Quabbin area April 1, this single day figure easily is larger than any spring total prior to 1978:

	Mar.	Apr.	May	Total	
*1979:	18	95+	16	129+	
*1978:	9	75	8	92	
1977:	5	17	21	43	
1976	11	15	9	35	(*includes EMHW reports)

Accipiter totals recorded by the Eastern Mass. Hawk Watch April 15-May 9 included 1 Goshawk, 343 Sharp-shinned and 17 Cooper's hawks. Adding on the 12 non-EMHW Cooper's Hawks reported this spring, the combined sum of 29 exactly equals last spring's total. April 22 was clearly the best day of the spring hawk flight. On this date two sites in Worcester County reported Broad-winged totals in excess of any published spring records for Eastern Mass. King Rails numbered a rather high 4-5 individuals for recent years (Cf. 4, 2, 2 since 1976), while Clapper Rails went unreported this spring (Cf. 3-4, 2, 2 since 1976).

Turkey Vulture: 3/14, 24	Sturbridge, Quabbin	1, 3	Mr.Langer, M.McClellan#
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3/26,27	NewBraintree, Plymouth	6, 1	J.Cooper, T.Lloyd-Evans
3/28,31	Middleboro, Truro	5, 2	L.Pratt, fide W.Bailey
4/1, 11	Quabbin area	<u>55</u> , <u>30</u>	D.Brown#, fide J.O'Regan
4/21; 22,29	Mt. Wachusett-Princeton	6; 3, 9	SSBC; P.Roberts#
4/6-17	10 other localities	12 inds.	v.o.
5/1, 28	Framingham, Monomoy	3, 3	R.Forster, W.Bailey
5/thr.	10 other localities	singles	v.o.
Goshawk:			
3/1, 17	Concord, W.Newbury	1 imm., 1	N.Clayton, G.Soucy
3/23	IRWS	1	R.Heil
4/1, 21	Wellesley, Boxford	1, 4	B.Cassie, M.Litchfield
Sharp-shinned Hawk:			
3/3-31	6 localities	7 inds.	v.o.
4/21; 22, 29	Mt.Wachusett-Princeton	36; 25, 13	SSBC; P.Roberts#
4/18, 24	W.Newbury	23, 25	P.Roberts#
4/17, 24	Mt.Watatic, P.I.	22, 14	W.Petersen, P.Roberts#
5/2, 5	P.I.	14 imms., 6	C.Floyd, G.Gove
5/6, 9	W.Newbury, Truro	5, 60+ imms.	W.Petersen, B.Nikula
Cooper's Hawk:			
3/1, 3-4	Edgartown-M.V., Nantucket	1 sub-ad., 1	V.Laux, BBC
4/7	W.Newbury, GMNWR	1, 1	D.Briggs#, G.Gove
4/13, 18	Acton, W.Newbury	1, 1	J.Baird, P.Roberts#
4/17, 19	Mt.Watatic, Norwell	2, 1	W.Petersen#
4/22, 24	Mt.Wachusett, E.Orleans	2, 2 ads.	P.Roberts, P.Trull
4/28, 5/1	Provincetown, BoltonFlats	1 imm., 1	B.Nikula, P.Garrey#
5/6, 7	W.Newbury, Concord	1 imm., 1 imm.	R.Heil, R.Forster#
Red-tailed Hawk:			
3/thr.	14 localities	34 inds.	v.o.
4/15, 22	Nantucket, Marshfield	10, 10	C.Jackson, SSBC
4/thr.	12 other localities	24 inds.	v.o.
Red-shouldered Hawk:			
3/6-22	7 South Shore localities	9 inds.	v.o.
3/17, 24; 18	Newburyport, Boxford; Hudson	1 ad., 1 ad., 1	R.Heil; B.Gordon
4/17, 25	Mt.Watatic, Wellfleet	4, <u>15</u>	W.Petersen, W.Bailey
4/21; 22, 29	Mt.Wachusett-Princeton	8; 3, 1	SSBC; P.Roberts#
4/1-15, 16 on	7 localities, 5 localities	7, 8	v.o.
5/19, 20	Bridgewater, Sharon	pair, 1	W.Petersen, D.Clapp
5/thr., 28	Boxford S.F., W.Newbury	2 pairs, 1	v.o., R.Emery#
Broad-winged Hawk:			
4/21; 22, 29	Mt.Wachusett-Princeton	49; <u>129</u> , 32	SSBC. P.Roberts#
4/22	Petersham	<u>146</u>	fide P.Roberts
4/17 on, 25	10 other localities, Wellfleet	18, 40	v.o., W. Bailey
5/1, 1-15	Lynn Woods, Mt. A.	6, 1-5	R.Heil, v.o.
Rough-legged Hawk:			
3/3, 10	Nantucket, Marshfield	4, 4	BBC
3/3, 17	Salisbury, Middleboro	3, 4	E.Morrier, W.Petersen#
4/1, 8	Milton, Squantum	1, 1	S.Higginbotham, BBC
4/11, 15	W.Newbury, Nantucket	1, 1	H.Weissberg, M.Litchfield
4/13-15	Marshfield	1	W.Petersen
Bald Eagle:			
3/9-24, 11	Lincoln(Camb.Res.), S.Orleans	1 imm., 2 imm.	C.+D.Ewer#, B.Nikula
3/24-4/1	Quabbin	1 ad.+ 1 imm.	M.McClellan, BBC
4/3, 29	Chatham, S.Carver	1 imm., 1 imm.	D.McNair, E. Akers
4/8	Truro, Lakeville	1 imm., 1 ad.	B.Nikula, D.Pearson
5/3, 27	Chatham-Monomoy	1 imm.	W.Bailey, W.Petersen
5/17	Katama; M.V.	1 imm.	V.Laux
Marsh Hawk:			
3/1, 3-4	Salisbury, Nantucket	3, 8	R.Heil, BBC
4/7	Newburyport, Nantucket	5, 8	BBC, G.+H.Champoux
4/15, 18	Nantucket, W.Newbury	15, 8	C.Jackson, P.Roberts#
4/22, 5/2-19	Mt.Wachusett, P.I.	6, 3-1	P.Roberts, C.Floyd#
5/26-28, 28	M.V., Chatham(N.Beach)	2, pair	BBC, W.Petersen
Osprey:			
3/25	Westport, Wareham	1, 1	J.Clancy, G.Gove#
3/31	Westport area	18	R.Heil + M.Kasprzyk
4/21; 22, 29	Mt.Wachusett	11; 17, 17	SSBC; P.Roberts#
4/17, 18	Mt.Watatic, W.Newbury	19, 7	W.Petersen#, P.Roberts
5/thr., 26-28	10 localities, M.V.	singles, 6	v.o., BBC

Peregrine Falcon:			
3/12, 4/4	downtown Boston, Allston	1, 1	P.Roberts, N.Claflin
4/8, 14	Newburyport-P.I.	1, 1	D.Briggs#, V.Albee
5/10, 17	WEWS, Oak Bluffs-M.V.	1 sub-ad., 1	B.Nikula#, D.Briggs#
5/23, 26	P.I.	1, 1	R.Forster#, G.Soucy#
Merlin:			
3/3, 4	Nantucket, Quincy	7, 1	BBC
3/17, 25	P.I., M.V.	1 ad. male, 1	P.Roberts#, V.Laux
4/11 on	4 localities	8 inds.	v.o.
5/2, 5, 18; 27	P.I.	2, 1, 1, 1	v.o.
5/3, 6	Squantum, N.Scituate	1, 1	W.Cornwell, W.Petersen
5/20	Mt. A.	1	L.Robinson
American Kestrel:			
3/26, 4/15	P.I., Essex	12, 19	M.McClellan, BBC
4/18, 19	N.Scituate	12, 12	W.Petersen
4/18, 24	W.Newbury	12, 23	P.Roberts#
4/21, 22	Mt. Wachusett	19, 27	P.Roberts#
<u>Sandhill Crane:</u> (from the winter season)			
3/2-23	Beverly (Cherry Hill Farm)	1	v.o.
King Rail:			
4/26	Squantum	1	D.Brown
5/5-20, 19-22	Lynnfield, Middleboro	1-2, 2	H.Coolidge#, W.Petersen#
Virginia Rail:			
4/28	GMNWR, P.I.	2, 2	R.Walton, G.Gove
4/16, 5/13	Lynnfield, Wayland	2, 3	E.Smith, R.Forster
5/20	Saugus, Lynnfield	2, 6	C.Jackson, H.Wiggin#
Sora Rail:			
4/23, 26	Lynnfield, Squantum	1, 1	N.Claflin, D.Brown
4/28	GMNWR, P.I.	1, 1	G.Gove, BBC
5/thr.	P.I., Wayland	max. 3, 5	B.Cassie, R.Forster
5/20	Lynnfield	10	B.Keenan#
Common Gallinule:			
3/3-4, 4/29	Nantucket, P.I.	1, 1	BBC, G.Gove
4/16, 29	Lynnfield	1, 1	E.Smith, R.Stymeist#
5/4, 13	Squantum, P.I.	1 dead, 4	W.Cornwell, SSBC
5/15	Lynnfield	2	BBC
American Coot:			
3/17 on, 25	P.I., Sandwich	1, 20	BBC, S.Reade
4/1, 14	P.I., Nantucket	40, 20	SSBC, C.Jackson

SHOREBIRDS

This spring's shorebird migration was characterized by early arrivals of many species, in several instances in small flocks, even before the usual arrival dates of individuals in past springs. Early state records were established with the arrival of American Oystercatchers on Sandy Neck (1) and Muskeget I. (2) both on March 23, and with an American Golden Plover, first discovered at P.I. March 24. The occurrences of these two species were not storm related, however March was the tenth warmest in 109 years. Other early arrivals included a Semipalmated Plover at P.I. April 28, and flocks of ten Least Sandpipers on Nantucket April 16, and 15 Semipalmated Sandpipers as early as May 3 at Newburyport. An astounding spring Long-billed Curlew on Monomoy May 31, a "white-rumped" Whimbrel of Old World origin on Nantucket April 29-30, and a Black-necked Stilt also on Nantucket May 5-12 were the extreme shorebird rarities found this spring.

American Oystercatcher:			
3/23	Muskeget I., S.N.	2, 1	E.Andrews#, R.Pease
3/31, 4/8	Chatham (Morris I.)	2, 4	B.Nikula#, M.Lynch
4/30, 5/thr.	Nantucket, Monomoy	6, 15	M.Litchfield, v.o.
5/26-28, 28	M.V., Chatham	7, 2	BBC, W.Petersen
Semipalmated Plover:			
4/28	P.I. basin	1	R.Heil
5/3, 22	P.I.	1, 100	R.Heil
5/13, 22	Scituate, S.Hanson	50, 6 mig. N.	W.Petersen
Piping Plover:			
3/31 on, 4/8 on	Dartmouth, P.I.	4, max. 3	M.Kasprzyk#, v.o.
5/12, 26-28	P.I., M.V.	4, 12	BBC
Killdeer:			
3/1-10	6 locals	12 inds.	v.o.

3/11-20	9 localities	38 individuals	v.o.
3/24, 31	Newburyport-P.I., Westport	20, 30	R.Heil + M.Kasprzyk
4/1, 16	Newburyport-P.I., Bolton Flats	15, 36	SSBC, B.Blodget
American Golden Plover:			
3/24-4/7	P.I.	1 basic plum.	N.Clayton + v.o.
4/27-28	Bolton Flats	1	E.Salmella#
5/14, 22	Squantum, Newburyport	1, 1 alt.plum.	D.Brown, R.Heil#
Black-bellied Plover:			
4/13, 28	Duxbury, Newburyport	28, 25	W.Petersen, R.Heil
4/30, 5/13	Nantucket, Scituate	40, 100	M.Litchfield, W.Petersen
5/18, 27	E.Boston, Newburyport	650, 2400	S.Zendeh, R.Heil
Ruddy Turnstone:			
5/25, 26-28	E.Boston, M.V.	15, 20	S.Zendeh, BBC
American Woodcock:			
3/5, 13	Lincoln, Windhester	5, 3-5	W.Hanley, K.Nappa
3/6-15, 16-31	9 localities, 10 localities	10 inds., 24 inds.	v.o.
4/2, 5	Essex, Newton	6, 2	M.Barnett#, O.Komar
4/11, 12	Newton, IRWS	5, 6	O.Komar, BBC
5/4, 22	Squantum, W.Newbury	2 pr., 9	W.Cornwell, R.Stymeist#
Common Snipe:			
3/24	Stow, Marshfield	4, 3	L.Taylor, SSBC
4/7, 16	Framingham, Bolton Flats	22, 27	R.Forster, B.Blodget
4/13, 16	Marshfield, W.Bridgewater	30, 60+	W.Petersen
4/20 on, 5/5	E.Bridgewater, Halifax pr.on terr., 1 winnowing		W.Petersen#
Long-billed Curlew:			
5/31	Monomoy	1	I.Nisbet
Whimbrel:			
4/16, 28	Nantucket, Marshfield	1, 1	C.Jackson, W.Petersen
4/29-30	Nantucket 4, inc. 1 <u>Euras.type</u> w/ white rump		M.Litchfield
5/4, 19	Plymouth, W.Dennis	1, 6	P.Donahue, P.Trull#
5/25	E.Boston	1	S.Zendeh
Upland Sandpiper:			
4/15, 25	Nantucket, Bolton Flats	1, 2	E.Andrews, B.Blodget
4/26, 28	Dover, Marshfield	1, 1	P.Hallowell#, W.Petersen
4/29	Newbury	5	W.Petersen
5/2	Framingham, S.Natick	1, 5	R.Forster, F.Hamlen
5/2	Bridgewater, Kingston	1, 1	D.Briggs#
5/3, 13	Bolton Flats, Newburyport	1, 2 prs.	M.Lynch, J.Berry
Spotted Sandpiper:			
4/28	Bridgewater	1	W.Petersen
4/29	GMNWR, Nantucket	1, 1	R.Walton, M.Litchfield
5/12, 20	Middleton, Woburn	7, 3	M.McClellan, C.Jackson
Solitary Sandpiper:			
4/16-18, 22	S.Peabody, Wellesley	1, 1	E.Smith#, B.Cassie
4/26, 5/5	Squantum, Manchester	1, 3	D.Brown, P.Parsons#
5/9	Mt. A., F.M.	3, 7	R.Stymeist, D.Brown
5/12, 5-20	Middleton, 8 other localities	20+, 9 inds.	M.McClellan#, v.o.
Willet:			
4/26, 28-29	Squantum, Eastham	2, 7	D.Brown#, W.Bailey
4/30	Nantucket (Eel Pt.)	32	M.Litchfield#
5/3, 4 on	Chatham, Newburyport-P.I.	7, 1-3	W.Bailey, v.o.
5/17, 25	Marshfield, E.Boston	1, 2	D.Brown, S.Zendeh
Greater Yellowlegs:			
3/30, 31	P.I., E.Boston	4, 1	H.Weissberg, S.Zendeh
3/31, 4/8	IRWS, Rowley	5, 19	O.Komar, R.Heil
4/26, 28	Squantum, Marshfield	78, 100	D.Brown, W.Petersen
5/3, 9, 27	Newburyport	320, 350, 4	R.Heil
5/4, 26	Squantum, Bolton Flats	165, 22	W.Cornwell, B.Blodget
Lesser Yellowlegs:			
3/31, 4/8	P.I., Rowley	1, 1	G.Gove#, R.Heil
4/15, 21	Essex, Newburyport	2, 5	BBC, M.Litchfield
5/3, 4	Newburyport, Squantum	12, 3	R.Heil, W.Cornwell
Red Knot:			
4/28	Newburyport	8	R.Heil
5/26, 26-28	Plymouth, M.V.	15+, 9	D.Briggs, BBC
Purple Sandpiper:			
3/25	Revere, Winthrop	86, 40	fide D.Brown
5/20	Acoaxet, Winthrop	13, 50	BBC, C.Jackson

5/22, 26	Nahant, Rockport	150, 10	R. Heil
Pectoral Sandpiper:			
4/6, 8	P.I., Rowley	1, 1	J.Grugan, R.Heil
4/15, 16	W. Bridgewater, Bolton	5, 4	W.Petersen, B.Blodget
5/3, 31	W.Bridgewater, P.I.	3-4, 1	D.Brown, S.Zendeh
White-rumped Sandpiper:			
5/9, 27	Newburyport	10, 25	R.Heil#
Least Sandpiper			
4/16, 28	Nantucket, Marshfield	10, 10	C.Jackson,W.Petersen
4/29	Squantum, W.Bridgewater	5, 5	D.Brown, W.Petersen
5/9	Newburyport, Scituate	4000, 175+	R.Heil, W.Petersen
Dunlin:			
3/25, 4/13	Boston Harbor, Duxbury	730, 100+	C.Jackson#,W.Petersen
5/5, 25	Newburyport, E.Boston	300, 50	BBC, S.Zendeh
Short-billed Dowitcher:			
4/26, 28	Squantum, Newburyport	7, 25	D.Brown, R.Heil
4/28	Dartmouth, W.Bridgewater	3, 1	SSBC, W.Petersen
5/9, 22	Newburyport, S.Hanson	60, 235 mig.	NE R.Heil,W.Petersen
5/22	P.I., M.V.	250+, 135	M.McClellan#, V.Laux
Semipalmated Sandpiper:			
5/3, 4	Newburyport, Squantum	15, 6	R.Heil, W.Cornwell
5/19, 20	P.I., Scituate	375, 25+	BBC, W.Petersen
Ruff:			
4/15-5/3	W.Bridgewater	1 male	W.Petersen + v.o.
5/3-13, 13	Newburyport	1 male, 1 fem.	R.Heil+v.o., v.o.
Sanderling:			
3/25, 5/12	Revere, Lynn	70,500	S.Zendeh,R.Stymeist#
Black-necked Stilt:			
5/3-12	Miacomet Pd.-Nantucket	1	E.Andrews + v.o.
Red Phalarope:			
5/10, 20	off Cape Pogue-M.V.,Newburyport	4, 1 fem.	V.Laux, L.Crofoot#
5/26	Chatham	6	W.Bailey
Wilson's Phalarope:			
5/12-22, 14	P.I., Squantum	max. 2, 1	v.o., D.Brown
5/28, 27-28	GMNWR, N.Scituate	max. 3, 1 fem.	BBC, B+M Litchfield
Northern Phalarope:			
5/13, 20	Stellwagen Bank, W.Peabody	65, 1 m., 2 fem.	J.Grugan, B.Keenan#
5/20-26, 26	P.I., Bolton Flats	2, 4	v.o., B.Blodget

JAEGERS THROUGH ALCIDS

An adult Common Gull with a flock of 250+ migrant Ring-billed in E. Bridgewater April 1 did not linger. Diagnostic features noted were "a tiny dove-like head profile; short, unmarked greenish-yellow bill; heavy head and neck streakings typical of winter plumage; and a darker mantle color approaching shade of Laughing Gull." The spring featured an incredible number of rare Charadriiformes. Of 7 highlighted species, all but the above mentioned occurred on Cape Cod or M.V. during the period May 16-31: an adult Long-tailed Jaeger found on May 31 two miles west of Wellfleet, a sub-adult Lesser Black-backed Gull on the Vineyard May 16-17, an adult Sabine's Gull in Chatham May 25, 3 Gull-billed Terns on Monomoy May 28, plus one or two others on M.V. in May, and apparently Massachusetts' first spring record for Sandwich Tern of an adult at Chatham May 28, all rounded out the Cape's rather impressive May list. Heavy fog and persistent E-NE winds May 15-21 perhaps explain the 16 Arctic Terns at Heard's Pond, Wayland, May 20, and the Laughing Gull over Peabody May 21; but the 2 Laughing Gulls at the Wachusett Reservoir in Clinton, Worcester Co. May 11-13 were apparently not storm related and as such quite unusual.

Pomarine Jaeger:			
5/26	Stellwagen Bank	1	W. Petersen#
Parasitic Jaeger:			
5/17, 26	S.N., Stellwagen Bank	3, 3	R.Pease, W.Petersen#
Long-tailed Jaeger:			
5/31	2 mi.W. of Wellfleet	1 ad.	R. Pease
Glaucous Gull:			
3/3, 3-11	Newburyport, Gloucester	2 first yr., max. 4	S.Perkins,v.o.
3/10, 25	Revere, Winthrop	1, 1	S.Zendeh
4/1-15, 5/19	P.I., Concord	6-2, 1	v.o., R. Shaw
5/26, 27	P.I., Monomoy	1,1	BBC, I. Nisbet

<u>Iceland Gull:</u>			
3/1, 3	Newburyport, Nantucket	54, 6	R.Heil, BBC
3/10, 4/15	Gloucester, Nantucket	14, 8	R.Forster, M.Litchfield
4/thr., 1-20	P.I., Bridgewater	max. 30, 1 imm.	G.Gove#, W.Petersen#
<u>Lesser Black-backed Gull:</u>			
5/16-17	Sarson's I.-M.V.	1 sub-ad.	V.Laux#
<u>Ring-billed Gull:</u>			
3/15, 24	E.Bridgewater, Newburyport	300+, 600 ads.	J.Flaherty, R.Heil
4/1, 8	Marshfield, Newburyport	300, 800	W.Petersen, R.Heil
<u>Common Gull:</u>			
4/1	E.Bridgewater	1 adult	W.Petersen
<u>Black-headed Gull:</u>			
3/1, 21-31	Newburyport, Plymouth	2 ads., 1 imm.	R. Heil#
3/24-4/6, 3/25	E.Boston, Quincy	2, 1	C.Jackson#, D.Brown
5/22	Barnstable, Plymouth	3, 1 sub-ad.	R.Pease, W.Petersen#
5/27	Newburyport	1 sub-ad.	R.Heil
<u>Laughing Gull:</u>			
3/31, 4/14	Chatham, Squantum	1-2, 2	B.Nikula, S.Higginbotham
4/5, 29	Woods Hole, Nantucket	1, 3	M. Litchfield
5/thr.	Monomoy, Nauset	400+prs., max. 106	I.Nisbet, P.Trull
5/12-13, 21	Wachusett Res.-Clinton, S.Peabody	2, 1	B.Blodget, R.Heil
<u>Bonaparte's Gull:</u>			
4/8, 28	Newburyport	4, 250	R. Heil
<u>Little Gull:</u>			
3/9, 3/25-5/5	Newburyport	2 ads., 3 ads.	L.Jodrey, W.Petersen + v.o.
5/22, 27	P.I., Monomoy	1 imm., 1	R.Heil, I.Nisbet
<u>Sabine's Gull:</u>			
5/25	N.Beach-Morris I., Chatham	1 ad.	I.Nisbet + P.Trull
<u>Black-legged Kittiwake:</u>			
5/13, 26	Stellwagen Bank	15, 50	PMS, W.Petersen#
<u>Gull-billed Tern:</u>			
5/1, 29	M.V.	1, 1	V.Laux#
5/28	Monomoy	3	I.Nisbet
<u>Sandwich Tern</u>			
5/28	N.Beach-Chatham	1 ad.	W.Petersen
<u>Common Tern:</u>			
4/25, 26	M.V., Sandwich	25, 2	V.Laux, R.Pease
4/28	Westport, P.I.	8, 1	SSBC, G.Gove
5/3, 22	Monomoy, P.I.	3000, 200	W.Bailey, R.Heil
<u>Arctic Tern:</u>			
5/20	Heard's Pd.-Wayland	16	R.Forster
5/26	Rockport, Stellwagen Bank	2 ads., 2	R.Heil, W.Petersen#
<u>Roseate Tern:</u>			
4/28, 5/22	M.V., P.I.	3, 2	V.Laux, R.Heil
<u>Least Tern:</u>			
4/27	M.V.	1	V.Laux
5/26, 26-28	Ipswich, M.V.	20, 40	J.Berry, BBC
<u>Royal Tern:</u>			
5/17, 20	M.V., Plymouth	1, 1	V.Laux, MBO staff
<u>Caspian Tern:</u>			
4/30, 5/6	Eastham, Squantum	1, 2	W.Bailey, J.Murphy
5/5	Newburyport, Plymouth	1, 1	G.Soucy#, fide K.Andersen
5/12-30, 17	P.I., M.V.	max. 2, 2	v.o., D.Briggs
<u>Black Tern:</u>			
5/17, 19	Edgartown-M.V., Wayland	1, 1	D.Briggs, R.Forster
5/20-26, 27	P.I., Monomoy	max. 4, 1	M.Argue#, W.Petersen
<u>Razorbill:</u>			
4/16	Nantucket	18	C.Jackson
<u>Black Guillemot:</u>			
3/3, 29	Cape Ann, Nahant	9, 3	R.Heil, D.Hayward
4/15, 18	Nantucket, N.Scituate	1, 10	M.Litchfield, W.Petersen
5/5	Nahant	1	M.Kasprzyk
5/6, 22	N.Scituate	8, 1	W.Petersen

CUCKOOS THROUGH WOODPECKERS

At least 6 Great Gray Owls lingered into early March, one straggler remaining at the IRWS, Topsfield until March 28. It is interesting to note the distribution of this

unprecedented flight in Massachusetts. Of some 18 Great Grays located since February, none occurred on the southeastern coastal plain of Plymouth, Bristol and Barnstable counties, or on Nantucket and M.V. Roughly half of the owls resided in the larger river valleys: at least 3 along the Connecticut R., 3 in the Sudbury R. valley, and one each near the Ipswich and Merrimack rivers. This river valley distribution probably can be attributed to a greater abundance of rodents in such areas. Saw-whet Owls went completely unreported this spring despite coverage of known breeding sites on Cape Cod and the presence of the MBO nets, usually good for 1-3 Saw-whets per spring (cf. 5, 7, 11, 0 spring totals since 1976). Two Black-backed Three-toed Woodpeckers were found on the same day, May 8, in Gloucester and S. Easton.

Yellow-billed Cuckoo:			
5/16 on	8 localities	11 inds.	v.o.
Black-billed Cuckoo:			
5/8 on	10 localities	15 inds.	v.o.
Screech Owl:			
3/4, 18	Middleboro, Topsfield	4, 2	SSBC, BBC
3/23	Lincoln	3	R.Stymeist
Great Horned Owl:			
3/4	Bridgewater, Middleboro	6, 3	J.Flaherty, SSBC
3/1-31	11 other localities	15 inds.	v.o.
4/1-23	6 localities	6-7 inds.	v.o.
5/11, 19	Saugus, Lynnfield	1, 1	C.Jackson, L.Crofoot
5/29, 30	Mt.A., Newburyport	1, 1	J.Clancy, G.Soucy#
Snowy Owl:			
3/1-4/17, 3/3-11	P.I., Salisbury	1-2, 1	v.o.
3/9-4/2, 3/17	Squantum, E.Boston	1, 1	D.Brown#, S.Zendeh
Barred Owl:			
3/thr.	7 localities	singles	v.o.
4/15	E. Middleboro, Lynn	2, 1	K.Anderson#, R.Heil
4/20, 21	Lakeville, Boxford	2, 1	W.Petersen#, M.Litchfield#
5/thr.	E.Middleboro	2	W.Petersen
Great Gray Owl: (statewide sightings)			
3/1, 1-11	W.Roxbury, Hatfield	1, 1	C.Donahoe, K.Anderson#
3/3-28, 4-8	IRWS, Sutton	1, 1	R.Scott#, J.Oliver
3/4, 11	W.Boxford, Canton	1, 1	H.Parker#, D.Brown
Long-eared Owl:			
3/4, 4/19	S.Duxbury, MNWS	1, 1	SSBC, R.Heil
Short-eared Owl:			
3/1, 8, 31	Salisbury, Essex, Westport	4, 2, 1	R.Heil#
3/4, 22	Squantum	3, 2	BBC, M.Purder
3/3-31	3 other localities	3-4 inds.	v.o.
4/15, 29	Marshfield	5, 1	W.Peterson
4/1-26	5 other localities	singles	v.o.
5/25	Monomoy	1	P.Trull
Whip-poor-will:			
4/23, 24	E.Middleboro, Mt.A.	1, 1	K.Anderson, H.Weissberg #
5/22	W.Newbury, Rowley	6, 8	R.Heil + M.Kasprzyk
Common Nighthawk:			
5/1	Chatham	1	B.Nikula
5/10, 21	Cambridge, F.M.	3, 3	R.Stymeist, D.Brown
Chimney Swift:			
4/23, 29	M.V., Norwell	1, 6	V.Laux, B.Litchfield
5/3 on, 19	Mt.A., Manchester	2-20, 15	v.o., BBC
Ruby-throated Hummingbird:			
4/28, 30	P.I., MNWS	1, 1	BBC, L.Healy#
5/13 on, 27	Mt.A., P.I.	1-6, 10	R.Stymeist#
Common Flicker:			
4/4, 22	S.Peabody	5, 35	R.Heil
4/19, 23	Wellesley	17, 37	B.Cassie
Pileated Woodpecker:			
3/thr., 4/thr.	6 localities, 5 localities	7 inds., singles	v.o.
5/thr.	6 localities	8 inds.	v.o.
Red-headed Woodpecker:			
3/thr.	W.Concord	1	R.Walton#
5/8, 9	Wayland, MNWS	1, 1 ad.	K.Hamilton, M.Kasprzyk
mid May	Brewster, Orleans, Eastham	single ads.	fide B.Nikula
5/17 on, late May	Lynn, Chatham	<u>nesting pr.</u> , 1 ad.	R.Heil, B.Nikula

5/22, 31	Hingham, Lynnfield	1, 1	fide R.Campbell, A.Lundelead
<u>Red-bellied Woodpecker:</u>			
4/8	S.Natick	1	W.Drummond#
<u>Yellow-bellied Sapsucker:</u>			
4/18, 19	Milton, Wellesley	1, 3	D.Brown, B.Cassie
4/21, 23-30	Ashburnham, Mt.A.	1, 1-3	M.McClellan#C.Jackson#
4/23, 28-29	Gloucester, Provincetown	1, 1	R.Heil, P.Trull
5/5, 7	Cambridge, S.Peabody	1, 1	T.Lawrence, R.Heil
5/9	Boston	1	A.Agush
<u>Black-backed Three-toed Woodpecker:</u>			
5/8	Gloucester	1	M.Arey, C.Leahy
5/8	S.Easton	1	L.White

PASSERINES

Again, as during the 1978 spring migration, typically southern species were reported during late April and early May in our area. There was an excellent fallout of passerines on Cape Cod during a late April storm which originated over the southern United States. An influx of Indigo Buntings and Rose-breasted Grosbeaks occurred in April along with the usual early arrival of Blue Grosbeaks and Summer Tanagers when there is such a southern storm.

Southwest winds were noticed on April 22 and 28; May 3, 4, 9, 12-14, 21 and 27-30. The biggest push of migrants in our area occurred on May 9-10th when hundreds of birds were reported at Mount Auburn Cemetery in Cambridge during 90° weather.

FLYCATCHERS THROUGH WRENS

An encouraging 18 Least Flycatchers were reported during May, 10 birds over last year. The Least Flycatcher appears to be doing very well in Western Massachusetts though still local in Eastern Massachusetts. The Willow Flycatcher continues to increase every year, certainly the easiest Empidonax flycatcher to find within our area.

Swallows arrived on schedule, and Purple Martins were using the additional boxes on Plum Island. A pair of Fish Crows nested in the same tree as the year before at Mount Auburn. A Boreal Chickadee at Essex was unusual, and numbers of Red-breasted Nuthatch were way down. A good number of Winter Wrens were noted (21) considering reports of last fall and winter when they were practically non-existent.

Eastern Kingbird:

c 4/23, 5/6 on	Mt.A.	1, max. 8	L.Crofoot, v.o.
5/1, 3	Framingham, Wayland	1, 1	R.Forster
5/5, 8, 27	P'town, Woburn, P.I.	2, 10, 25	R.Veit#, G.Gove, BBC

Great-crested Flycatcher:

4/24	Barnstable	1	R.Pease
5/1, 4 on	Canton, Mt.A.	1, 1-5	R.Veit, v.o.
5/8 + 17, 16	Lynn, S.Peabody	7 + 13, 9	R.Heil

Eastern Phoebe:

3/15, 22	E.Middleboro, Wellesley	1, 1	K.Anderson, B.Cassie
3/23	Topsfield, Sharon	6, 1	R.Heil, D.Clapp
3/24, 25	general arrival	25 individ.	v.o.
thr. Apr.	Mt.A.	max 8 (4/11)	v.o.
4/4, 8	S.Peabody, Saugus	9, 6	R.Heil, C.Jackson
4/7, 10	GMNWR, Sharon	7, 11	M.McClellan, D.Clapp

(This was the first year since 1950 that E. Phoebes were not nesting at Wolf Trap Hill, Middleboro - K.Anderson; no phoebes nested at Mt.A. this year; they had been under Spectacle Pond for at least the last 10 years - R. Stymeist.)

Yellow-bellied Flycatcher:

5/17-23, 30	Mt. A.	1-2, 3	M.Noland# + v.o., R.Stymeist#
5/22, 25	Nahant, MNWS	1, 1	R.Stymeist#, R.Heil
5/27, 29	MNWS, PI	3, 1	R.Veit#, G.Soucy#

Willow Flycatcher:

5/21, 22	Milton, Marshfield	2, 1	D.Brown, W.Petersen
5/23, 26	GMNWR, IRWS	3, 2	R.Stymeist#, S.Roberts#
5/27, 28	P.I., Newton	1, 3	S.Roberts#, M.Murphy#
5/28; 29	Lynnfield; Danvers, Lexington	3; 2, 2	M.Argue#; E.Pyburn, J.Andrews

Alder Flycatcher:

5/20, 21	Ipswich, Milton	1, 1	BBC, D.Brown
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5/30	P.I.	1	G.Soucy#
Least Flycatcher:			
5/5, 6	Saugus, Middleboro	2, 1	C.Jackson,W.Petersen
5/9 on, 11 on	MNWS, Mt.A.	max. 3,	1-2 R.Heil#+v.o.,S.Denison##
5/12	P.I., Boxford, Nahant	4, 3, 1	B.Cassie,R.Stymeist#, v.o.
5/16, 17	S.Peabody, Wellesley	1, 1	R.Heil, B.Cassie A.Scott#
Eastern Wood Pewee:			
5/12, 16	P.I., Wayland	1, 1	B.Cassie, R.Forster
5/16, 17-31	Hingham, Mt.A.	2, 2-4	B.Treat#, v.o.
5/20, 26-28	Dartmouth, M.V.	5, 10	BBC, BBC
Olive-sided Flycatcher:			
5/16, 22	S.Peabody, Lynn	1, 1	R.Heil
5/25, 27, 28	MNWS, P.I., Newburyport	1, 2, 1	R.Heil,T.Lawrence#,M.Argue#
5/31	Mt.A., Annisquam, Wakefield	2, 1, 1	J.Grigan#,H.Wiggin,C.Jackson
Horned Lark:			
3/18	Marshfield	20 migrants	
5/22, 26-28	P.I., M.V.	2 ad. w/yg.,	25 R.Stymeist#, BBC
Tree Swallow:			
3/24	first arrivals from 4 locations	totalling 12	individuals
3/25, 4/1	Middleboro	35, 200+	BBC, R.Turner
3/31	W.Harwich, Wayland	50+, 75+	B.Nikula#,E.Morrier
4/7, 14	GMNWR, Wayland	350, 500	G.Gove, R.Forster
4/17, 5/27	P.I.	100, 250	R.Emery#, BBC
Bank Swallow:			
4/1, 7	Middleboro, GMNWR	200+, 350	R.Turner, G.Gove
4/14, 17	Wayland, P.I.	500, 100	R.Forster, R.Emery#
5/22	Rowley	115 holes in bank;	all in use R.Stymeist,S.Roberts
Rough-winged Swallow:			
4/14, 18	Wayland, Newton	2, 1	R.Forster
4/23, 29	MNWS, Lynnfield	2, 8	G.Soucy#,R.Stymeist#
thr. May	Marblehead	8	R.Stymeist# + v.o.
Barn Swallow:			
4/7, 8	Wayland	2, 4	R.Forster
4/29	P.I., Lynnfield, Westport	20, 8, 12	G.Gove,R.Stymeist#,
5/26-28	M.V.	200	BBC SSBC
Cliff Swallow:			
3/31	W.Harwich	1	B.Nikula,P.Trull
4/8,21	GMNWR, Mt. Watatic	1, 1	T.Raymond,M.McClellan
5/12 on	P.I.(nesting at Warden*s)	max. 10	v.o.
5/19, 22	Manchester, Essex	3, 25+	nesting BBC, R.Heil#
Purple Martin:			
3/22, 30	Middleboro	1	K.Anderson,D.Briggs
3/31	W.Harwich	2	B.Nikula,P.Trull
4/14	P.I., E.Middleboro	1, 1	J.Clancy,K.Anderson
4/22	P.I., Halifax	24, 6	G.Soucy#, SSBC
thr. May	P.I.	max. 100	v.o.
5/12, 27, 28	Hanson,P'town,N.Beach	16+, 3, 1	W.Petersen
Blue Jays (migrants)			
5/4, 6	Framingham, N.Scituate	27, 35	R.Forster,W.Petersen
5/9, 10	Mt.A., Wellesley	80+, 51	R.Stymeist#,B.Cassie
5/12	S.Hanson-Bridgewater	100+	W.Petersen
5/16, 31	S.Peabody, Annisquam	70, 109	R.Heil, H.Wiggin
Fish Crow:			
3/4, 10	Milton, Brookline	2, 1	BBC, H.Wiggin
3/18	Sudbury, Lexington	1, 2	R.Walton,M.Litchfield
3/28	Kingston, E.Middleboro	2, 6	K.Anderson
thr. Apr.-May	Mt.A.	pair nesting	4/24 on R.Stymeist# + v.o.
4/13, 19	Lynn, Wellesley	1, 1	R.Heil, B.Cassie
4/30, 5/6	Marshfield, Hanover	5, 6	J.Hagar,W.Petersen
5/6, 20	N.Scituate,Plymouth	1, 1	W.Petersen
Boreal Chickadee:			
4/25	Essex	1	M.Barnett
Red-breasted Nuthatch:			
3/1-17	4 locations	singles	v.o.
4/14-21	Nantucket, Sharon	singles	C.Jackson,R.Butler
4/29	Boxford	4	R.Heil
5/1-19	4 locations	7 inds.	v.o.

Brown Creeper:			
3/4, 6	Boxford, Northboro	1, 1	R. Kleber#, P. Townsend
3/18, 23	Foxboro, IRWS	6, 6	D. Brown, R. Heil
3/31	Westport-Acoaxet	12	R. Heil, M. Kasprzyk
4/12-30	Mt. A.	1-5	v.o.
4/28 + 29	P'town	25	P. Trull, B. Nikula
5/22	Boxford	4 singing males	R. Heil#
House Wren:			
4/25	E. Middleboro, Wellesley	1, 3	K. Anderson, B. Cassie
4/26	Winchester, Ipswich, Harvard	1, 1, 1	M. McClellan, J. Berry, M. Sporer
5/3, 4-18	E. Lexington, Mt. A.	4, 4 inds.	L. Shimmel, J. Grugan + v.o.
5/5, 6	Natick, Saugus	1, 2	BBC, BBC
5/20	Woburn, Marshfield	5, 1	C. Jackson#, SSBC
Winter Wren:			
4/8; 18	S. Natick; Salem, Wayland	1; 1, 1	W. Drummond#; R. Heil, D. Long
4/19-29	MNWS	max. 3	R. Heil, M. Kasprzyk
4/19	Mt. A., Marshfield, N. Scituate	1, 1, 2	M. Greenwald, B. Harrigan, W. Petersen
4/21	Mt. Watatic, Mt. Wachusett	1, 1	M. McClellan#, W. Petersen#
4/21, 22-23	Wellesley, Manchester	1, 1	B. Cassie, H. Weissberg#
4/24, 29	P. I., Nahant	1, 3	P. Roberts#, S. Perkins
5/7, 12	S. Peabody, Nahant	1, 1	R. Heil
5/17	Wellesley	1	B. Cassie
Carolina Wren:			
3/24, 31	Marshfield, Westport-Acoaxet	2, 9	SSBC, R. Heil#
5/12 on, 14	Nahant, Weston	1, 1	R. Heil# + v.o., J. Devincenzi
5/20, 26-28	Marshfield, M.V.	2, 8	SSBC, BBC
Long-billed Marsh Wren:			
4/14-5/31	P. I.	max. 20	v.o.
5/15, 16	Lynnfield, Wayland	6, 6	R. Forster

MIMIDS THROUGH SHRIKES

The Varied Thrush from early January remained at a Chelmsford feeder through at least March 4. Hylocichia thrushes were very scarce, or undetected; Bluebirds were late returning to their usual nesting boxes and several people reported no returning Bluebirds this year. The Blue-gray Gnatcatcher continues to be found in good numbers during late April and early May; note the Provincetown count of 20 on May 5. A number of Northern Shrikes lingered into April; there were two reported Loggerhead Shrikes with no details received, or acknowledgement of this species' rarity in Massachusetts.

Gray Catbird:			
4/25, 30	Norwell, Marshfield	1, 1	D. Clapp, B. Harrigan
5/2, 2 on	E. Middleboro, Mt. A.	1, max. 18(5/10)	K. Anderson, v.o.
5/8, 12	Milton, P. I.	20, 65	W. Cornwell, B. Cassie
5/20	Westport, Ipswich	25, 24	BBC, BBC
Brown Thrasher:			
4/23, 24 on	MNWS, Mt. A.	1, 1-4	G. Soucy#, v.o.
4/25	Belmont, Woburn	1, 3	N. Harris, G. Gove
4/28	Westport area	3	SSBC
5/8, 14	Milton, P. I.	5, 8	W. Cornwell, D. Alexander#
5/20	Woburn, N. Scituate-Marshfield	5, 6	C. Jackson, SSBC
American Robin:			
3/17; 18	Boxford, Concord; Foxboro	15, 17; 69	M. Litchfield, R. Walton; D. Brown
3/31	Westport-Acoaxet	250	R. Heil, M. Kasprzyk
4/3	Wellesley, Waltham	350, 150	B. Cassie, R. Stymeist
4/7	W. Newbury, Ipswich	225, 200	BBC, BBC
Varied Thrush:			
3/1-4	Chelmsford	1 (from 1/12)	S. Henderson#
Wood Thrush:			
4/29	Manchester	1	P. Parsons
5/2, 5-23	Winchester, Mt. A.	2, 6 inds.	G. Gove, v.o.
5/8, 10	Milton, Wellesley	4, 9	W. Cornwell, B. Cassie
5/13, 14	Middlesex Fells, Rowley	6, 6	BBC, D. Alexander#
5/20	Westport area	25	BBC
Hermit Thrush			
3/28, 31	Middleboro, E. Middleboro	1, 1	D. Briggs, K. Anderson
4/10-5/8	Mt. A.	max. 9(4/24)	M. Moland + v.o.
4/11, 15	Wellesley, E. Middleboro	1, 1	B. Cassie, K. Anderson

4/22, 23	P.I., MNWS	24, 5	G.Soucy#, R.Heil
5/1, 2	MNWS, S.Peabody	12, 9	R.Heil
5/12, 13, 14	Boxford, P.I., Stoneham	1, 1, 1	M.Greenwald#, J.Berry, M.Martinek
Swainson's Thrush:			
5/9-31	Mt.A.	max. 11	R.Emery# + v.o.
5/9	Winchester, MNWS	1, 1	M.McClellan, G.Soucy#
5/22, 26	Nantucket, P.I.	1, 2	E.Andrews, P.Alden#
Gray-cheeked Thrush:			
5/13, 19, 22	Mt.A.	singles	S.Roberts#, G.d'Entremont#, J.Barton#
5/20, 26	Nahant, P.I.	1, 1	S.Zendeh, BBC(Alden)
Veery:			
5/1-22	Mt.A.	1-4	T.Marvin# + v.o.
5/6, 8	Middlesex Fells, Milton	2, 1	W.Cornwell
5/12, 14	Middleton, P.I.	6, 3	M.McClellan#, D.Alexander#
Eastern Bluebird:			
3/24, 4/1	Woburn	1, 2	G.Gove
4/11, 19	Sharon, Lynn	2, 2 pair	D.Clapp, R.Heil
4/22	Marshfield, Sutton	1, 2	SSBC, J.Johnson
4/27, late Apr.	Plymouth, S.Carver	pr., pr.	D.Turner, E.Akers
thr. May	Lynn	1-2 singing males	R.Heil
5/4, 11	Lincoln, Concord	2, 1	W.Harrington, M.Inman
5/18, 20	Middleboro, Plymouth	pr., 2	D.Briggs# + v.o., W.Petersen
5/22	Mt.A., Milton	1, 1	B.Anderson, W.Petersen
Blue-gray Gnatcatcher:			
4/18; 22	Wellesley; P.I., W.Newbury	1; 1, 1	B.Cassie; S.Garrett#, fide B.Emerson
4/23-5/22	Mt.A.	max. 6(4/28+5/3, 4)	v.o.
4/28 +29, 30	P'town, MNWS	15+, 7	P.Trull#, R.Heil
5/1, 5, 9	P'town	10, 20, 10	B.Nikula# + v.o.
5/4, 6	Winchester, MNWS	2, 7	M.McClellan, C.Blaszcak
5/20	Boxford State Forest	2 pr. nesting	R.Stymeist, S.Roberts
5/26-28	M.V.	12	BBC(Kenneally)
other locations totaling 21 individuals			
Golden-crowned Kinglet:			
3/15, 23	E.Middleboro, IRWS	1, 6	K.Anderson, R.Heil
3/31	P.I., Westport-Acoaxet	1, 10	H.Wiggin, R.Heil#
4/1	Concord, Woburn, Grayton	3, 1, 1	R.Walton, G.Gove, J.Johnson
4/8-25	Mt.A.	10-1	C.Hubbard# + v.o.
4/8, 11	Marshfield, Sharon	8-10, 4	M.Litchfield, D.Clapp
4/11, 19	Concord, MNWS	3, 10	R.Walton, M.Kasprzyk
5/6	Dover	1	F.Hamlen
Ruby-crowned Kinglet:			
4/4 on	MNWS	5-38 (4/23)	M.Kasprzyk# + v.o.
4/8, 11	Wakefield, Wellesley	1, 4	C.Jackson, B.Cassie
4/18-5/13	Mt.A.	max. 100(4/24)	S.Perkins# + v.o.
4/22, 29	Lynn, Boxford	43, 22	R.Heil
4/28 + 29	P'town	125+	B.Nikula#
5/5, 8	P'town, Newburyport	15, 5	R.Veit#, W.Gordon
5/19, 27	P'town, P.I.	2, 1(singing)	BBC(Bryant), I.Giriunas, T.Lawrence
Water Pipit:			
3/28, 4/9	Middleboro, GMNWR	1, 5	D.Briggs, M.McClellan
4/28, + 5/3	W.Bridgewater	3, 5	W.Petersen, W.Cornwell
5/2	S.Natick	5	F.Hamlen
Bohemian Waxwing:			
3/3-10, 26	Concord, Framingham	1, 2	R.Walton+v.o., K.Hamilton
Cedar Waxwing:			
3/3, 10	Concord	77, 104	R.Walton, B.Cassie
3/14, 17	Wellesley, Kingston	60, 35	B.Cassie, D.Briggs
4/26, 29	Ipswich, Lynnfield	12, 14	J.Berry, R.Stymeist#
5/16, 19	Mt.A., Sherborn	6, 2	M.Greenwald#, BBC
5/29, 30	Winchester, Framingham	12-20, 17	G.Gove, R.Forster
5/30, 31	Ipswich, Annisquam	12, 21	J.Berry, H.Wiggin
Northern Shrike:			
thr. Mar.	north of Boston	18 inds. reported	v.o.
thr. Mar.	south of Boston	9 inds. reported	v.o.
thr. Mar.	west of Boston	5 inds. reported	v.o.
late Mar.	Harwich to P'town	8-9 inds. reported	B.Nikula
4/13, 14	Marshfield, Nantucket	1, 1	W.Petersen, C.Jackson
4/15, 16	Bolton, S.Halifax	1, 1	R.Forster, D.Briggs

VIREOS THROUGH WARBLERS

A very early Worm-eating Warbler was found on April 23 at Mount Auburn and another was reported from Marblehead Neck on the 29-30 of April. No doubt this was blown up during the April storm which also sent us Prothonotary, 5 Yellow-throated, a very early Magnolia, as well as earlier than usual arrival dates for first wave warblers (Black-and-white, Parula, Nashville, etc.).

Blue-winged Warblers continue to overshadow reported Golden-winged which seem to be phasing out more and more each year. A "Lawrence's" Warbler delighted many observers when it spent most of May on Pikes Bridge Road, West Newbury. Only 3 migrant Orange-crowned Warblers were noted as compared with 8 last year. An "Audubon's" Warbler was reported from Mount Auburn Cemetery; this accidental visitor from the west has only occurred twice, both times collected in Massachusetts. Other unusual warblers included 6 Ceruleans, 6 Kentuckys, 5 chats and 9 Hoodeds.

White-eyed Vireo:

4/26, 29	MNWS, Nahant	1, 1	R.Heil, S.Perkins
5/3, 5	Saugus, Nantucket	1, 2	M.Kasprzyk, E.Andrews
5/8, 8+9	Nahant, Mt. A.	1, 2	fide G.Soucy, v.o.
5/10, 12	Marblehead, W.Newbury	1, 1	G.Soucy#, B.Cassie
5/12, 13	Hamilton, Scituate	1, 1	J.Berry, W.Petersen
5/20	Westport area, Ipswich	2, 2	BBC, BBC

Yellow-throated Vireo:

5/9, 10	Mt.A., Northboro	1, 1	M.Greenwald#, B.Blodget
5/12, 14	Wellesley, Holliston	1, 1	B.Cassie, R.Forster
5/18-19, 19	MNWS, Bridgewater	1, 1	D.Brown + v.o., W.Petersen
5/24 on, 29	Boxford, Sandwich	2, 1	L.Jodrey#+v.o., R.Pease

Solitary Vireo:

4/22; 23	Lynn; MNWS, Winchester	2; 1, 1	R.Heil; v.o., G.Gove
4/25-5/22	Mt.A.	max.10 (4/28)	R.Stymeist# + v.o.
5/2, 3	S.Peabody, Wellesley	7, 1	R.Heil, B.Cassie
5/4, 5	Wollaston, Halifax	1, 1	W.Cornwell, K.Anderson
5/5, 6	P'town, Saugus	5, 3	R.Veit#, C.Jackson#

Red-eyed Vireo:

thr. May	Mt.A.	max. 15	v.o.
5/8; 9	Newburyport; MNWS, Winchester	3; 1, 3	W.Gordon; G.Soucy#, G.Gove
5/14, 19	P.I., Manchester	6, 8	D.Alexander#, BBC
5/26-28	M.V.	75	BBC

Philadelphia Vireo:

5/8; 12	Winchester; P.I., W.Newbury	1; 1, 1	G.Gove; BBC, D.Briggs
5/14, 15-16	Stonham, Mt.A.	1, 1+	M.Martinek, R.Stymeist#, J.Grugan
5/23	MNWS	1	R.Heil

Warbling Vireo:

5/3, 10 on	Wellesley	1, 2	B.Cassie
5/5 on	Lynnfield	2-4	G.Gove + v.o.
5/7 on	Woburn (Horn Pond)	2-5+	G.Gove + v.o.
5/8-10, 31	Mt. A.	1-2, 1	R.Stymeist# + v.o.
5/9, 12	Watertown, Middleton	4, 6	R.Stymeist, M.McClellan
5/20, 21	Middleboro, Milton	2, 3	W.Petersen, D.Brown
5/27	Essex County	9	R.Stymeist#

Black-and-white Warbler:

4/23	Sandwich, Wellesley	1, 1	R.Pease, B.Cassie
4/24	M.V., Sharon	1, 1	V.Laux, D.Clapp
4/26-5/28	Mt.A.	max. 24 (5/9)	R.Stymeist# + v.o.
4/28, 29	W.Newbury, Saugus	1, 3	R.Heil, C.Jackson
5/1, 3	E.Middleboro, Bolton	5, 1	K.Anderson, M.Lynch
5/7 + 16, 8	S.Peabody, Lynn	21 + 27, 42	R.Heil
5/8	Milton, Winchester	8, 25	W.Cornwell, G.Gove
5/8, 10	Newburyport, Brookline	20, 6	W.Gordon, A.Agush

Prothonotary Warbler:

4/26, 27	Squantum, Truro	1, 1	D.Brown, fide W.Bailey
5/1-16, 3	M.V., WBWS	1-2, 1	V.Laux+v.o., C.Goodrich
5/8, 16-19	Nantucket	1 female, 1 male	S.Perkins# + v.o.
5/11	Plymouth	1	R.Timberlake

Worm-eating Warbler:

4/23, 29-30	Mt.A., MNWS	1, 1	C.Jackson#+v.o., L.Healy#+v.o.
5/1-3 + 19, 7	MNWS, Marblehead	1, 1	R.Heil + v.o., R.Heil

5/2, 5	M.V., P'town	2, 1	V.Laux#,C.Goodrich# + v.o.
5/6, 8	Gloucester, Manomet	1, 1b	C.Leahy, MBO staff
5/9+10, 10	Dover, Brookline	2, 1	F.Hamlen,A.Agush
5/10	Mt.A., WBWS	1, 1	W.Allan,B.Nikula#
5/12, 20	P.I., Westport	1, 1	B.Cassie, D.Davis
5/27	Boxford	1	R.Veit, E.Stymeist#
Golden-winged Warbler:			
5/6 on	W.Newbury	max. 5 (5/10)	R.Heil + v.o.
5/7, 8	Newton, M.V.	1, 1	O.Komar, V.Laux
5/16, 19, 20	S.Peabody,Framingham,Ipswich	1,1,1	R.Heil,R.Forster,I.Giriunas#
Blue-winged Warbler:			
5/6	Wellesley	2	B.Cassie
5/7 on	W.Newbury	max. 7 (5/12)	v.o.
5/7, 8-17	Northboro, Mt.A.	1, max. 4	C.Kamp,R.Stymeist# + v.o.
5/8, 10	Milton, Marblehead	3, 1	W.Cornwell,G.Soucy#
5/12, 13	E.Bridgewater, Sharon	2, 18	W.Petersen, D.Clapp
5/17, 26-28	Hingham, M.V.	4, 6	B.Treat#, BBC
"Brewster's Warbler:"			
5/10-27	W.Newbury	1	P.Hallowell# + v.o.
"Lawrence's Warbler:"			
5/9-27	W.Newbury	1	W.Drummond# + v.o.
Tennessee Warbler:			
5/3, 8-28	Bolton, Mt.A.	1, max. 18	M.Lynch, v.o.
5/9, 10	MNWS, Brookline	2, 3	C.Corley, A.Agush
5/10, 13	Wellesley, P.I.	3, 2	B.Cassie
5/16	S.Peabody	13	R.Heil
Orange-crowned Warbler:			
3/1-4/17	Lincoln	1 (at feeder)	W.Harrington + v.o.
5/2-4, 9, 13	Mt.A.	1, 1, 1	A.Scott#+v.o.,L.Crofoot#,Litchfields
Nashville Warbler:			
4/24, 25	Harvard, W.Gloucester	1, 1	M.Sporer,M.Barnett
4/26, 30-5/19	Squantum, Mt.A.	1, max. 20(5/10)	D.Brown, v.o.
5/3, 7	Winchester	2, 4	G.Gove
5/5, 6	Saugus, Squantum	2, 1	C.Jackson#,J.Murphy
5/27, 28	Boxford, Ipswich	4 m., 2 m.	R.Veit#,J.Berry
Northern Parula:			
4/24-5/31	Mt.A.	max. 16 (5/3)	R.Stymeist# + v.o.
4/26, 5/3	Squantum, Bolton	2, 1	D.Brown, M.Lynch
5/5, 6	Saugus, MNWS	2, 1	C.Jackson#, BBC
5/13, 16	P.I., S.Peabody	8, 36	J.Berry, R.Heil
Yellow Warbler:			
4/15, 25	P'town, Bolton	1, 1	R.Prescott#,B.Blodgett
4/26, 28	Squantum, Bridgewater	1, 1	D.Brown,W.Petersen
5/3, 4-31	Wayland, Mt.A.	2, 1-4	R.Forster, v.o.
5/5-31	P.I.	max. 75	v.o.
5/6 on, 12	Lynnfield, Saugus	max. 25, 5-10	W.Cornwell#+v.o.,C.Jackson#
5/20	Westport area, Woburn	20, 25	BBC, C.Jackson#
Magnolia Warbler:			
4/28 (early)	Medfield	1 (well described)	R.Butler
5/9 on	Mt.A., MNWS	max. 8, max. 17	v.o., v.o.
5/9, 12	Winchester, Wellesley	1, 1	G.Gove, B.Cassie
5/16, 26	S.Peabody, Boxford	13, 5	R.Heil, J.Murphy#
Cape May Warbler:			
5/7-22, 8-16	Mt.A., Nantucket	max. 8, 1-3	v.o., E.Andrews
5/10, 12	Brookline, Newburyport	3, 1	A.Agush, BBC
5/16	S.Peabody	13	R.Heil
Black-throated Blue Warbler:			
4/26 (early)	Squantum	1	D.Brown
5/5	P'town, Saugus	4, 1	R.Veit#,C.Jackson#
5/5-31, 7	Mt.A., Winchester	max. 6, 2	v.o., G.Gove
5/14, 19	P.I., P'town	6, 2	D.Alexander#,J.Bryant#
Yellow-rumped Warbler:			
3/3 + 4	Nantucket	15	C.Jackson#
3/17, 21	Lakeville, Plymouth	6, 25	SSBC, R.Heil
4/5 + 23	GMNWR	6, 25	M.McClellan#,B.Litchfield#
4/20-5/29	Mt.A.	max. 150 (5/5)	v.o.
4/25	Lynn, Wayland	35, 60	R.Heil, R.Forster
4/28, 5/5	P'town	600, 300	B.Nikula, R.Veit#

5/6	Dover, Saugus	50-75, 50+	F.Hamlen, C.Jackson
5/7, 7+16	Winchester, S.Peabody	150, 110+100	G.Gove, R.Heil
5/8, 10	Milton, Brookline	50, 20	W.Cornwell, A.Agush
"Audubon's Warbler:"			
5/17	Mt.A.	1	D.Brawnhardt# + v.o.
Black-throated Green Warbler:			
4/24, 26	Harvard Squantum	1, 2	M.Sporer, D.Brown
4/28, 29	MNWS, Boxford	1, 5	v.o., R.Heil#
5/5 on	Mt.A., Boxford	max. 10, max. 30	v.o., v.o.
5/6	Dover, Northboro	1, 1	F.Hamlen, C.Kamp
5/16	S.Peabody	27	R.Heil
Cerulean Warbler:			
5/9; 11, 15, 18	MNWS	1 f; 1 m.	R.Heil# + v.o.
5/11-12, 14	M.V., P.I.	1, 1	V.Laux#, D.Alexander#
5/16	Wayland, Nantucket	1, 1 f.	J.Hayes#, E.Andrews
Blackburnian Warbler:			
4/24, 26	Mt.A., Squantum	1, 1	J.Grugan, D.Brown
5/8-31	Mt.A.	max. 6	R.Stymeist# + v.o.
5/10, 14	Marblehead, P.I.	2, 1	G.Soucy#, D.Alexander#
5/20	N.Scituate, Ipswich	1, 3	SSEC, BBC
5/27	Boxford State Forest	18	R.Stymeist#
Yellow-throated Warbler:			
4/1 (early)	Westport	1	S.Bolton
4/24, 5/1-2	Mt.A.	1, 1	S.Perkins#+v.o., O.Komar#+v.o.
4/25, 28	Wayland, WBWS	1, 1	R.Forster, W.Bailey
late May	Nantucket	1	S.Perkins
Chestnut-sided Warbler:			
5/9-27, 9	Mt.A., Winchester	max. 4, 1	v.o., G.Gove
5/12, 17	W.Newbury, Hingham	4-5, 3-4	D.Briggs#, B.Treat#
Bay-breasted Warbler:			
5/8, 9-31	Norwell, Mt.A.	1, max. 10	K.Jones, M.Baird#+v.o.
5/12, 16	W.Newbury, S.Peabody	3-4, 6	D.Briggs#, R.Heil
5/19, 27	P.I., Newburyport	8, 9	H.Weissberg#, R.Stymeist#
Blackpoll Warbler:			
5/4, 5, 6	Cambridge, P'town, Squantum	1, 1, 2	R.Stymeist, M.Litchfield, J.Murphy
5/7 on	Mt.A.	max. 28	S.Denison# + v.o.
5/10, 12	Brookline, Wellesley	3, 12	A.Agush, B.Cassie
5/16, 26	S.Peabody, Newburyport	30, 8	R.Heil, J.Murphy
Pine Warbler:			
3/?	Plymouth	2	T.Lloyd-Evans#
4/10, 18	Mt.A., Lynn	1, 1	M.Noland, R.Heil
4/20	Wareham, Dover	9, 1	N.Claflin, F.Hamlen
4/22	Boxford, Manchester, P.I., Lynn	4, 1, 1, 2	R.Stymeist#, H.Weissberg#, G.Soucy#, R.Heil
5/5, 6, 7	P'town, Dover, Northboro	10, 1, 1	R.Veit#, F.Hamlen, C.Kamp
5/14, 26-28	P.I., M.V.	1, 6	D.Alexander#, BBC
Prairie Warbler:			
5/2-10, 5	Mt.A., P'town	max. 3, 5	R.Stymeist#+v.o., R.Veit#
5/6, 9	Saugus, Dover	1, 1	BBC, F.Hamlen
5/12, 20	W.Newbury, Woburn	14, 4-5	R.Stymeist#, C.Jackson#
5/26-28	M.V.	15	BBC
Palm Warbler			
4/18-5/6	Mt.A.	1-30(max. 4/24)	C.Jackson + v.o.
4/18 + 22	Lynn	10, 18	R.Heil
4/22	Ipswich, P.I., W.Newbury	3, 12, 12	J.Berry, G.Soucy#, G.Soucy#
4/28 + 29, 5/5	P'town	60+, 20	B.Nikula#, R.Veit#
5/6	Saugus, Squantum, M.Fells	1, 1, 1	BBC, J.Murphy, N.King#
Ovenbird:			
5/5; 5-31	Dover, P'town; Mt.A.	1, 1; max. 6	F.Hamlen, R.Veit#, v.o.
5/6, 16	Boxford, S.Peabody	7, 18	J.Berry, R.Heil
Northern Waterthrush:			
4/26-5/22	Mt.A.	max. 5	P.Roberts# + v.o.
4/26 + 5/1, 29	E.Middleboro, Boxford	1 +2-4, 3	K.Anderson, R.Heil#
5/3	Winchester, Wellesley, Bolton	2, 1, 1	G.Gove, B.Cassie, M.Lynch
5/7, 13	MNWS, P.I.	8, 3-4	R.Heil, J.Berry
5/12	Middleton	5	M.McClellan#
Louisiana Waterthrush:			
4/19	Mt.A., Wellesley	1, 1	BBC, B.Cassie
4/21-5/31	Boxford State Forest	max. 4 singing m.	A.Scott#+v.o.

5/6, 8, 10	Saugus, M.V., MNWS	2,1,1	C.Jackson,V.Laux,H.Weissberg
5/14; 22	P.I.; Nahant, Milton	1; 1, 1	D.Alexander#;R.Heil#,W.Petersen#
Kentucky Warbler:			
5/5, 10, 14	M.V., WBWS, P.I. 1,1(hit window), 1		V.Laux,W.Bailey,D.Alexander#
5/15, 16, 17	MNWS, P.I., Sharon	1,1,1	R.Heil,A.Scott,D.Clapp#
Mourning Warbler:			
5/15 + 20, 22	MNWS, Brookline	1+1, 1	R.Heil, A.Agush
5/24; 27	Mt.A.; P.I., N.Scituate	1; 2, 1	O.Komar#,v.o.,M.Litchfield
Common Yellowthroat:			
4/26, 5/2 on	MNWS, Mt.A.	2, max. 10	R.Heil#,J.Marshall#+v.o.
5/5; 6	Wellesley;Saugus,Lynnfield	5; 5, 20	B.Cassie;C.Jackson#,W.Cornwell
5/8, 12	Milton, P.I.	40, 85	W.Cornwell,B.Cassie
5/16, 20	S.Peabody, Woburn	42, 15	R.Heil,C.Jackson#
Yellow-breasted Chat:			
5/12, 13	S.Peabody, Sharon	1, 1	R.Heil, D.Clapp
5/16,20,30	Hudson, P.I., Dartmouth	1,1,1	E.Salmela,B.Keenan#,D.Brown
Hooded Warbler:			
4/23-25	MNWS	1	M.Kasprzyk# + v.o.
5/5, 9	Lincoln, Boston(Public Garden)	1, 1	P.Swift, A.Agush
5/14, 15	P.I., Mt.A.	1, 2	D.Alexander#,R.Stymeist#
5/16; 17	M.V., Bolton; P'town	1, 1; 1	V.Laux,E.Salmela;fide B.Nikula
Wilson's Warbler:			
5/10-29, 10	Mt.A., MNWS	max. 7, 1	v.o., G.Soucy#
5/12, 26	P.I.	6, 4	B.Cassie, BBC
Canada Warbler:			
5/8	E.Middleboro, Milton	1, 1	K.Anderson,W.Cornwell
5/9-31, 9	Mt.A., MNWS	max. 7, 1	v.o., G.Soucy#
5/26	Boxford, P.I.	4-5, 4	J.Murphy#, P.Alden#
American Redstart:			
5/8-31	Mt.A.	max. 18 (5/10)	v.o.
5/8	Winchester, Milton	5, 4	G.Gove#, W.Cornwell
5/8, 12	Newburyport, P.I.	4, 14	W.Gordon, B.Cassie
5/16, 31	S.Peabody, Annisquam	45, 9	R.Heil, H.Wiggin

BOBOLINK THROUGH BUNTING

Two Yellow-headed Blackbirds were reported this spring though it is usually a fall migrant. These reports bring the total of spring Yellow-headed Blackbirds to 12 since 1973. A Western Tanager was reported from Rowley, most unusual in the spring; most reports occur in the fall (when the bird is probably misidentified). A total of 15 Summer Tanagers were reported (cf. 6, 5, 3, 3, 7, 4 totals for May since 1973). Two Harris' Sparrows were reported. The Acoaxet adult continued through March 11; it had been discovered on the Westport CBC in December. In Peabody a 1st year immature male was discovered in early March, and it remained through at least April 23. Observers watched this bird through molt to near adult plumage, and it was heard singing on 3 occasions. Very few White-crowned Sparrows were reported this spring and a Snow Bunting was found on Nauset Beach on the late date of May 16.

Bobolink:

5/3; 5 + 6, 5	Bolton; Lynnfield, Newbury	3; 1, 3	M.Lynch;G.Gove,BBC
5/6, 8	Marshfield, Milton	3, 6	R.Timberlake#,W.Cornwell
5/17, 19	Wellesley, W.Newbury	35, 52	B.Cassie,H.Weissberg#
5/20	Mt.A., Ipswich	25, 40	C.Jackson#,I.Giriunas

Yellow-headed Blackbird:

5/20-26, 22	Essex, Manchester	1, 1 imm.	K.Tousey,P.Campbell#
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Eastern Meadowlark:

3/4, 17 on	Marshfield, P.I.	50, 2	SSBC, v.o.
3/18, 24	Ipswich, Marshfield	8, 15	BBC, SSBC
4/15, 18	Essex, Wellesley	11, 1	BBC, B.Cassie

Redwinged Blackbird:

3/3	first arrivals reported from various locations		
3/6, 17, 21	Halifax	200, 2000+, 1600	K.Anderson,W.Petersen
3/6	GMNWR, F.Meadow	50, 850	R.Walton, D.Brown
3/9, 28	E.Middleboro	1000, 2000	K.Anderson
3/10-17	general arrival in large numbers throughout		

Orchard Oriole:

5/1-27, 2	Mt.A., S.Peabody	1-3, 1	v.o., R.Heil
5/3; 7 on	Waltham, Saugus; Woburn	1, 2; 2	J.Luck,M.Kasprzyk;G.Gove

5/9 on	Marshfield, Wellesley	1, 1-2	B.Harrigan, B.Cassie
5/10; 10 on	Bridgewater, Needham; Rowley	1,1;2	W.Petersen,R.Sommers;P.Parsons#
5/12	Nahant,Framingham,S.Hanson	2,1,1	R.Heil,R.Forster,W.Petersen
5/16; 20	Bolton, M.V.; Nahant	2,2; 1	E.Salmela,V.Laux;H.Coolidge#
5/21 on; 26	S.Peabody,Milton;Framingham	3,2;3	R.Heil,D.Brown;R.Forster
Northern Oriole:			
thr.May	Mt.A.	max. 15	v.o.
5/12, 14	Essex County, Rowley	200, 12	R.Stymeist#,D.Alexander#
5/20	Woburn	15	C.Jackson
Rusty Blackbird:			
3/6, 8	Milton, Woburn	3, 4	D.Brown, G.Gove
3/22, 24	S.Peabody, E.Middleboro	26, 50	R.Heil, K.Anderson
3/31, 4/13	GMNWR, Wellesley	24, 43	R.Welton, B.Cassie
4/16, 18	Braintree, Lynn	20+, 18	G.d'Entremont,R.Heil
4/21,22	Ipswich River, Milton	115, 50	R.Stymeist#,M.Litchfield
5/6	Lynnfield	35	W.Cornwell
Common Grackle:			
3/11, 6	Bridgewater, Halifax	20, 25	W.Petersen,K.Anderson
3/6, 8	Milton, Woburn	1600, 80	D.Brown, G.Gove
3/10-11	general arrival in large numbers throughout		
Brown-headed Cowbird:			
3/6, 16	Milton, S.Peabody	52, 50	D.Brown, W.Foley
5/7	P.I.	80	B.Cassie
Western Tanager:			
5/21	Rowley	1	D.Alexander# + v.o.
Scarlet Tanager:			
5/3, 6	Winchester, Boxford	1, 2	M.McClellan, J.Berry
5/7, 8 on	Northboro, Mt.A.	1, max. 8	C.Kamp, v.o.
5/12, 14	Middleton,Newburyport	7, 3	M.McClellan,D.Alexander#
5/27	Boxford, Ipswich	16, 8	R.Stymeist#,J.Berry
Summer Tanager:			
4/28-5/12	P'town	at least 3 different birds	C.Goodrich, B.Nikula#
5/4	Winchester, Gloucester	1, 1 ad.	G.Gove, C.Leahy
5/8, 9	Gloucester, E.Milton	1 imm., 1	C.Leahy, D.Brown
5/10	WBWS, Nantucket	1, 1	W.Bailey#,J.Paird
5/11 + 16	Mt.A.	2 different birds	I.Giriunas#,R.Forster#
5/13, 17	MNWS, Wollaston	1, 1	fide G.Soucy,W.Cornwell
5/23, 29	Cuttyhunk, Hingham	1, 1	E.Landre,N.Osborne
Cardinal:			
3/31	Westport-Acoaxet area	80+	R.Heil,M.Kasprzyk
Rose-breasted Grosbeak:			
4/28, 30	Dartmouth, Nantucket	2, 1	SSBC, M.Litchfield#
5/5, 7	Lynnfield, Winchester	1, 1	G.Gove, G.Gove
5/7-30	Mt.A.	max. 8	v.o.
5/10, 13	Wellesley, Middlesex Fells	8, 4	R.Sommers, BBC
5/16,	S.Peabody	14	R.Heil
Blue Grosbeak:			
4/26, 29	Squantum, Marshfield	2, 1	D.Brown,B.Litchfield#
4/20-5/6	Rockport	1 (b.)	Mrs.Taylor,R.Norris#
5/1-10, 8	Nantucket, W.Newbury	1, 1	B.Andrews#,R.McHale#
Indigo Bunting:			
4/1, 15	Westport, Nantucket	1, 1	S.Bolton#,M.Litchfield
4/28-30	outer cape	5-6	v.o.
4/28, 29, 30	P.I., Marshfield, Bedford	1,1,1	G.Soucy#,W.Petersen,L.Pierson
5/1	Swampscott, M.V., Lynn	2, 1, 1	J.Ingalls,V.Laux,R.Heil
5/1-28	Mt.A.	1-8	T.Marvin# + v.o.
5/8-9	general arrival with lots of singles reported throughout		
Evening Grosbeak:			
3/3	Stow, Concord, Ipswich	52, 17, 10	R.Stymeist#,R.Walton,J.Berry
4/28, 29	E.Middleboro, Boxford	25+, 10	K.Anderson, R.Heil
5/6, 10	Littleton, P'town	6, 200	J.Baird,C.Goodrich
5/27	MNWS	1	R.Stymeist#,R.Veit,S.Roberts
Purple Finch:			
3/17	Bridgewater	1	SSBC
4/15, 19	Essex, Wellesley	9, 1	BBC, B.Cassie
4/30-5/31	Mt.A.	max. 18(5/10)	R.Stymeist# + v.o.
5/2, 3	Lexington, Bolton	8, 7	M.Baird, M.Lynch
5/5, 8	P'town, Milton	25, 10	R.Veit#,W.Cornwell

House Finch:			
3/3, 31	Nantucket, Westport area	60, 50+	BBC, W.Petersen
Pine Grosbeak:			
3/3, 4	Concord (2 locations)	14, 7	R.Walton, L.Taylor
3/21, 27	Sharon, Carlisle	2, 1	D.Clapp, E.Darling
4/21	Ashburnham	1	R.Stymeist, L.Robinson
Common Redpoll:			
4/1 + 4	Athol	1	R.Coyle#
Pine Siskin:			
3/3, 9	Concord, Peabody	6, 2	R.Walton, H.Wiggin#
3/14, 24	W.Newton, Boxford	6, 1	N.Wheelock, R.Heil#
4/1, 19	Middlesex Fells, Norwell	2, 1	P.Roberts, W.Petersen
5/2, 10	Lincoln, Mt.A.	1, 6	M.Bovey, J.Shetterley#
Rufous-sided Towhee:			
3/31	Acoaxet	3	M.Kasprzyk#
4/22-5/18	Mt.A.	max. 7 (5/7)	S.Denison# + v.o.
4/23, 25	Wellesley, Norwell	2, 1	B.Cassie, D.Clapp#
4/26, 28	P.I., W.Newbury	4, 12	M.McClellan, R.Heil
5/8, 13	Milton, Middlesex Fells	22, 8	W.Cornwell, G.Gove
Savannah Sparrow:			
4/28	Bridgewater area	50+	W.Petersen
4/28	Concord, P.I.	17, 17	R.Walton, J.Murphy
5/6	Halifax	50	K.Anderson
Savannah "Ipswich" Sparrow:			
3/31	W.Dennis	1	B.Nikula, P.Trull
Grasshopper Sparrow:			
5/17, 20	M.V., Dartmouth	1, 1	D.Briggs, D.Davis#
5/26-28	M.V.	6	BBC(J.Kenneally)
LeConte's Sparrow: (no details)			
5/30	Dartmouth (Barney's Joy)	1	D.Brown#
Sharp-tailed Sparrow:			
5/12, 20	P.I., Saugus	1, 1	B.Cassie, C.Jackson#
5/22, 26-28	Plymouth, M.V.	1, 10	W.Petersen#, BBC
Seaside Sparrow:			
5/26-28	M.V.	1	BBC(J.Kenneally)
Vesper Sparrow:			
4/21, 26	Framingham, S.Natick	3, 1	R.Forster, F.Hamlen
4/29	P.I., GMNWR	3, 1	R.Butler, R.Walton
5/20	Plymouth	1	W.Petersen
Lark Sparrow:			
4/28-30	E.Orleans	1 (at feeder)	fide W.Bailey
5/12	Monomoy	1	C.Goodrich
Dark-eyed Junco:			
3/22, thr. Apr.	Mt.A.	100, max. 200+	C.Jackson, v.o.
5/1-8	Mt.A.	10-1	v.o.
Tree Sparrow:			
4/6, 16	P.I., S.Hanson	25, 1	J.Grugan, W.Petersen
Chipping Sparrow:			
4/15-5/31	Mt.A.	max. 15	F.Bouchard# + v.o.
4/18	Braintree, Wellesley	2, 2	R.Emery#, B.Cassie
4/28	Westport area	20	SSBC
Field Sparrow:			
3/17, 22	Cambridge, Mt.A.	3, 3	L.Taylor, C.Jackson
3/31	Westport-Acoaxet	12	R.Heil#
4/28, 5/16	W.Newbury, S.Peabody	12, 22 residents	R.Heil
Harris' Sparrow:			
3/1-11	Acoaxet	1 ad. (from Dec.)	v.o.
3/9-4/23	Peabody	1 (1st yr. imm.)	R.Heil + v.o.
White-crowned Sparrow:			
3/22-31	Danvers	4	E.Pyburn + v.o.
5/6 + 9	Wellesley	1 + 1	B.Cassie
5/7 + 12	P.I.	2 + 3	B.Cassie + v.o.
5/9, 24	Mt.A., Halifax	2; 1	R.Emery# + v.o., K.Anderson
White-throated Sparrow:			
4/24, 5/1-27	Mt.A.	150, 300-1 (max. 5/7)	R.Stymeist# + v.o.
5/7	S.Peabody, Winchester-Woburn	140, 170	R.Heil, G.Gove
Fox Sparrow:			
3/17, 23-29	P.I., Manchester	1, 1-3	J.Berry, P.Campbell

3/30, 31	Beverly, Boxford	4, 1	R.Heil, G.Soucy#
4/18	Wellesley, S.Peabody	1, 6	B.Cassie, R.Heil
4/25, 26	Stoneham, Ipswich	1, 1	M.Martinek, I.Giriunas
Lincoln's Sparrow			
5/9, 17-22	W.Newbury, Mt.A.	1, 1	W.Drummond#, D.Braunhardt#+v.o.
5/20	MNWS, W.Newbury	1, 1	R.Heil, S.Roberts#
5/22, 23	Nahant, Newton	1, 1	R.Heil, O.Komar
Swamp Sparrow:			
4/5, 11	GMNWR, Wellesley	4, 2	M.McClellan, B.Cassie
4/29	Lynnfield, Rowley	25+, 15	R.Stymeist#
Song Sparrow:			
3/22; 24	Squantum; P.I., Marshfield	25; 90+, 34	R.Emery#; R.Heil, SSBC
3/25, 31	Newton, Westport-Acoaxet	25, 220	A.Atwood, R.Heil#
Lapland Longspur:			
3/1, 17, 4/14	Salisbury	175-200, 14, 4	R.Heil, O.Komar#, V.Albee#
4/8, 22	P.I., Bolton	6, 1	R.Heil, B.Blodgett
Snow Bunting:			
4/1	Salisbury	5	G.Soucy#
5/16	Nauset	1	P.Trull

List of Abbreviations

ad.	adult	SSBC	South Shore Bird Club
b.	banded	GMNWR	Great Meadows National Wildlife Refuge
d.	dark phase	IRWS	Ipswich River Wildlife Sanctuary
f.	female	MBO	Manomet Bird Observatory
imm.	immature	MNWS	Marblehead Neck Wildlife Sanctuary
l.	light phase	WBWS	Wellfleet Bay Wildlife Sanctuary
m.	male	WNWS	Wachusett Meadows Wildlife Sanctuary
max.	maximum	AA	Arnold Arboretum
thr.	throughout	A.P.	Andrews Point, Rockport
v.o.	various observers	E.P.	Eastern Point, Gloucester
yg.	young	F.M.	Fowl Meadow, Milton
#	additional observers	M.V.	Marthas Vineyard
ABC	Allen Bird Club	Mt.A.	Mt. Auburn Cemetery, Cambridge
BBC	Brookline Bird Club	P.I.	Plum Island
CBC	Christmas Bird Count	S.N.	Sandy Neck, Barnstable

ADDENDA - FALL 1978

Northern Fulmar:	9/24	8-10 miles E. of Chatham	40	C.Goodrich#
Golden Eagle:	10/21	Chatham	1 imm.	H.Rich#+vo
Loggerhead Shrike:	9/21	Sandwich	1	R.Pease

CORRIGENDA - FALL 1978

American Oystercatcher:	9/?	Monomoy	27	B.Nikula
		should read		
	9/23,30	Monomoy	16,11	B.Nikula
Parasitic Jaeger:	thr.Sept.	Chatham-Monomoy	10	B.Nikula#vo
	This record should be deleted, Blair Nikula reported that there were no counts of over 10 during the month, but there were certainly many more than 10 total as suggested by the above record.			
Black Tern:				
10/9 (late)	P.I.		1	BBC(H.d'Entremont)
				should read
Black Tern:				
10/9 (late)	Provincetown		1	R.Heil#
Dickcissel:	10/22	Truro-Orleans	8-10	B.Nikula
	This record should be deleted, Blair Nikula reported a total for the month of 8-10 from Truro, Provincetown, and Orleans.			
Golden-winged Warbler:	8/30	Sandwich	1	R.Pease
		should read		
	8/30	Chatham	1	B.Nikula
Yellow-headed Blackbird:	9/17	Centerville	1	V.Laux
	This record should be deleted.			
Grasshopper Sparrow:	10/14	Orleans	1	B.Nikula
	This record should be deleted.			

TIDE CHART

Here is the tide table for Boston Harbor; add one hour for Daylight Savings Time.

1979 SEPTEMBER TIDES 1979

Morning	BOSTON	Afternoon	Morning	BOSTON	Afternoon
High 12.45 Height 11.5 Low 6.55 Low Height -1.7 Sunrise 5.18	SUNDAY 9	High 1.11 Height 1.15 Low 7.24 Low Height -0.7 Sunset 6.03	High 7.31 Height 8.4 Low 1.13 Low Height 0.7 Sunrise 5.27	SUNDAY 16	High 7.49 Height 9.3 Low 1.30 Low Height 1.2 Sunset 5.47
High 1.38 Height 11.0 Low 7.46 Height -1.3 Sunrise 5.19	MONDAY 10	High 2.03 Height 11.2 Low 8.16 Low Height -1.3 Sunset 5.58	High 8.26 Height 8.6 Low 2.08 Low Height 0.6 Sunrise 5.38	MONDAY 17	High 8.41 Height 9.4 Low 2.22 Low Height 1.0 Sunset 5.47
High 2.33 Height 10.4 Low 8.38 Height -0.8 Sunrise 5.21	TUESDAY 11	High 2.56 Height 10.8 Low 9.12 Low Height -0.4 Sunset 5.58	High 9.09 Height 9.5 Low 2.55 Low Height 0.4 Sunrise 5.38	TUESDAY 18	High 9.25 Height 9.5 Low 3.11 Low Height 0.7 Sunset 5.47
High 3.29 Height 9.7 Low 9.33 Height 0.0 Sunrise 5.22	WEDNESDAY 12	High 3.53 Height 10.1 Low 10.11 Low Height -0.2 Sunset 5.58	High 9.51 Height 9.1 Low 3.38 Low Height 0.3 Sunrise 5.39	WEDNESDAY 19	High 10.07 Height 9.7 Low 3.52 Low Height 0.8 Sunset 5.45
High 4.25 Height 9.1 Low 10.30 Height 0.6 Sunrise 5.33	THURSDAY 13	High 4.49 Height 9.8 Low 11.12 Low Height -0.3 Sunset 5.58	High 10.29 Height 9.7 Low 4.17 Low Height 0.2 Sunrise 5.30	THURSDAY 20	High 10.45 Height 9.8 Low 4.31 Low Height 0.2 Sunset 5.44
High 5.28 Height 8.7 Low 11.30 Height 1.1 Sunrise 5.34	FRIDAY 14	High 5.54 Height 9.4 Low 11.53 Low Height 0.5 Sunset 5.53	High 11.05 Height 9.8 Low 4.54 Low Height 0.0 Sunrise 5.21	FRIDAY 21	High 11.23 Height 9.8 Low 5.10 Low Height 0.2 Sunset 5.42
High 6.31 Height 8.4 Low 12.13 Height 0.6 Sunrise 5.36	SATURDAY 15	High 6.52 Height 9.3 Low 12.31 Low Height 0.1 Sunset 5.53	High 11.42 Height 9.7 Low 5.31 Low Height -0.3 Sunrise 5.32	SATURDAY 22	High — Height — Low 5.49 Low Height -0.1 Sunrise 5.39

1979 OCTOBER TIDES 1979

Morning	BOSTON	Afternoon	Morning	BOSTON	Afternoon
High 11.56 Height 5.42 Low 1.7 Low Height -0.6 Sunrise 5.47	SUNDAY 7	High — Height — Low 6.12 Low Height -2.1 Sunset 5.18	High 5.56 Height 8.3 Low 11.59 Low Height 1.5 Sunrise 5.54	SUNDAY 14	High 6.15 Height 8.9 Low — Low Height 5.06 Sunset 5.06
High 12.27 Height 11.1 Low 6.32 Height -1.4 Sunrise 5.47	MONDAY 8	High 12.46 Height 11.6 Low 7.01 Low Height -1.8 Sunset 5.16	High 6.55 Height 8.4 Low 12.35 Low Height 0.8 Sunrise 5.55	MONDAY 15	High 7.11 Height 8.9 Low 12.57 Low Height 1.4 Sunset 5.06
High 11.8 Height 10.6 Low 7.21 Height -0.8 Sunrise 5.48	TUESDAY 9	High 13.7 Height 11.2 Low 7.51 Low Height -1.3 Sunset 5.15	High 7.47 Height 8.6 Low 1.29 Low Height 0.8 Sunrise 5.58	TUESDAY 16	High 8.05 Height 9.0 Low 1.52 Low Height 1.1 Sunset 5.02
High 2.09 Height 10.2 Low 8.10 Height -0.2 Sunrise 5.49	WEDNESDAY 10	High 2.28 Height 10.6 Low 8.46 Low Height -0.7 Sunset 5.14	High 8.34 Height 8.9 Low 2.18 Low Height 0.7 Sunrise 5.57	WEDNESDAY 17	High 8.53 Height 9.1 Low 2.39 Low Height 0.8 Sunset 5.02
High 3.02 Height 9.4 Low 9.03 Height -0.3 Sunrise 5.51	THURSDAY 11	High 3.21 Height 10.0 Low 9.41 Low Height -0.3 Sunset 5.13	High 9.16 Height 9.2 Low 3.01 Low Height 0.5 Sunrise 5.58	THURSDAY 18	High 9.33 Height 9.3 Low 3.24 Low Height 0.0 Sunset 4.59
High 3.58 Height 8.9 Low 10.00 Height 0.9 Sunrise 5.52	FRIDAY 12	High 4.18 Height 10.38 Low 10.38 Low Height 0.2 Sunset 5.11	High 9.54 Height 9.5 Low 3.41 Low Height 0.2 Sunrise 5.52	FRIDAY 19	High 10.13 Height 9.5 Low 4.04 Low Height 0.0 Sunset 4.53
High 4.57 Height 8.5 Low 10.57 Height 0.7 Sunrise 5.53	SATURDAY 13	High 5.15 Height 11.37 Low 11.37 Low Height 0.1 Sunset 5.08	High 10.31 Height 9.8 Low 4.21 Low Height 0.2 Sunrise 5.51	SATURDAY 20	High 10.54 Height 9.4 Low 4.55 Low Height -0.2 Sunset 4.55

1979 SEPT. - OCT. TIDES 1979

Morning	BOSTON	Afternoon	Morning	BOSTON	Afternoon
High 12.01 Height 9.7 Low 6.08 Low Height -0.0 Sunrise 5.32	SUNDAY 23	High 12.18 Height 9.8 Low 6.28 Low Height -0.2 Sunset 5.40	High 5.33 Height 8.8 Low 11.39 Low Height 0.0 Sunrise 5.40	SUNDAY 30	High 5.56 Height 9.8 Low — Low Height 5.36 Sunset 5.36
High 12.39 Height 9.8 Low 6.46 Height 0.1 Sunrise 5.34	MONDAY 24	High 12.55 Height 9.8 Low 7.09 Low Height -0.5 Sunset 5.37	High 6.33 Height 10.1 Low 12.21 Low Height 0.5 Sunrise 5.42	MONDAY 1	High 6.56 Height 10.1 Low 12.44 Low Height 0.5 Sunset 5.24
High 1.19 Height 9.4 Low 7.23 Height 5.3	TUESDAY 25	High 1.35 Height 9.1 Low 7.51 Low Height -0.1 Sunset 5.36	High 7.33 Height 9.8 Low 1.21 Low Height -0.4 Sunrise 5.42	TUESDAY 2	High 7.57 Height 10.5 Low 1.44 Low Height -0.1 Sunset 5.24
High 2.01 Height 8.4 Low 8.06 Height 0.5 Sunrise 5.36	WEDNESDAY 26	High 2.18 Height 9.7 Low 8.36 Height 0.1 Sunset 5.34	High 8.31 Height 10.2 Low 2.18 Low Height -0.7 Sunrise 5.42	WEDNESDAY 3	High 8.55 Height 10.9 Low 2.43 Low Height -0.7 Sunset 5.23
High 2.46 Height 9.0 Low 8.52 Height 0.8 Sunrise 5.37	THURSDAY 27	High 3.05 Height 9.6 Low 9.26 Height 0.2 Sunset 5.33	High 9.25 Height 10.2 Low 3.12 Low Height -1.3 Sunrise 5.44	THURSDAY 4	High 9.51 Height 11.3 Low 3.38 Low Height -1.4 Sunset 5.20
High 3.37 Height 8.8 Low 9.42 Height 0.9 Sunrise 5.38	FRIDAY 28	High 3.57 Height 9.6 Low 10.21 Low Height 0.3 Sunset 5.30	High 10.17 Height 11.4 Low 4.04 Low Height -1.7 Sunrise 5.45	FRIDAY 5	High 10.44 Height 11.4 Low 4.29 Low Height -1.8 Sunset 5.20
High 4.33 Height 8.7 Low 10.39 Height 1.0	SATURDAY 29	High 4.56 Height 9.0 Low 11.20 Low Height 0.2 Sunset 5.38	High 11.08 Height 11.7 Low 4.54 Low Height -1.8 Sunrise 5.46	SATURDAY 6	High 11.35 Height 11.4 Low 5.21 Low Height -2.1 Sunset 5.10

1979 OCT. - NOV. TIDES 1979

Morning	BOSTON	Afternoon	Morning	BOSTON	Afternoon
High 11.10 Height 10.0 Low 6.08 Low Height -0.0 Sunrise 6.02	SUNDAY 21	High 11.33 Height 9.8 Low 6.22 Low Height -0.2 Sunset 6.11	High 4.13 Height 8.9 Low 10.19 Low Height 0.8 Sunrise 6.11	SUNDAY 28	High 4.31 Height 9.8 Low 10.56 Low Height -0.1 Sunset 4.64
High 11.46 Height 10.1 Low 6.37 Height 0.0 Sunrise 6.03	MONDAY 22	High 11.46 Height 10.1 Low 6.03 Low Height -0.8 Sunset 6.12	High 5.12 Height 9.1 Low 11.22 Low Height 0.7 Sunrise 6.12	MONDAY 29	High 5.35 Height 9.8 Low 11.59 Low Height -0.8 Sunset 4.53
High 12.13 Height 9.5 Low 6.16 Height 0.1 Sunrise 6.05	TUESDAY 23	High 12.26 Height 9.2 Low 6.44 Low Height -0.8 Sunset 6.13	High 6.14 Height 9.4 Low 12.26 Low Height -0.5 Sunrise 6.13	TUESDAY 30	High 6.38 Height 9.9 Low 12.26 Low Height -0.9 Sunset 4.43
High 12.53 Height 9.4 Low 6.57 Height 0.6 Sunrise 6.06	WEDNESDAY 24	High 1.07 Height 10.2 Low 7.26 Height -0.8 Sunset 6.14	High 7.13 Height 9.9 Low 12.58 Low Height 0.4 Sunrise 6.14	WEDNESDAY 31	High 7.39 Height 10.2 Low 1.27 Low Height -0.2 Sunset 4.41
High 1.38 Height 9.3 Low 7.40 Height 0.4 Sunrise 6.07	THURSDAY 25	High 1.50 Height 10.1 Low 8.12 Height -0.4 Sunset 6.10	High 8.10 Height 10.5 Low 1.55 Low Height -0.8 Sunrise 6.10	THURSDAY 1	High 8.37 Height 10.5 Low 2.26 Low Height -0.8 Sunset 4.39
High 2.23 Height 9.1 Low 8.27 Height 0.6 Sunrise 6.08	FRIDAY 26	High 2.39 Height 10.0 Low 9.03 Height -0.3 Sunset 6.17	High 9.06 Height 11.0 Low 2.50 Low Height -1.1 Sunrise 6.17	FRIDAY 2	High 9.33 Height 10.7 Low 3.22 Low Height -1.4 Sunset 4.38
High 3.17 Height 9.0 Low 9.21 Height 0.7 Sunrise 6.10	SATURDAY 27	High 3.34 Height 9.8 Low 9.58 Height -0.2 Sunset 6.21	High 9.56 Height 11.4 Low 3.43 Low Height -1.3 Sunrise 6.21	SATURDAY 3	High 10.26 Height 10.8 Low 4.13 Low Height -1.8 Sunset 4.34

Tidal differences from Boston High Tide

- Newburyport 31 minutes later
- Scituate 5 minutes earlier
- Plymouth 5 minutes later
- Chatham (outside) 30 minutes later
- (inside) (1 hr) 54 minutes later
- New Bedford (3 hrs) 15 minutes earlier

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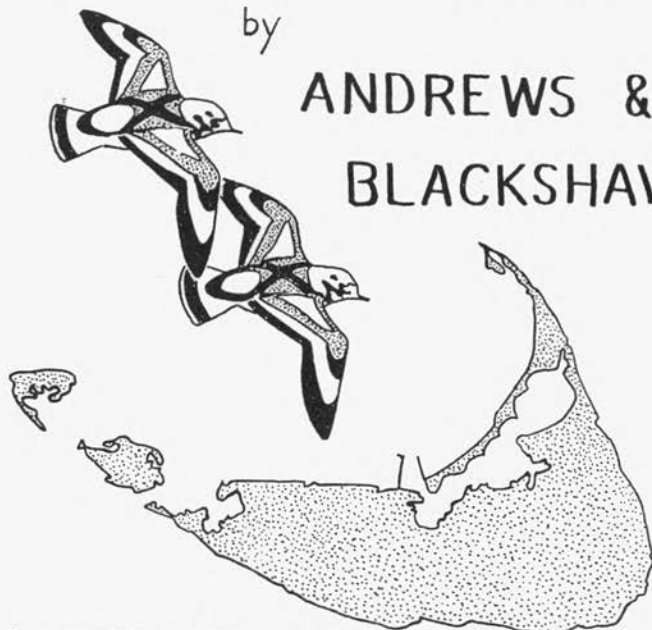
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