

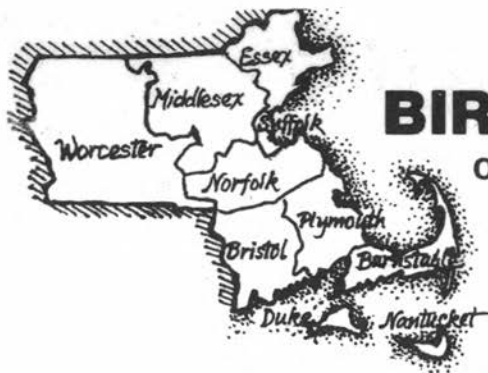
BIRD OBSERVER

OF EASTERN MASSACHUSETTS



AUGUST, 1981

VOL. 9 NO. 4



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Recently Paul Roberts resigned as Editor of BIRD OBSERVER, a position he held for three years. The staff wishes to express its appreciation for the extremely fine job he did; the magazine has benefitted greatly from his expertise and energy. Paul will continue his involvement with BOEM by remaining as an active member of the Editorial Board.

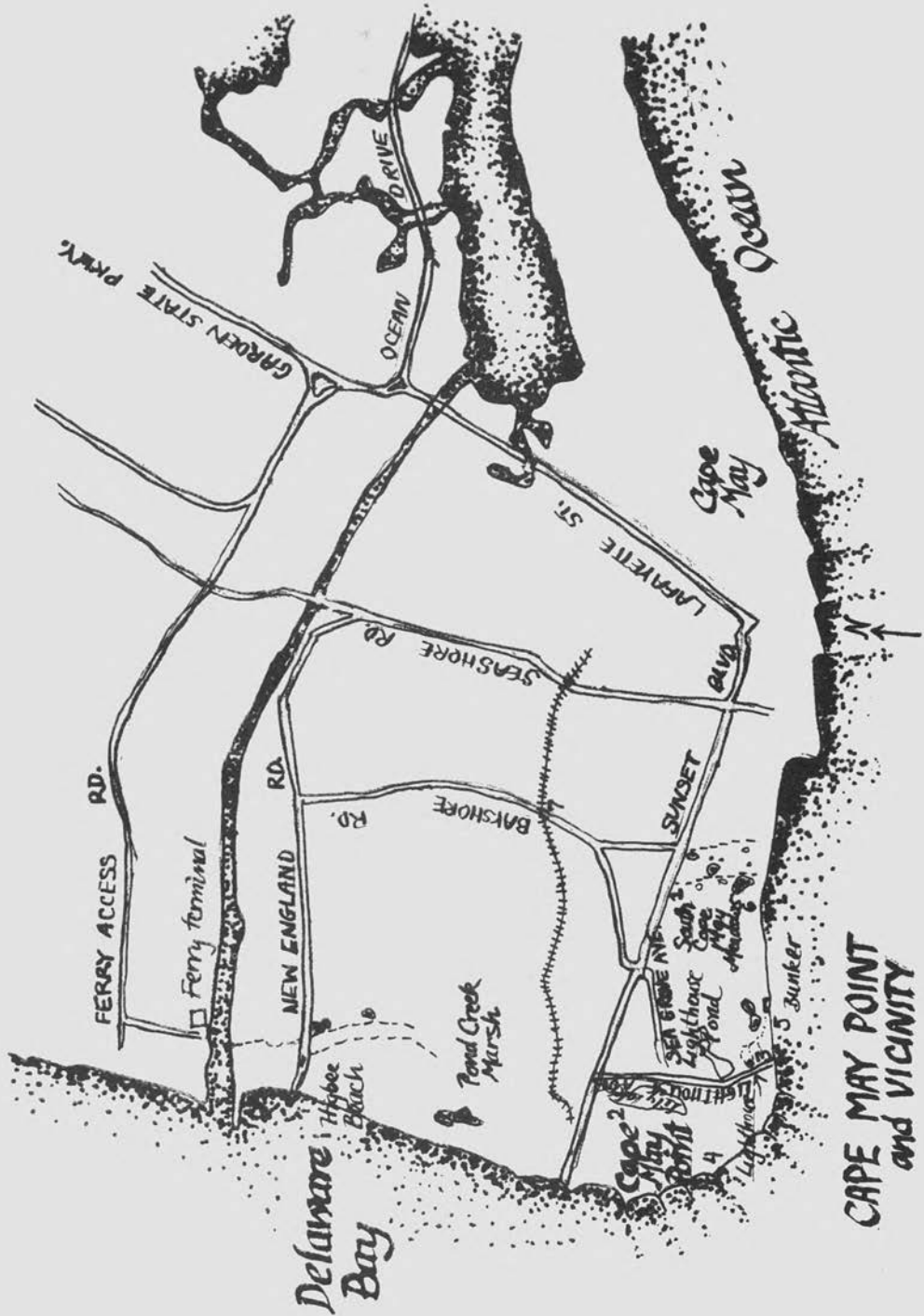


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CAPE MAY POINT
and VICINITY

BIRDING IN CAPE MAY

by Peter Dunne, Cape May Bird Observatory

There are few places in North America that have been birded longer or have more birding advocates than Cape May, New Jersey. There are fewer still that can offer better birding. From warblers to wading birds, falcons to finches, Cape May is unconditionally acclaimed as "the" place to go for autumn birding.

Cape May is unique among top birding spots because much of the hottest birding can be found along the residential avenues of Cape May Point. The number of species annually recorded there is exceeded only by the number of birding organizations that make annual pilgrimages there. Cape May Point is probably the only municipality on earth where a birder can "pish" in public and not draw attention. Another advantage offered by Cape May's close proximity to coastal resort areas is the fine accommodations that are available. For most of the year, lodging is available at attractive off-season rates.

The adjacent natural areas of Cape May Point State Park and Higbee Beach offer excellent birding habitat and, correspondingly, outstanding birding. Although Cape May's fame as an autumn birding hot spot is justly deserved, it tends to overshadow the fact that there is excellent birding here any time of the year. The Cape's peninsular shape, proximity to ocean and bay, and diversity of habitat all blend to make Cape May a birding spot for all seasons.

CAPE MAY IN SPRING

The first harbingers of spring are the Pintail pairing off in February, newly arrived Red-winged Blackbirds calling from foxtail stalks, and Oldsquaw flying purposefully north. Shorebirds arrive a few at a time until they flood the salt marsh like a spring tide in April and May. Black-bellied Plover, Dunlin, and Greater Yellowlegs arrive, followed by dowitcher, Whimbrel, Lesser Yellowlegs, Red Knot, Least, Semipalmated, and White-rumped Sandpipers.

The Green-winged Teal depart, making room for herons and egrets. Osprey appear in mid-March and begin the business of raising a family, while accipiters and falcons, following the barrier islands, are on their way to breeding grounds farther north. The tidal marshes echo with the cries of Laughing Gulls, American Oystercatchers, and Willets. North-bound passerines accelerate through April, peak in early May, and gradually dwindle as the season progresses and spring edges into ...

SUMMER

The doldrums of summer birding generally bypass Cape May.



The Stone Harbor Heronry plays host to almost 2,000 breeding wading birds. Add to this the number of fledged young, and it makes for a busy place indeed. By July, gull and tern colonies erupt with young. Mallards, Black Ducks, and Gadwalls lead their half-grown broods through reeds and down serpentine tidal creeks. Clapper Rails skulk down secret paths, paths as "thin as a rail," followed closely by precocial young.

The avian timetable at Cape May does not follow the dictates of our solar calendar. The dividing line between summer and autumn is at best ephemeral and probably rhetorical. Autumn begins during the sultry days of late June and early July with the southward passage of the first Lesser Yellowlegs and Short-billed Dowitchers, the first wave in the rising tide of autumn migrants. Black Terns, flying east to the coast, then south, appear in mid-summer. Their erratic flight carries them over salt marshes already teeming with migrating dowitchers, Whimbrel, and assorted "peep." Tree Swallows gather in pre-migration flocks numbering in the tens of thousands. By August, shorebirds of all types abound, while Bobolinks, their calls reminiscent of chiming bells, stream overhead on their way to Argentine wintering grounds.

AUTUMN AT THE MIGRATION MAINLINE

Autumn is a time of magic at Cape May; rising excitement keeps pace with the accelerating rush of southbound birds. The Cape

is a natural funnel, catching coastal migrants and directing them to Cape May Point. The good days are nothing short of spectacular; the exceptional days defy belief.

On a northwest wind, the Cape is alive with warblers. Good flights can occur as early as mid-August. Early September is prime time for the greatest variety of shorebird species. Flickers, kingbirds (both Eastern and occasionally Western), and Blue Jays all vie for the limited number of perches. Tanagers and orioles, cloaked in autumn drab, look sadly out of place on their perches of tall marsh reed.

The kaleidoscopic vision of autumn migrations changes with the turning of the season. September's passerines give way to October's hardy winter finches, and these, in turn to November's skeins of geese. Flocks of Brant drift like smoke on the horizon and over the tidal marshes, Short-eared Owls course over salt hay meadows grown brown with winter.

WINTER

There is nothing more coldly stimulating or more stingingly cold than a winter beach. The vacationing crowds have gone, and the sea and beach belong to the Sanderling, the gulls, and the hardy sea ducks. Lines of scoter pass over the horizon, and Oldsquaw ride the swells beyond the surf. Purple Sandpipers, birds of the rocky coast, are attracted to man-made jetties. A falling tide often brings flocks of Brant, drawn to the newly exposed jetties and the sea plants that anchor themselves there. Common and Red-throated Loons dive for fish, often near shore. If the bay is locked in pack ice, the lee sides of jetties can be crowded with Greater Scaup, Redhead, Canvasback, Black Duck, Goldeneye, Bufflehead, and Red-breasted Merganser.

The cedar, oak, and holly woods of Higbee Beach host winter finches, Yellow-rumped and Orange-crowned Warblers, American Robin, Cedar Waxwings, and other hardy winter species. These birds in turn attract wintering Sharp-shinned and Cooper's Hawks. Fox Sparrows scratch out a living in the catbrier (greenbrier) tangle. Woodcock remain all winter unless a prolonged freeze puts their staple diet of earthworms out of the reach of their probing bills. The marsh and tidal flats belong to the Marsh Hawk and Rough-legged Hawk by day and to the Short-eared Owl by night.

Cape May in winter is like Cape May at any time: a place to find the unexpected. Past winters have produced among other things, Dovekie, Thick-billed Murre, Swainson's Hawk, Snowy Owl, White Ibis, Brown Pelican, and even a Wood Stork. If further testimony is needed to support Cape May's wintering wealth, consider the records of the Cape May Christmas Count. The count annually records more species than does any count north of Virginia. To date, the cumulative list stands at an impressive 228 species.

DIRECTIONS TO CAPE MAY POINT

To reach Cape May Point, follow the Garden State Parkway to its southern terminus. Cross the bridge over the Cape May Canal and continue south on Lafayette Street. Turn right on West Perry and continue as straight as possible. West Perry becomes Sunset Boulevard, which continues west to Cape May Point.

Along the way, stop at the South Cape May Meadows (1) (refer to map #1) and scope the shallow pools and grassy areas for wading birds, waterfowl, and shorebirds. The meadows are attractive to Black-bellied Plover, Greater and Lesser Yellowlegs, dowitchers, and White-rumped Sandpiper during spring and fall migrations; Stilt Sandpiper, Golden Plover, Baird's Sandpiper, Buff-breasted Sandpiper, and Hudsonian and Marbled Godwit during fall migration. Loggerhead Shrike regularly occur here during late August and early September and can be seen perched on fence posts and cedar snags. During late September and early October, Peregrine Falcon and Merlin use this large open area to hunt and feed. Late afternoon is the best time to observe these coastal migrating falcons. This is private land, so please conduct your observations from the road only.

A cold front, northwest winds, and any calendar day from mid-August to late November means landbirds at Cape May Point. Given this combination, almost any place on the cape will pass for a good birding spot. Autumn migrants following the Atlantic Coast south are funneled down to Cape May Point where the Delaware Bay causes them temporarily to halt their southward passage in an avian log jam.

Spring migration through Cape May can be equally rewarding. In contrast to the fall migration, most spring movement follows in the wake of a warm front. However, if a warm front and a cold front meet head on over Cape May, watch out! The entire migration can stop dead in its tracks, and Cape May is the only point of land in an awful lot of water. Between 150 and 160 species are recorded annually during the Cape May Bird Observatory's Spring Birding Weekend.

A walk around Lily Lake (2) is a must for migrating passerines. A 30+ warbler day is not unusual during peak migration in early September or early May. Keep your eyes open for rarities. Western Kingbirds are annual autumn occurrences on telephone wires. Any resident's hedge or weedy lot might contain a Clay-colored, Lincoln's, or Lark Sparrow. Lily Lake also boasts an assortment of waterfowl. Wintering divers, puddle ducks, and Whistling Swan will remain as long as they have open water.

Walk or drive to the Cape May Point State Park (3) and follow the nature trails that lead through the marshes, fields, and woodlots of the park. Check the several ponds for wading

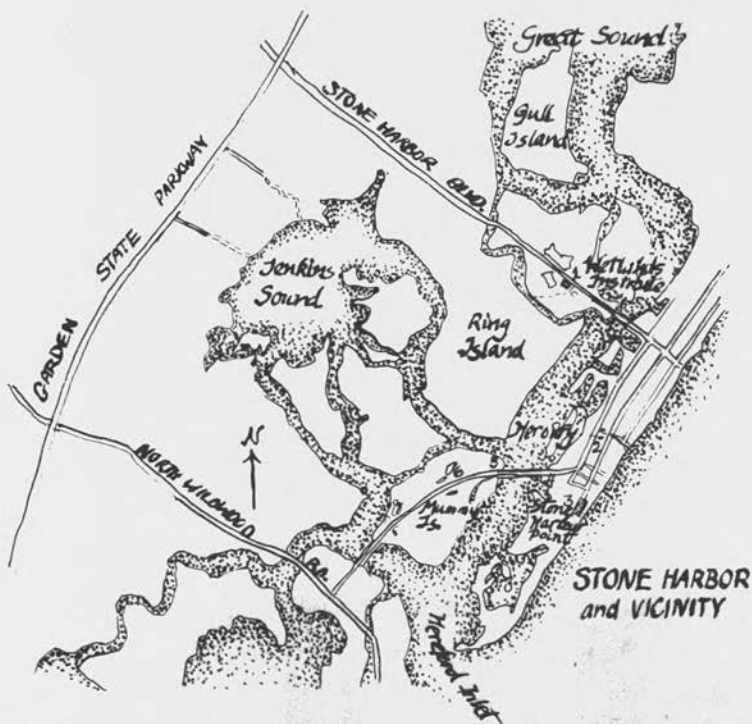
birds and waterfowl. Least Bittern breed in the fresh water areas, and the American Bittern overwinters. Tremendous flocks of Bobolink pass overhead in August and September and, at times, Tree Swallows literally blanket the marsh.

The park is also a particularly good place from which to observe the awesome Cape May hawk flight. An average day's flight during peak season (mid-September to mid-October) is generally in the neighborhood of 500+. The "good" days are spectacular! Sharp-shinned Hawks and American Kestrel stream by in an endless parade. A 50+ Merlin day does not raise any eyebrows because over 100 a day have been seen, and daily counts of between 15 and 20 Peregrine Falcon occur during good flight years. The point even turns up such northeastern rarities as the Mississippi and Swallow-tailed Kite, as well as the Ferruginous Hawk. The Swainson's Hawk is an annual fall occurrence. In 1977 the Cape May Bird Observatory hawk watch recorded 81,597 birds of prey, establishing a new national record for the most hawks ever recorded during an autumn migration.

The beach (4) and the bunker (5) are excellent places to watch for migrating seabirds such as cormorant, scoter, and Gannet. Check the cormorant flocks for an occasional Great Cormorant mixed in with the smaller Double-crested. Common and Red-throated Loons winter in the bay, and large numbers are seen moving in late March and April as wintering populations are augmented by northbound birds. The Parasitic Jaeger can be seen offshore in November, generally in pursuit of some fish-laden gull or Royal Tern, and occasionally, the less common Pomarine Jaeger can be glimpsed. The waters around the several rock jetties and in front of the bunker often provide good looks at hardy winter sea ducks including both Common and King Eiders and Harlequin Duck. Alcids are also seen here occasionally. A walk up the beach from the bunker offers good views of the marshes and a vantage point from which to scope the South Cape May Meadows (6).

A short drive across Sunset Boulevard and up Bayshore Road will intersect the railroad tracks leading to the Magnesite Plant (7), where spring and fall passerines abound. The Prothonotary Warbler breeds in proper habitat on both sides of the tracks, and the thickets along here are a good place to observe the elusive Connecticut Warbler in fall. Scan the shallow pools for wading birds including Pectoral, Solitary, and Spotted Sandpipers, and occasionally, Ruffs.

For Higbee Beech (8), park your car where the pavement ends on New England Road. The trails that lead through the fields and oak, holly, and cedar woods are many and confusing. The fields and hedgerows host nesting Prairie Warbler, Yellow-breasted Chat, Indigo Bunting, and Blue Grosbeak. Ruby-throated Hummingbirds and Scarlet Tanagers also breed here. The woods can at times be alive with migratory songbirds, and Higbee Beach properly rivals Cape May Point State Park



as a spot to observe the Cape May hawk flight. During the winter months, assorted sparrows, winter finch, Cedar Waxwings, Eastern Bluebirds, and other hardy species can be found here, so do not hang up your binoculars prematurely.

TIPS ON BIRDING STONE HARBOR AND VICINITY

The Stone Harbor area offers some of the finest tidal estuary and coastal habitat in the state. The birdlife is representative, plentiful, and accessible. From the Garden State Parkway, turn east at the light at the Stone Harbor/Cape May Courthouse exit. The Stone Harbor Boulevard, or causeway, bisects the tidal wetlands that lie between the barrier island and the mainland. In addition to the many species of birds that are residents here, these wetlands also attract thousands of migrating shorebirds on their way to and from tundra nesting areas. Periodic stops along the causeway often produce large numbers of Dunlin, Black-bellied Plover, and Western Sandpiper during the winter months; Long-billed and Short-billed Dowitchers, Whimbrel, and assorted "peep" during migration. Marbled and Hudsonian Godwits, Golden Plover, and phalaropes are possible here for the patient observer. Prime time for shorebirds is April/May in the spring and mid-July through mid-October in the fall. It is best to concentrate your efforts on the grassy flats and pools during high tide, switching your attention to the tidal creeks and

mud flats at low tide. Look carefully for Osprey along the causeway. There are several active nests in the area.

On the right side of the Stone Harbor causeway is the Wetlands Institute (1) (see map #2), an education and research facility concerned with estuarine ecology. Visitors are welcome during regular visiting hours. South of the Institute is Ring Island, home of the largest Laughing Gull colony in the world. This colony can be observed and heard during the breeding season of May, June, and July from the Wetlands Institute' observation tower. Watch along the causeway for Gull-billed Terns, a species on the increase in this area. Their larger size, striking white upper surface and thick, black bill will distinguish them from the Common and Forster's Terns.

Cross the bridge to the barrier island of Stone Harbor and turn right heading south at the first light onto Third Avenue. The famous Stone Harbor Heronry (2) is located 0.9 miles down the road. The heronry's first residents generally arrive in late March, and some birds linger into December. Summer, however, is the best time to plan a visit. In June the number of breeding birds approaches 2,000 and the population swells considerably as it is augmented by young. The list of rookery residents includes Great, Snowy, and Cattle Egrets, Little Blue, Louisiana, and Green Herons, Black-crowned and Yellow-crowned Night Herons, and Glossy Ibis. Early morning and late evening are the best times to observe the resident birds. Like the changing of the guard at Buckingham Palace, the day-feeding herons return to roost when the night herons leave for their nocturnal forays. In the morning, the guard changes again. If the bird or birds you are specifically hoping to see are not in evidence at the parking area provided by the town of Stone Harbor, then try walking around to the other side of the sanctuary for a different perspective.

From the heronry, turn east on any cross street and then south onto Second Avenue. Follow Second Avenue directly to Stone Harbor Point parking area (3). Least Terns course over the dunes and beach front and Piping Plover are summer breeding birds here also. Check the area beyond the breakers for migrating Royal Terns in August, September, and October; Gannet in October and November. All three scoters are found here in the winter months, and Oldsquaw too are plentiful.

The last jetty south has produced more than its share of eider and Harlequin Ducks in the past few years. Short-eared Owls also winter at Stone Harbor Point. These crepuscular predators can be seen at dusk, and often on dark, overcast days, coursing over the point in search of prey. Purple Sandpipers are jetty regulars from November to May.

Backtrack to Third Avenue (Ocean Drive) and continue south to Nummy Island. Stop just before reaching the bridge and scope

the salt marsh south of the road (4). This is a favorite foraging area for Yellow-crowned Night Herons during May and June in search of their favorite food--fiddler crabs.

Cross the bridge to Nummy Island and pull off to the shoulder of the road (5). From November through April large numbers of diving ducks concentrate in Great Channel. Scope the area north and south of the bridge for Greater Scaup, Common Goldeneye, Bufflehead, Oldsquaw, and Red-breasted Merganser.

Continue on across the island. Both Common and Forster's Terns are found here during the summer and also included in the list of Nummy Island breeding birds are Clapper Rail, American Oystercatcher, Willet, Long-billed Marsh Wren, and Sharp-tailed and Seaside Sparrows. Black Skimmers are a good bet feeding in the channels or skimming over tidal ponds in the early morning and late evening. Brant can often be seen feeding on Spartina roots or resting on marsh ponds during the winter.

Search carefully for Boat-tailed Grackles. They are fairly common here, so do not dismiss any large black bird as "just a Fish Crow," until you take a second look. Like the marshes along the Stone Harbor causeway, the wetlands adjacent to Ocean Drive are stopping-off areas for migrating shorebirds. The tidal pools along the Nummy Island causeway (6 and 7) are excellent places to see Whimbrel and (particularly during spring migration) Red Knot. Nummy Island is also regarded as one of the best spots to find Marbled Godwit.

There are, to be sure, many other fine birding locations in the Cape May area that merit a birder's attention, but two are worth singling out.

DELAWARE BAY SHORE

The birdlife of the bay shore is rich, varied, and representative of a coastal estuarine system. Sandy beaches at the lower portion of Cape May gradually give way to large expanses of tidal marsh, as the contour of the bay turns north and west. Herons and egrets abound here, many of them commuting daily from roosts and rookeries in Delaware. During the winter months, these marshes host wintering Rough-legged Hawks, Marsh Hawks, and Golden and Bald Eagles.

Along the bay, too, are a number of small communities whose existence is steeped in the long history of Cape May County. The access roads to such locations as Del Haven, Pierce's Point, and Reed's Beach can be made by following Route 57 north and turning west onto the appropriate road. If your visit to Cape May coincides with the first full moon in May, a trip to the bay shore will be rewarded by a true marvel of nature.

During May, and particularly during the highest tides of May,

Horseshoe Crabs make their way up to the high tide line to deposit their eggs. The sight of hundres of these ancient, tank-like creatures distributed along the beach would be complete in itself except for the fact that surrounding the Horseshoe Crabs are thousands upon thousands of shorebirds. May 'is also a month of heavy northbound shorebird movement and a myriad of Red Knot, Sanderling, Willet, and assorted "peep" collect along the bay shore, availing themselves of the bounty of Horseshoe Crab eggs. This spectacle of beaches awash in shore birds is one that will not soon be forgotten.

CAPE MAY COUNTY PARK

One mile north of the town of Cape May Court House on Route 9 lies Cape May County Park. Along with the usual indigenous attractions (baseball diamonds, swings, zoo, etc.), the park is also the location of one of the few Red-headed Woodpecker colonies in the state. A walk through the park with an eye to the trunks of large mature trees will likely be rewarded by sighting one of these striking birds. Although the birds are occasionally seen during the winter here, their occurrence is sporadic. May through August is the best time to plan a visit. Also found in the park at this time are Great-crested Flycatcher, Eastern Wood Peewee, Red-belled Woodpecker, Blue-gray Gnatcatcher, Black-and-white Warbler, and Pine Warbler, to name but a few. Red-tailed Hawks nest locally, and in the past, Eastern Bluebirds have nested in abandoned woodpecker holes.

For more information or for a Cape May bird checklist write:

Cape May Bird Observatory
Box 3
Cape May Point, New Jersey 08212

This article was adapted, with the author's permission, from a booklet published by Cape May Bird Observatory.

PETER DUNNE is the Director of the Cape May Bird Observatory and is also the regional reporter for the Coastal Plain area of the newsletter of the Hawk Migration Association of North America. Peter is currently working on a book on the field identification of North American raptors.

RALPH SCOTT is the Director of the Massachusetts Audubon Society's Ipswich River Wildlife Sanctuary in Topsfield. He is a well-known artist whose illustrations have appeared in many journals.

FOR SALE: Land and Game Birds of New England, Henry D. Minot, 1877, illustrated, 456 pages, very good condition, \$75.00. Contact: Richard Spedding, 22 Tanglewood Road, Sterling Junction, MA 01565, (617) 422-8480.

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MASSACHUSETTS RALLIDAE--A SUMMARY

by Wayne R. Petersen, Whitman

Various bird species occur in Massachusetts that, for one reason or another, are poorly known, even by active field ornithologists. The Long-tailed Jaeger, Barn Owl, Long-eared Owl, Whip-poor-will, and Sedge Wren (Short-billed Marsh Wren) illustrate this point. Perhaps no group of birds, however, is as thoroughly cloaked in mystery, or whose precise status is as poorly known, as that exhibited by the rails and their allies. In his recent monumental monograph, Rails of the World, S. Dillon Ripley claims that, "Rails are provocative because after centuries we know little more about them than did the earliest natural history observers." On a more personal level, Ripley states, "... the rail family fascinates me because by our very continuing ignorance of so many facets of the life of rails we can cherish and enjoy the prospect of many more mysteries remaining to be solved."

Regardless of one's particular interest in birdlife, species that are mysterious inevitably hold special appeal. It is with this thought in mind that this paper will review the existing information, in layman's terms, on local rails, while at the same time highlighting those areas where intensive local field work might actually yield a contribution to science's present knowledge of these birds.

Rails are classified in the Order Gruiformes, which, besides rails, includes cranes, songbirds, the Kagu, bustards, and their allies. Following Wetmore's (1960) taxonomy, rails are placed in the Suborder Grues, the Superfamily Ralloidea (Marsh Birds), and the Family Rallidae (Rails, Coots, and Gallinules). In Massachusetts there are nine recorded rail species, with two of these being only casual or very rare visitors. These species include the King Rail (Rallus elegans), Clapper Rail (R. longirostris), Virginia Rail (R. limicola), Sora (Porzana carolina), Yellow Rail (Coturnicops noveboracensis), Black Rail (Laterallus jamaicensis), Purple Gallinule (Porphyryula martinica), Common Gallinule (Gallinula chloropus), and American Coot (Fulica americana). In two of these species, the King Rail and Clapper Rail, there is serious taxonomic consideration given to "lumping" these two species as a single form, the "King Clapper Rail." However, I will treat them as separate species.

Our knowledge of local rails is in large part due to the work of an earlier generation of ornithologists, many of whom were also sportsmen. Through their exhaustive efforts in nest and egg collecting, and in hunting, much was determined about rail biology and local rail status. To quote the renowned Ludlow Griscom (1945), "The expert and energetic field students of the modern generation have learned most of the notes of most of the Rails and have a much better idea of the breeding species, especially the localities for the rarer

ones. In all other respects, however, they do not know these birds anywhere near as well as the older generation, and with most of the horde of present-day observers in this State it is a lucky fluke if they see or hear a Rail nine months out of twelve. It can be categorically stated that rushing around in a car making a large daily and year's list is not conducive to getting to know the Rails well." Only by spending long, often uncomfortable hours in appropriate marshy habitats can the patient observer hope to glean even an inkling of the habits and behavior of rails--something many modern observers are unwilling to do. How many observers, for instance, know the coloration of the Virginia Rail's eggs from first-hand experience?

One can get a fine flavor for the various rail species by careful scrutiny of such classic works as those of Forbush (1912, 1925), Bent (1926), and Griscom (1945, 1955), or by searching the more contemporary ornithological literature for specific accounts of facets of Rallidae biology. However, the most thorough treatment of rails as a group is the previously mentioned monograph by Ripley (1977). Throughout these accounts, the underlying theme is that there is a tremendous amount still to be learned about rails.

Probably no factors are as important in explaining the mystique of rails as their habitat preferences and their behavior within their chosen retreats. Primarily marsh birds, rails can be found in areas as diverse as large cattail marshes, brushy river meadows, extensive salt marshes, moist hay fields, overgrown cranberry bogs, and ponds with a border of vegetation. In fact, rails can be found almost anywhere there is water and cover, and during migration, even water is occasionally abandoned. Couple their habitat preference with skulking behavior and a reluctance to fly (other than during migration) and you have the makings of an ornithologist's nightmare! Additionally, rails have a wide variety of vocalizations, many of which are still not properly understood, either in terms of their significance or even their species specificity. As an example, what was long known as New England's "Ornithological Mystery" concerned certain rail vocalizations heard by numerous prominent ornithologists during the 1800s. William Brewster wrote of these sounds in his journals, and the peculiar notes that he and others often heard became known collectively as those of the "Kicker." (More on the "Kicker" later.) On top of all this, much rail activity, at least vocal activity, is crepuscular, occurring during the hours of dawn and dusk, and not infrequently at night.

Rail behavior exhibits a variety of peculiarities and contradictions. The running ability of rails is well-known, and even when walking, rails seldom show the hesitation and patterned, stop-start movement of shorebirds. Instead, they move rather deliberately, without the frequent pauses of sandpipers and plovers. It has been suggested that the

rails' predilection for densely vegetated habitats decreases their need for periodic stops for visual orientation, thus allowing more fluidity and directness in their travel--a trait shown even when they are in the open. In such open situations, stops in locomotion are principally for feeding, and when alarmed, escape is invariably by running, not by flight. Rails can also swim; however, only the American Coot and the gallinules do so routinely. The long, slender toes of rails are not infrequently employed in clambering about in bushes or similar rank vegetation. In any case, flight is the least frequently used means of escape.

The topic of flight touches upon one of the most curious aspects of rail biology. It is well known that rails are loathe to take flight unless pushed to the limit (as by a rail dog) or when they are suddenly surprised at very close range. Normally, their laterally compressed bodies (except in the coot and gallinules) allow them to move rapidly through dense vegetation, thereby escaping danger without resorting to flight. However, rails can fly perfectly well, and many species, including forms found outside our area, are notable vagrants whose extralimital wanderings have placed them on many an island's list of strays. The island of Bermuda, for example, has records of nine species of rails and gallinules, including the Corn Crake (Crex crex) of Europe.

Why rails should be such far-flung vagrants could actually be related to their sedentary nature when not involved in nocturnal migration. Ripley (1977) feels that possibly this sedentary characteristic fails to provide immature rails, the principal wanderers, with sufficient short-range reconnaissance flights to develop efficient powers of orientation essential to successful long-range migrational navigation. He further suggests that their hesitation in taking flight could be balanced by an equal uncertainty in alighting (!). In any case, all of the Massachusetts rails are migratory to some degree, with some strongly so (e.g., Sora and Yellow Rail).

Rail migration takes place almost exclusively at night and often results in mass arrivals and departures. Such flights are often most obvious in Soras and American Coots. Spring arrival for most species occurs in April, with both weather conditions and proper water levels being critical to the absolute timing. Fall departure is similarly dictated by weather--each succeeding September cold front seeing the passage and departure of local rails. While migration apparently continues through early November (even later for American Coots), the only Rallidae present by December are those that attempt to winter, often unsuccessfully in severe seasons. It is during these migration seasons that rails are seen at such unlikely locations as Mount Auburn Cemetery in Cambridge or as collision casualties at towers like Boston's Prudential Building.

Autumn is also the season for rail hunting. While seldom indulged in locally, a few gourmet specialists still pursue rails during the state's limited fall season. While Soras are the present-day favorite locally, all species were formerly gunned, thus contributing many of the rarer specimens present in museum collections today. In the South, the Clapper Rail was a favorite.

Hunting rails requires great energy, persistence, and ideally, a good rail dog. Best results are often obtained in September when flood tides cover our salt marshes and tidal rivers. At such times migrant rails are forced into the taller *Spartina* grass bordering creeks and ditches, where a good dog can readily point or jump the birds while the gunner awaits the brief, fluttery flight displayed by most species under such circumstances. Once jumped, rails frequently fly several hundred feet and then plop into the grass again. Getting them up a second time often requires considerable effort, so the sportsman must make his first shot count.

The author has spent many years in the field attempting to familiarize himself with rails at various seasons, and as a result, has developed the highest regard for older naturalists who routinely encountered many rails at all seasons through their specialized efforts. Seeing rails is a function of effort, while hearing them involves both time, and more recently, the technology of the tape recorder. The hunter's approach to working salt meadows on flood tides can be successfully applied by the field birder. If a good dog is not available, a 10-foot length of heavy chain equipped with rope handles can be used by two workers willing to rapidly drag the grass tops in appropriate areas (such as goldenrod-bordered ditches). While wet, laborious work, this technique can be very effective when properly executed.

A canoe can also be helpful in studying rails. Quiet paddling or drifting along muddy-edged marshy waterways and ponds, provided they also have heavy bordering vegetation, can sometimes produce close looks at rails and gallinules, so long as silence is maintained. Direct observation from land is also feasible at favored locations such as Parker River Refuge's Stage Island Pool, particularly since observation towers make viewing ideal. In all such situations, however, noise must be minimal, since this, more than anything, seems to disturb rails. The visual presence of a human often appears to be of little concern to a rail caught in the open. Wind, also, is a condition that rails seem to dislike. Their activity in the open, and especially their vocalizing, is severely reduced on windy days and nights.

Breeding

The breeding biology of rails is exceedingly difficult to study, at least until the stage when the young are hatched. Nests for most species are placed in dense marsh vegetation,

often cattails (*Hypha*), or *Spartina* for Clapper Rails, and are sometimes built over the water. Eggs number from 6-15 or more for most species and they are usually creamy or buffy in color, variously speckled with brown. The incubation period differs from species to species, but ranges from 16-20 or more days. Both sexes share in incubation. When hatched, the young are precocial, and in most species tend to resemble miniature, soot-colored barnyard chicks. Broods of half-grown young rails or gallinules are a frequent summer sight at such ideal localities as the Great Meadows Refuge in Concord or at the previously mentioned Parker River Refuge.

Vocalizations

The calls and notes of rails are perhaps among the more familiar, but also complex, aspects of rail biology. The varied vocabulary necessitated by species whose visual intraspecific contact is limited by a dense habitat makes the study of rail vocalizations one of the great bioacoustical challenges remaining in the Northeast. All species have territorial "songs" which are given with great persistence during the late spring and early summer, most often at dawn, dusk, or at night. However, the predictability of these songs is variable, with temperature, amount of light, and wind apparently affecting the intensity of calling. Additionally, rail density in a marsh can affect the frequency of calling--high density producing much "singing" and scarcity producing less of a demand for "advertising." For example, the infrequency with which the King Rail is heard in Massachusetts is no doubt a function of its low density, unlike in the Southeast where it is one of the more characteristic marsh sounds and it is abundant.

Besides the territorial "songs" and calls of the males, there are many other notes and sounds produced by rails under varying circumstances. Some are clearly intraspecific contact calls, while others exhibit alarm or are used about the nest or with fledged young. Even in the fall and winter, rails will occasionally call, but usually only when alarmed or startled. In all cases where calling rails are involved, identification is confounded by both interspecific similarity and by the difficulty in verifying the origin of a particular sound or call. More on the specific vocalizations of rails will follow in the species summaries.

The comments above are aimed at highlighting some of the general characteristics of the Rallidae and are not intended to be all-inclusive. Only by intensive effort can the details of the problems suggested above be unraveled. The balance of this account will describe something of the known status, distribution, and identification of the Rallidae of Massachusetts.

Species Accounts

King Rail: Of the breeding rails in Massachusetts, the King

Rail is one of the least known and one whose local status is the most poorly understood. As with most rails, its preferred breeding haunts include extensive cattail marshes, and less frequently, grassy river meadows. In such habitats, rank vegetation and the infrequency of its calling render it difficult to observe or record.

The migration schedule of the King Rail, which is based largely upon old gunning records, suggests that very likely the King Rail is the earliest of its tribe to arrive in spring. April would appear to be its principal month of arrival. As with many Rallidae, absence of calling birds probably does not in any way reflect an absence of King Rails. In fact, there are sufficient early to mid-April records to suggest that some may arrive several weeks before regular calling commences in May.

In recent years, the fall migration of King Rails has gone largely undetected. The scarcity of serious rail hunters is surely the explanation for this lack of field data. Earlier accounts suggest movement during September-November. An important point to be emphasized here was brought out by Griscom (1955) when he said that, "The King Rail occurs with great regularity on the coastal salt marshes in fall, and all earlier sight records of large rails there are rejected unless the observer was known to be familiar with both species." Of course Griscom was referring to confusion with the Clapper Rail. This admonition is still appropriate for all presently active observers. The author has personally jumped King Rails at Monomoy Point in the fall, as well as having seen several winter King Rails in salt marsh habitat. Wintering in Massachusetts is probably irregular, but a number of records over the years indicate that it is attempted with some frequency in appropriate open marshes, spring holes, or salt meadow ditches.

The reader is again reminded that the exact taxonomic status of the King Rail is open to question. A thorough reading of the works of the species' principal biographer, Brooke Meanley (1962, 1965), indicates its close affinity to the Clapper Rail. In fact, some authorities consider the two species conspecific. With this in mind, field observers are cautioned that "mixed pairs" of large rails may in fact have an even closer genetic linkage than as that of mere "bunk mates."

Field identification of King Rails is not difficult when satisfactory views are obtained in appropriate breeding habitat. The standard field guides properly illustrate the bird as a magnified Virginia Rail with rustier cheeks, bright rusty wing coverts, rich rusty on the breast, and sharply defined flank stripes. The back is generally a warm tan color, usually prominently striped. By comparison, Clapper Rails are grayer, particularly the wing coverts, and the sides of the upper breast are often suffused with gray, as

are the cheeks and face. When seen in flight, the King Rail looks like a gangly, rusty-colored chicken with rusty wing patches on the lead edge of the wing and a long bill and long legs. A comparable look at a Clapper Rail reveals an olive-gray-toned bird with similarly grayish wing patches and a dusker, less striped back pattern. As previously described, caution is advised unless the observer is very familiar with both species. Beware the salt marsh rail!

Since the various vocalizations of the King Rail are often the best clue to its presence in a marsh, a knowledge of the standard repertoire is important. As with many rails, a calling bird is frequently never seen, thus making absolute determination difficult. As in the Virginia Rail, a common call of the King Rail, and one recorded on the popular Roger Tory Peterson record, *A Field Guide to the Bird Songs*, is a harsh, grating, "jupe-jupe-jupe-jupe" or "chack-chack-chack-chack," given with great force and often including 20 or more notes. The end of this call generally lowers in pitch and increases in tempo. At close range, this is a startling sound. At a distance, the deeper tone (basso) is critical for separating it from the corresponding notes of the Virginia Rail.

Other notes of the King Rail include a deep, "ump-ump-ump," all on one key and given more slowly than notes of the Virginia Rail. Apparently, male King Rails have a "kek-kek-kek" note similar to the familiar call of the Clapper Rail. The author has only heard this call once in this state. A final call, allegedly used by the female, can be likened to the phrase "hip-hip-hip-hurraaa," given with downward inflection at the end and with considerable force. This call is occasionally heard in Massachusetts.

With all of these calls, the precise significance and their sexual specificity are uncertain. Readers desiring additional information are again referred to Meanley (1969).

While local records suggest that King Rails can appear anywhere in spring and summer where suitable habitat exists, some of the more recently favored areas are the Lynnfield marshes adjacent to Route 128, fresh water marshes on the Parker River Refuge, Wash Brook on the Wayland-Sudbury line, and at various meadows in southeastern Massachusetts, including Cape Cod.

Clapper Rail: The Clapper Rail, with the preceding species, is the other large rail of the Massachusetts marshes. Similar in basic form, its coloration differences have been previously described under the King Rail account. However, a marked breeding habitat difference exists between the two species--the Clapper Rail occurring exclusively in tidal salt marshes, the King Rail in freshwater marshes. Since both the Clapper Rail and the King Rail are near the extreme northern limits of their ranges, the extent of migration through Massachusetts is reduced considerably. In fact, both species

may actually be far commoner as breeding species than many workers would suppose, as evidenced by the extent of reports in fall and early winter, unless, of course, there is considerable northward dispersal from the south after nesting. Clapper Rails, especially, are apt to show up in tidal areas in fall and winter where their presence is unsuspected during the summer months. The origin of these birds is somewhat mysterious.

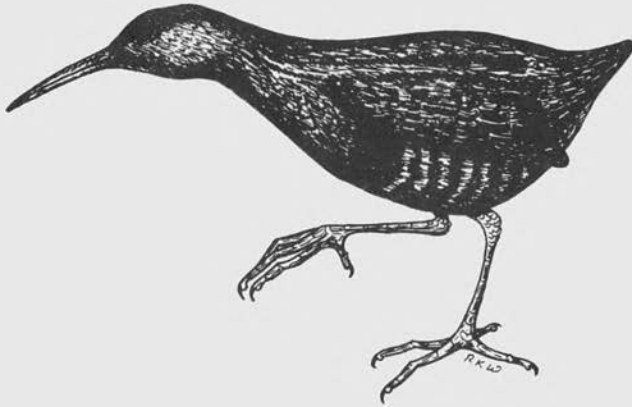
Presumptive breeding of the Clapper Rail occurs at Parker River Refuge, South Dartmouth, and at several extensive salt marshes on Cape Cod. Wintering is routinely attempted; however, mortality appears to be considerable by late winter. The migration patterns of the Clapper Rail are clouded by a lack of observations in the spring since the birds are little in evidence until calling commences in May, almost always at suspected breeding locations.

Vocalizations of the Clapper Rail are seemingly less diverse than in the King Rail; however, unlike that species, calling is frequent in summer and fall, long after King Rails have ceased calling in this region. The most characteristic notes of the Clapper Rail are loud, clattering, "chack-chack-chack" notes, often given in a measured sequence that can both increase and decrease in tempo. In all cases, the calls are often given for extended periods at dawn or dusk, and even at night. On only one occasion has the writer heard the pig-like, "chack-chack-chack" call from a Clapper Rail.

Virginia Rail: The Virginia Rail is the commonest breeding rail in Massachusetts, and with the Sora, is generally the most familiar to many observers. Its identification is adequately treated in the field guides and its nesting requirements are readily met in many wetlands throughout the state. With regard to its breeding requirements, the Virginia Rail seems to be more tolerant of brushy vegetation and less demanding of pure cattail stands than the Sora, and is consequently more common as a breeder in Massachusetts.

The arrival of migrants from the south takes place in April and breeding is generally underway by late May. Broods of young are occasionally encountered throughout the summer. Fall departure is in September and October; however, the species regularly attempts to winter where conditions permit along the coast or in spring-fed inland marshes.

The vocalizations of the Virginia Rail are varied and its notes can be heard more or less throughout the year, but with greatest frequency in spring and summer. The "song" of the male is the familiar, metallic, "kid-ik kid-ik kid-ik," often given for minutes at a time in a hesitating fashion. At a distance, the 2-syllable effect is often lost, thus rendering the sound a quality reminiscent of the Clapper Rail when similarly heard at some distance. This call is often given at night, and it is seldom heard after the first week or two in June.



Equally common is a pig-like grunting sound that resembles a bouncing ball coming to a stop--"wak-wak-wak-wak," descending at the end and dropping in pitch. Marked differences in pitch between individuals giving this call, along with the frequency with which birds respond to tape recordings of this sound, suggest that it may be used by both sexes. This call seems to be the only call regularly employed by wintering birds.

A very mysterious call used only irregularly by Virginia Rails is the call historically recorded as that of the "Kicker." This sound has enjoyed a history shrouded in uncertainty. From Brewster (1901) and Ames (1920) to the more recent work of Reynard and Harty (1966-67), Bollinger and Bowes (1973), and J. A. Hagar (pers. comm.), the "Kicker" call has been variously ascribed to the Black Rail, Yellow Rail, and Virginia Rail. Even the earlier editions of Peterson's bird song records include the "Kicker" call as that of the Yellow Rail (an error since corrected). In any case, the call in question can be likened to the phrase, "kic-kic-kic, ki-queeah" or "tic-tic-McGreer." The reasons for its sporadic use and its biological significance are questionable to this day. The author has heard this call from a half-dozen localities in Massachusetts over a twenty-year period, always in late May or June, and during both day and night. Despite this, in many ways, the "Kicker" call is still a puzzle, regardless of its now proven identity as a vocalization of the Virginia Rail.

Other sounds characteristic of Virginia Rails are probably most often associated with the nesting cycle or occur between adults and young. A frequently heard note in mid-summer consists of a sharp "kik" or "kip," which very likely is used in maintaining contact with fledged young. This note is very

similar to a note of the Sora. Also used around the young is a low, guttural roll which sounds like "ka ka ka ka." The author has only once heard this peculiar note while an adult bird attempted to lead a brood of downy young to safety.

It should be obvious from these notes on vocalizations that much still remains to be learned about rail calls, even for a common species like the Virginia Rail. The key to unlocking some of this information lies in the hands of someone willing to spend lots of time afield with a good recording apparatus.

Sora: The Sora is a local breeder and a common to occasionally abundant migrant throughout much of eastern Massachusetts. It is somewhat less widespread in Massachusetts overall than the Virginia Rail. The nesting of this species is closely associated with extensive cattail marshes, ideally interspersed with areas of open standing water. It is generally less tolerant of vegetation other than cattails in its habitat than is the Virginia Rail, thereby being more restricted in its distribution due to less ideal habitat availability. Favored breeding marshes include the famous Lynnfield meadows and the Great Meadows and Parker River Refuges. Breeding elsewhere is scattered and probably sporadic. This may be partly due to its more gregarious and colonial nature than is exhibited by the Virginia Rail. Griscom (1945) has rightfully noted that the Sora "... calls regularly on migration, and a fine May chorus decreases to zero towards the end of the month." In suitable breeding habitat further north and where the species is common, it continues to be very vocal throughout the summer, and even in fall migration, regularly and routinely uses a variety of notes, quite unlike the other migrant rails. Thus, many local observers persist in the belief that the Sora is fully as common a summer resident as the Virginia Rail, when in fact it is not. Indeed, it may be decreasing with the continued destruction of prime habitat.

The spring migration calendar of the Sora roughly corresponds to that of the Virginia Rail, although it possibly arrives a bit later. In fall, however, it occurs in great abundance in many marshes, primarily in September, and is seemingly more sensitive to cold than its cousin. Most birds are gone by early October and the species is very unusual in winter. During its migrational peak in mid-September it can often occur in startling numbers along grassy water courses where a favored food, Wild Rice (*Zizania aquatica*), occurs in quantity. In such circumstances, Soras can often be seen clambering up the stalks for the seeds, or be heard by the dozen with every clap of the hands or slap of a canoe paddle on the water. Even a casual walk along a tidal waterway at high water will often jump them at this season as they are driven out of the salt meadows by the flooding tide. In general, the Sora seems more inclined to flush than the Virginia Rail when under similar circumstances.

Soras have several distinctive calls. The "song" of the male, a call given on migration as well as on the breeding grounds, is a sharp, upward inflected, "ker-weee." This call is often given at night for long periods of time. A note of similar quality and sounding like the phrase, "wheet," is said to be given in flight over a breeding marsh (J. A. Hagar, pers. comm.). Probably the species' most familiar note is the descending "whinney," often given when a loud noise is produced adjacent to a marsh containing Soras. This sound is probably given by both sexes, despite some published accounts to the contrary. During the fall migration when Soras often throng certain marshes, they typically utter a sharp, "keee" note when they are disturbed, often in a virtual chorus from all corners of the marsh. Like the Virginia Rail, too, they have various sharp notes that are probably used primarily in the presence of their nests or young.

Identification of Soras is easy. They lack the long bill of the other common Massachusetts rails, thus giving them a chicken-like appearance. Adults have a black throat and a gray face. Young lack the black throat and are less gray, being more tan color overall. The immatures are actually somewhat lighter in color than the adults, unlike the Virginia Rail which has a very dusky immature plumage.

Yellow Rail: Perhaps no species of bird regularly inhabiting Massachusetts is as poorly known locally as the Yellow Rail. The literature is filled with descriptions of its elusiveness and its general scarcity, as well as a number of published misconceptions as to the nature of its calls and "songs." At the outset, it should be stated that the Yellow Rail has never been satisfactorily proved to breed in Massachusetts, in spite of comments by Dr. Herbert Maynard as related in Griscom (1949). It should also be made clear that the calling of the Yellow Rail on migration may indeed be a rare event and that virtually all records of such activity in Massachusetts should be viewed as bogus. What then are the extensive accounts of calling Yellow Rails in the earlier literature?

As was explained under the account of the Virginia Rail, many of the early records of Yellow Rails were attributable to the "Kicker" call of the Virginia Rail. The Yellow Rail's principal vocalization (J. A. Hagar, pers. comm.) is the well-described (Peterson, 1980) "tic tic tic-tic-tic, tic tic tic-tic-tic," often likened to the clicking of two stones together in a rhythmic sequence. The sequence can vary but the quality remains the same. As pointed out previously, the older Peterson recordings of bird songs erroneously ascribed the "Kicker" call of the Virginia Rail to the Yellow Rail, hence much additional confusion.

The actual status of the Yellow Rail is that of an overlooked spring and fall migrant and a very rare winter straggler. The spring migration goes virtually unrecorded, and even in the early days of extensive bird collecting, the species was sel-

dom encountered in spring. Thus, it would appear that its principal migration through the state is in September through November with a peak coming in October and early November, well after the Soras have largely departed. Records suggest that it is best found on salt marshes, often where they turn brackish, and in old cranberry bogs, moist meadows, and even inland grain fields. The techniques described earlier in this paper on jumping rails with dogs or chains particularly apply to this tiny species. Apart from hearing Yellow Rails in boreal Canada, the author has only once definitely encountered this species in Massachusetts in over twenty years of active field work!

Recognition of the Yellow Rail is simple enough--the trick is to locate one. It can only be confused with the immature plumage of the Sora, but its smaller size, white bars on the back, and tiny bill should serve to distinguish it. In flight, a white patch of the trailing edge of the wing is diagnostic if it can be seen.

Black Rail: The Black Rail is a casual straggler to Massachusetts. There are several old specimen records with "... few now extant." (Griscom, 1955). There are also several recent reports, but only one recent specimen--a migrational overshoot at Nantucket on 31 March 1978 (Bird Observer of Eastern Massachusetts, 1978). Other modern records are of birds either imperfectly seen or heard by observers not fully aware of the difficulties involved in separating certain Rallidae vocalizations from other marsh sounds. Thus, the current status of the Black Rail in Massachusetts continues to be a puzzle. Its positive calling and collection in nearby Rhode Island and Connecticut suggest that the species could occasionally occur locally in appropriate salt meadows in late May and early June. At such times, the distinctive "kee-kee doo" call of the male in the middle of the night would probably be the best indication of its presence. Key locations to sample would seem to be the marshes in the South Dartmouth-Westport regions, the Barnstable marshes, and the marshes in the Rowley-Newburyport area.

The diminutive size, coupled with white back freckles, make this species easy to identify. Beware the downy young of the commoner species!

Purple Gallinule: Of the two gallinule species occurring in Massachusetts, the Purple is the far rarer. Principally a vagrant from the south in early spring and late summer, it also has shown up in mid-winter a surprising number of times. It has appeared in both inland and coastal areas and in many cases it does not seem confined to typical marsh habitats. There are enough records to make enumeration unnecessary.

Identification of adult Purple Gallinules is easy. Their violet-purple underparts and bronzy-green backs make them very striking. The absence of a red frontal bill shield and lack

of a white flank stripe when swimming separate them from the Common Gallinule. Young birds are a buffy brown below, darker above, and lacking the flank stripe typical of the grayer young Common Gallinule.

Common Gallinule: Gallinules and American Coots share the same basic environments. Both seem to require open water bordered by tall, emergent vegetation, often with islands of such plant growth as well. The Common Gallinule is a locally common breeding species in Massachusetts with the Great Meadow Refuge and the Parker River Refuge being premiere localities. It arrives from the south in mid-April and remains until mid-fall. Wintering is very unusual and is generally unsuccessful.

Since Common Gallinules are swimmers and often prone to allowing better views than is typical of many rails, their vocalizations can often be more clearly ascertained than those of their elusive cousins. Peterson (1980) aptly describes their note as, "A croaking kr-r-ruk, repeated; a froglike kup; also kek, kek, kek and loud, complaining hen-like notes." Certain of their notes are similar to those of the American Coot, but usually are more nasal and less harsh. Coots, also, do much of their calling in the open where they can be readily observed.

Identification is adequately described under the Purple Gallinule.

American Coot: Perhaps the least rail-like of the Rallidae occurring in Massachusetts, the American Coot is nonetheless a rail in the true sense. Like a gray football with a head, coots are to be seen floating and diving on almost any suitable pond in eastern Massachusetts during fall and early winter. In spring, their migration is less obvious, and as breeders, they are uncommon and very local. Parker River Refuge is the only marsh in the state presently sustaining a substantial breeding population.

Coot numbers seem to fluctuate from year to year during migration, with some years seeing great flights and other seasons few indeed. Local feed conditions may in part be responsible. In any case, the species is an interesting one and one that many folks seem to take for granted. It is an important game species in the South.

Coot vocalizations are generally similar to those of the gallinule, and since we have a limited breeding population, the species is less often heard than the Common Gallinule. It tends to be silent on migration.

With these species accounts, an attempt has been made to pull together some of the facts that will be most useful to the birder desiring some information on the local Rallidae, but

with the full realization that much still remains to be learned and discovered about this most fascinating and mysterious group of birds.

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AUTUMN BROADWING FLIGHTS AT WACHUSETT MOUNTAIN

by Leif J. Robinson, Wellesley

For the last three years, Paul Roberts has organized consecutive-day coverage to monitor the autumn raptor migration at Wachusett Mountain, Princeton, Massachusetts. Much data concerning hawk movement there has been gathered, and now some conclusions may be drawn about the site and its most common September migrant, the Broadwing Hawk.

What follows results solely from Roberts' Eastern Massachusetts Hawk Watch reports for fall 1978, 1979, and 1980. Though some other relatively common raptor migrants might also be similarly studied, such as Turkey Vulture, Sharpshinned Hawk, Red-tailed Hawk, Northern Harrier, Osprey, and American Kestrel, the accumulation of a couple years' more data would greatly improve any analysis.

The Site. I first examined the 16 dates when an average of more than 50 Broadwings per hour were observed. Three quarters of these instances occurred under winds from the west-northwest through the north-northwest. Three major flights, including the largest ever observed, took place with northeasterly winds. The second strongest migration was under an apparently anomalous east-southeasterly flow.

On days between September 4th and 23rd, when 20 to 50 Broadwings per hour were seen, essentially the same wind pattern prevailed. But on days when fewer than 20 birds per hour appeared, a west to southwesterly flow predominated: on 11 of 16 occasions.

Thus, it appears that Wachusett Mountain experiences major Broadwing migration under meteorological conditions similar to other inland New England sites. Exceptional flights under northeasterly winds, however, may be a rather special feature of this central-Massachusetts monadnock.

The Birds. From the three years of data, the passage of Broadwings past the mountain can now be quite accurately predicted.

Evident migration begins: on or before September 2

25% of all Broadwings will have passed: September 8-12

50% of all Broadwings will have passed: September 11-15

75% of all Broadwings will have passed: September 14-18

Migration complete (except for a very few stragglers):
September 24

The tightness of the time spans for each passing fraction

indicates the precision of the Broadwing flight schedule. The spread of four days in each case could be easily due to random timing in the approach of propitious weather systems from year to year. For all three years the maximum flow of birds past the site occurred within the interval September 12-16.

Both of the above sections indicate that Wachusett Mountain is a very predictable and rewarding site for Broadwing migration in autumn. Good flying conditions coupled with northwesterly or northeasterly winds within a very few days of September 14th will, in general, yield the bulk of birds for the year.

Be there!

FALL HAWK WATCH

The Eastern Massachusetts Fall Hawk Watch is looking for volunteer observers. This fall, coordinated hawkwatches will be held throughout New England on the weekends of September 12-13, 19-20, October 3-4, and October 24-25. Observers are needed to hawkwatch on sites throughout eastern Massachusetts for all these dates.

Observers are also needed for the consecutive-day watch on Mt. Wachusett from September 5 through October 12. If you want to improve your ability to identify hawks in the field, there is no better opportunity to do so than by participating in the Wachusett hawkwatch as often as possible.

If you would like to sign up for dates and sites, obtain additional information on available sites, or inquire about hawkwatching or hawk identification, please contact:

Paul M. Roberts
254 Arlington Street
Medford, MA 02155 (617) 483-4263 after 8 p.m.

Please note that you do not have to be an identification expert to take responsibility for a site. And we try to have two or more people at each site, so if you would like to hawkwatch with friends or meet and watch with experienced observers, please let us know.

We need your eyes. We need your help, even if you can observe for only a half-day. Please participate.

BOOK REVIEW

The Audubon Society Encyclopedia of North American Birds, John K. Terres. 1980. Alfred A. Knopf, New York, 1109 pages, \$65.

This extremely handsome and impressive volume which appeared at Christmastime undoubtedly captured the attention of most birders as a desirable addition to a personal library, but many may have hesitated in view of the considerable cost. Although this encyclopedia was available at substantial discount, i.e., \$40, in pre-publication sales, birders will be happy to know it is now offered at that price by the Birding Book Society or as a bonus book for only \$19.50. The Book of the Month Club also recently listed this volume as a bonus for \$15, plus shipping. Presumably a number of people will again be considering purchase.

John Terres, former editor of Audubon magazine, began work on the book in 1959 and its publication represents the culmination of twenty years of effort. The entire text has been written by him, a formidable undertaking and prodigious accomplishment for one writer, however skilled and experienced; but the author's list of acknowledgments is a veritable "Who's Who" in ornithology and therefore the single authorship while providing uniformity of style and presentation is not necessarily a limitation.

In what ways and for whom is the book useful or worthwhile? The value of any encyclopedia is determined in part by the scope of subject matter. Here, Mr. Terres has benefited from his twelve years of editorship of Audubon and has sensed what material will appeal to the lay reader as well as to professional naturalists and ornithologists and, especially, to all birders, casual and devoted alike. Topics run the gamut. There is thorough and very readable coverage of all the material which would be included in a good general text on ornithology. Of necessity, this subject matter may be distributed under a number of entries, e.g., evolution of birds is described in five or six places; but all are carefully cross-referenced so that the persistent reader can gain a satisfactory survey of the subject.

It seems to the reviewer that the major portion of the book is devoted to description, written and pictorial, and to identification and classification of North American bird families and species. Hence, it cannot fail to satisfy any birder fortunate enough to own it. There is as well much general information of popular interest, relevant historical and biographical matter, bird lore, meanings of bird names, a list of state birds, etc., plus definitions of practically every term used in ornithology. Coverage is almost too complete: certainly no specialized reference book need include a definition of "millimeter" or "drumstick." Also, it seems excessive to devote a long paragraph to Lucy Hunter Baird

whose sole claim to ornithological fame is that Lucy's Warbler was named in her honor when she was thirteen.

Bibliophiles who cannot resist a beautiful book will find the full price well justified by the bounty of illustrations, 875 excellent color photographs of nearly all North American nesting birds and 800 superb black and white drawings, among them a number by Margaret LaFarge who created the cover of Bird Observer. Nature photographers will enjoy browsing. A further major virtue of the book for the serious student of birds lies in the many in-text references to the very comprehensive bibliography which cites over 4000 sources, a superb guide to further study.

Mr. Terres has presented in clear and graceful prose a great many facts, well updated by the latest research, in a single volume so thoroughly cross-indexed that almost any approach will enable one to locate the particular piece of information sought.

In view of the immensity of the accomplishment, any criticism pales to insignificance, and most of the flaws seem to be mechanical ones. For example, there is a good amount of blank paper throughout the book, space which may have been set aside for illustrations that did not make it into print (page 268 is an extreme example). This reviewer found one instance where the information sought got lost in cross-references; i.e., looking up "leucism," the exact meaning of which term has always seemed elusive, led in a circle to "color of feathers, abnormal colors" to "albinism" to a literature reference without any definition. This was an unhappy test of the book for in reading through two half-columns of text on albinism, the reader met this tantalizing unfinished paragraph: "Records of albinism...in some N. American families of birds in descending order of their frequency were:" (p. 12). Failure to number pages xiv-xxiv may create momentary confusion for those who follow the table of contents and are referred to those pages. Also, the arrangement of the photographic credits will prove frustrating to any reader interested in knowing who the artist is. One must read through all page numbers listed after each name in a long list of credits, a somewhat discouraging process.

This book is not an essential addition to a well-stocked ornithological library but if yours consists of only field guides, this book would be an invaluable adjunct. This is a fine book to own and one that will provide much pleasure in browsing, substantial enlightenment upon careful perusal of the well-written text, a ready factual reference book, and possibly one of the most beautiful collections of bird photographs yet put together in a single volume.

Dorothy R. Arvidson

Field Records:

May 1981



by George W. Gove, Robert H. Stymeist, Lee E. Taylor

The merry month of May 1981 was warm, sunny and dry. The temperature averaged 60.4°, 1.8° above normal and 1.0° warmer than May 1980. The maximum for the month was 91° on the 25th, equaling the record for that day set in 1932. The low was 40° on the 7th. This year's first day of 80° or over did not come until the 24th, 18 days later than average.

Rain totaled only 1.17 inches, 2.30 inches less than normal. This was the driest May since 1965 and the thirteenth driest in 111 years. The weather was not the best for migrants; most observers reported only 2 or 3 wave days. Winds were from the southwest on the 14th, 25th, 27th, 28th, and 30th; from the southeast on the 1st, 8th through 11th, and on the 21st; and from the south on the 12th, 15th, 20th, and 29th.

LOONS THROUGH HERONS

Common Loons were observed migrating throughout the month with at least 150 reported as late as the 24th of the month; interesting however was the small number of Red-throated Loons migrating compared with previous spring migrations. The absence of reports of Pied-billed Grebe was startling. Only one record from Wayland was reported with none noted from Plum Island or Great Meadows where they are usually found breeding. Is this species a candidate for Blue-listing as a breeder?

A Cory's Shearwater seen off Muskeget Island on May 31 was unusually early for this species while Greater and Sooty shearwaters were observed in usual numbers throughout the month. A Leach's Storm-Petrel was picked up dead in Chatham, and two others were noted at Stellwagen Bank and Nantucket Sound. Gannets were migrating past Muskeget in great numbers; over 3250 were observed with 1500+ on May 10. Great Cormorants were found lingering in N. Scituate, Plymouth, and Muskeget.

Reports of low numbers of most of our heron species, especially Green Heron and Cattle Egret, are cause for concern whereas reports of the night herons seem encouraging. A Great Egret carrying a stick to Spectacle Island in Boston Harbor was suspected of nesting there. This would be the first such nesting in Boston Harbor; unfortunately word has spread that Spectacle Island may be the next island to be developed in the Boston Harbor Island Park! R.H.S.

<u>SPECIES/DATE</u>	<u>LOCATION</u>	<u>NUMBER</u>	<u>OBSERVERS</u>
Common Loon:			
6-12	Muskeget I.	49 migr. max.15+ 5/6	R.Heil
18-31	Muskeget I.	88 migr. max.88 5/21	R.Heil
9,24	S.Natick, Barnstable	7 migr., 150 migr.	R.Forster, J.Aylward
Red-throated Loon:			
6-12,22-25	Muskeget I., M.V.	6 migr., 4	R.Heil, BBC
27	Lynn	2	D.Arvidson#
Horned Grebe:			
23	P.I.	1	R.Stymeist#
Pied-billed Grebe:			
23	Wayland (Heard's Pond)	1	R.Forster
Northern Fulmar:			
23,24	Stellwagen Bank	1, 1	B.Nikula,K.Anderson
31	off Monomoy	1	BBC(D'Entremont)
Cory's Shearwater: (well described, good details on file)			
31	Muskeget I.	1	R.Heil
Greater Shearwater:			
29,31	Muskeget I., off Monomoy	30+, 19	R.Heil#, BBC(D'Entremont)

<u>SPECIES/DATE</u>	<u>LOCATION</u>	<u>NUMBER</u>	<u>OBSERVERS</u>
<u>Sooty Shearwater:</u>			
19,24	Stellwagen Bank	4, 6	W.Petersen, K.Anderson
21 on	Muskeget I.	max.50+ 5/29	R.Heil
31	off Monomoy	25	BBC (D'Entremont)
<u>Manx Shearwater:</u>			
2,4	Manomet Point	1, 1	fide K.Anderson
<u>Leach's Storm-Petrel:</u>			
10,17	Stellwagen B., Nant.Sound	1, 1	W.Petersen#,R.Heil
30	Chatham(Pleasant Bay)	1 found dead	W.Petersen#
<u>Wilson's Storm-Petrel:</u>			
14,30	off Chatham, off Monomoy	25, 170+	P.Trull, BBC
<u>Gannet:</u>			
6-12,18-31	Muskeget I.	2950+(max.1500+ 5/10), 300+	R.Heil
3,16	Yarmouth, P.I.	120, 6	J.Aylward, BBC
<u>Great Cormorant:</u>			
9,10	N.Scituate, Plymouth	5+, 1 imm.	W.Petersen#
21,25	Muskeget	2 imm., 1 imm.	R.Heil#
<u>Double-crested Cormorant:</u>			
25	E.Middleboro, Nahant	100 migr., 1100+	K.Anderson, R.Stymesit#
<u>Great Blue Heron:</u>			
thr.	Westboro	nesting colony	v.o.
thr.	P.I.	max. 6 5/2	v.o.
<u>Green Heron:</u>			
thr.	Very few reports of this species with no significant numbers.		
<u>Little Blue Heron:</u>			
2,16	Nahant, Manchester	1, 2	W.Foley#, G.Hotz#
17	Marshfield, Ipswich River	1, 1	SSBC, BBC
27	Lincoln (DFWS)	1 ad.	R.Forster
<u>Cattle Egret:</u>			
thr.	Ipswich (Maplecroft)	max. 6	v.o.
14-15,17	Brewster, Topsfield	1, 2	fide S.Reynolds,H.Wiggin#
17,28	Marshfield, Berkley	3, 1	SSBC, J.Murray
<u>Great Egret:</u>			
25	Boston (Spectacle I.)	1 carrying stick	W.Petersen
	This will be the first nesting in Boston Harbor!		
thr.	Very few others reported; 1-2 always seem to be present in the Squantum area and 1-2 on P.I.		
<u>Snowy Egret:</u>			
22-25	M.V.	125	BBC (W.Drummond)
25,30	P.I., Plymouth	350 (roost), 13	R.Stymeist#, BBC
<u>Louisiana Heron:</u>			
17	P.I.	1	G.Gove, B.Schlinger
<u>Black-crowned Night Heron:</u>			
2,25	P.I.	30, 40	P.Alden#, G.Gove#
9,30	Plymouth	13, 15	R.Timerlake#, BBC
16,22-25	Watertown, M.V.	16, 225	R.Stymeist, BBC(W.Drummond)
<u>Yellow-crowned Night Heron:</u>			
16,18	P.I., E.Sandwich	6, 1	BBC(W.Drummond),J.Reinhager
<u>Least Bittern:</u>			
4,19	WBWS, GMNWR	1, 1	W.Bailey#, B.Porter
23,29+31	Marshfield, P.I.	1, 1+ 1	W.Petersen#,D.Crompton#+P.Alden
<u>American Bittern:</u>			
1,2,9	Dover, Marblehead,W.Newbury	1, 1, 1	F.Hamlen,W.Foley#,P.Parsons#
15,16,25	Wayland	1, 2, 3	H.Parker,R.Forster,E.Morrier
17,19,26	P.I.,W.Newbury,Hingham	2, 1, 1	H.Coolidge#,J.Nove#,R.Fox
<u>Glossy Ibis:</u>			
1,3-14	Revere, M.V.	25-30, max. 8	J.Berry, V.Laux#
10,16	Ipswich,Squantum	16,10+	J.Berry, SSBC
23+25,26	P.I., Marblehead	17+27, 8	T.Leverich#+R.Stymeist#,BBC

WATERFOWL

Certainly the highlight of the month was an adult White-fronted Goose found May 2 on Plum Island where it remained until the 7th. There are four white-fronted subspecies; the only well-differentiated and easily definable population consists of the birds that breed in a portion of western Greenland and winter mainly in Ireland (Anser albifrons flavirostris). Many observers mentioned that the Plum Island bird was of the flavirostris subspecies. The Greenland birds are smaller and their general coloration is dark and slaty. There have been more white-fronted records for eastern North America including three banded individuals recovered; some of these records are very likely of

this subspecies.

Gadwalls continue to increase their range and were noted on the south shore where they are rare during the breeding season. An adult male European Wigeon was found with an American Wigeon on the late date of May 23 on Plum Island where it continued through the 31st. An adult male was found last year on the 31st in Newburyport Harbor. Other highlights included a late King Eider on the 30th and as many as 250+ White-winged Scoters off Nahant late in the month.

There were few reports of our breeding ducks with the possible exception of Wood Duck and Northern Shoveler; perhaps we all should make a special effort in the future to census these birds on a more regular basis. R.H.S.

<u>SPECIES/DATE</u>	<u>LOCATION</u>	<u>NUMBER</u>	<u>OBSERVERS</u>
Mute Swan:			
thr.	Ipswich, Manchester	pr., pr.	v.o.
9,10,22-25	Plymouth, Acoaxet, M.V.	20, 88, 15	BBC,D.Davis#,BBC
Canada Goose:			
thr.	Muskeget I.	12+ prs. nesting	R.Heil
3	Wayland	75 migr.	R.Forster
Brant:			
1-25	Newburyport	2000-40	v.o.
9,30	Plymouth	70, 22	BBC(Timberlake),BBC(D'Entremont)
16,22-25	Squantum, M.V.	5, 1	SSBC, BBC
White-fronted Goose:			
2-7	P.I.	1 ad.	J.Berry + v.o.
	Excellent details on file; no known escape.		
Snow Goose:			
2	P.I.	1 imm.	J.Berry + v.o.
Gadwall: Not many reported.			
thr.	P.I. area	6-8	v.o.
6,31	W.Harwich	3, 1	B.Nikula#
22,23	M.V., <u>Plymouth</u> (rare)	2, 1	BBC, W.Petersen
Pintail:			
thr.	P.I.-Ipswich area	Very few noted.	v.o.
22-25	M.V.	3	BBC (Drummond)
Green-winged Teal:			
2,10,31	P.I., Wayland, W.Harwich	26, 2, 4	BBC, E.Morrier, B.Nikula#
Blue-winged Teal:			
2+16	P.I.	12, 6	BBC
16	Wayland	6	R.Forster
European Wigeon:			
23-31	P.I. (Stage I. Pool)	1 ad.	v.o.
American Wigeon:			
11,23-31	Belmont, P.I.	4, 1	R.Stymeist, v.o.
Northern Shoveler:			
thr.	P.I. At least 2 pr. noted	most of month.	v.o.
20	Medford	pr.	C.Jackson
Wood Duck:			
7	Wayland, Hyannis	4, 3	E.Morrier, J.Aylward
9,16	Plymouth, Waltham	12, f w/ 10 yg	BBC, R.Stymeist#
24,30	E.Middleboro, GMNWR	f w/ 9 yg, f w/ 9 yg	K.Anderson, A.+N.Clayton
Greater Scaup:			
2,23-25	Newburyport	20, 1	BBC, G.Gove#
Lesser Scaup:	Well described; seen in flight.		
3	Nantucket	pr.	R.Heil
Common Goldeneye:			
3	Gloucester (E.P.)	1	BBC(J.Nove)
Bufflehead:			
3	Gloucester (E.P.)	22	BBC(J.Nove)
Oldsquaw:			
1-25	Newburyport	400+-8	v.o.
Common Eider:			
3,23	Gloucester, N.Scituate	2,250	BBC,W.Petersen#
22-25,31	M.V., off Monomoy	7, 15	BBC, BBC
King Eider:			
30	P.I.	1 imm. m.	G.Gove
White-winged Scoter:			
6-12,18-25	Muskeget I.	155 migr., 49 migr.	R.Heil
16,22-25	Wollaston, M.V.	12, 25	SSBC, BBC
25,30	Lynn, Plymouth	250+, 38	R.Stymeist#,H.D'Entremont#

<u>SPECIES/DATE</u>	<u>LOCATION</u>	<u>NUMBER</u>	<u>OBSERVERS</u>
Surf Scoter: 2,30	P.I., Plymouth	1, 8	BBC, H.D'Entremont#
Black Scoter: 17,25,30	Nahant, Lynn, Plymouth	2, 1, 2	H.Coolidge#, T.Lawrence#, BBC
Ruddy Duck: thr.	P.I.	3-4 pr.	v.o.
Common Merganser: 9,17	Newbypt, Ipswich	1, 1	G.d'Entremont#, I.Giriunas#
Red-breasted Merganser: 2,16 12,16	P.I. Manchester, Squantum	75, 26 2, 8	BBC, BBC BBC, SSBC

RAPTORS THROUGH RAILS

Turkey Vultures were reported throughout eastern Massachusetts during the month although not in the numbers of the last two years. Goshawks were reported nesting in four locations and one pair in Framingham successfully fledged three young. Interesting was the report of a Sharp-shinned Hawk carrying food in Middleboro. A Rough-legged Hawk was carefully described on the very late date of May 3 at Newburyport. This species usually has completed migration through Massachusetts by early April. Other highlights included a single immature Bald Eagle and two Peregrine Falcons. The results of the Eastern Massachusetts Hawk Watch were not available for inclusion in this report.

A Bobwhite in Brookline was unusual near heavily populated Beacon Street. The only King Rail reported was in the usual Lynnfield marsh location while only two American Coot could be found on Plum Island. Even more unusual was the number of Common Gallinules noted during the month, a slim six! R.H.S.

Turkey Vulture:

7,9+10	Canton, P'town	1, 2 + 5	T.Davis, B.Nikula
9,17	Chatham, Mt.A.	4, 1	B.Nikula, L.Taylor#
17,18	Framingham, Harwich	1, 3	R.Forster
19,23-31	W.Newbury, Sherborn	1, 2	BBC, K.Winkler + E.Taylor

Goshawk:

thr.	Boxford State Forest	2 pr. nesting	v.o.
3-31	Framingham	pr. nesting w/ 3 yg.	R.Forster
8	Holliston, Winchester	pr. nesting, 1 imm.	B.Dixon, G.Gove
24	Westminster	1 ad.	D.Crompton

Sharp-shinned Hawk:

2+3,9	Mt.A., Newton	1 + 1, 1'	BBC, O.+N.Komar
16+23	E.Middleboro	1 + 1 w/ food	W.Petersen, K.Anderson
23,26	P.I., Marblehead	1, 1	H.Weissberg#, J.Nove#

Cooper's Hawk:

28	Muskeget I.	1 imm.	R.Heil
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Red-tailed Hawk:

10+11	Muskeget I.	1 w/ falconer's jesses	R.Heil
24,31	Ipswich	nest w/ 3 yg.	J.Berry

Red-shouldered Hawk:

thr.	Boxford State Forest	at least 2 pr. nesting	v.o.
17	E.Middleboro, Ipswich	1, 3	K.Anderson, I.Giriunas#
18,31	Sandwich, Kingston	1, 2	J.Aylward, B.Sorrie

Broad-winged Hawk:

thr. Just a few reports of 1-2 individuals throughout our area.

Rough-legged Hawk: (Convincing details on this report.)

3	Newbypt	1 lt. phase	J.Berry
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Bald Eagle:

6,7	Plymouth, MBO	1 imm.	MBO staff
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Northern Harrier:

thr.	Muskeget	1 m. prd. w/ 2 f (2 nests found)	R.Heil
2,3	P.I.; Saugus, Framingham	3; 1, 1	BBC; BBC, R.Forster
3,9	Newbypt	2-3	J.Berry, SSBC

Osprey:

10,22-25	Westport, M.V.	12, 8	BBC, BBC
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Peregrine Falcon:

19,23	Squantum, Monomoy	1, 1	D.Brown#, I.Nisbet#
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Merlin:

2,3	P.I., Newbypt	1, 1	BBC, J.Berry
7,16	MBO, P.I.	3, 1	MBO, BBC

<u>SPECIES/DATE</u>	<u>LOCATION</u>	<u>NUMBER</u>	<u>OBSERVERS</u>
American Kestrel:			
thr.	Only 11 individuals reported all month!		
Ruffed Grouse:			
2+9,10	Boxford, Sharon	1 + 1, 2	BBC, D.Clapp
Bobwhite:			
9+10,28	Newton, <u>Brookline</u>	1, 1	O.+N.Komar, D.Arvidson
King Rail:			
17	Lynnfield	1	H.Wiggin# + v.o.
Virginia Rail:			
3,16	Saugus, GMNWR	2, 3	C.Jackson, E.Bolton#
12,17,23	Lynnfield	20, 20, 12	W.VanCor#, H.Wiggin#, G.Gove#
Sora:			
3,12	Framingham, Lynnfield	1, 4	E.Morrier, W.VanCor#
25,30	Wayland, GMNWR	1, 2	E.Morrier, A.+ N.Clayton
Common Gallinule:			
3 on	Wayland	1	R.Forster
	Very few reports of this species; only 5 others reported!		
American Coot:			
thr.	P.I. Only 2 reported from this area		v.o.

SHOREBIRDS THROUGH ALCIDS

Oystercatchers were reported from their usual cape and island locations and, in addition, one was seen in Quincy at the time when a Curlew Sandpiper was also observed there. Another oystercatcher was seen in Newburyport Harbor on Woodbridge Island on the 17th, one day after the first Quincy report. It is interesting to note that in Griscom's and Bailey's reports of records of Massachusetts birds all reports of this species prior to 1955 were from Boston south although they were said to have formerly bred north to Maine.

Piping Plovers were reported on May 2 from Plum Island and the numbers reported were low. Two Golden Plovers were reported from Squantum and Black-bellieds were moving through all month. A total of only nine Whimbrel was reported. Upland Sandpipers were observed in several locations, including two inland areas, and Willets returned to several locations in good numbers. Individual Red Knot were reported toward the end of the month and a small group was seen on Monomoy on the 30th. Purple Sandpipers were last reported on the 27th. The unprecedented numbers of Pectoral Sandpipers of April dwindled, with the latest reports in mid-month. The "peep" sandpipers peaked during the second and third weeks and a Western was observed in a flock of 2000 Semipalmateds on Monomoy. Ruffs and Reeves made an impressive show in the Newburyport area this spring with probably eight individuals being observed and a Reeve was observed in Squantum. A pair of Wilson's Phalarope was present at Plum Island from the 9th on.

Pomarine and Parasitic jaegers were reported from Muskeget where a hybrid Great Black-backed x Herring gull was observed and photographed. A Franklin's Gull was observed 10 miles east of Boston. The Laughing Gull colony was present at Monomoy by the 11th with 700 birds reported and terns had arrived by that date also. Individual Royal Terns were reported from four locations and three individual Sandwich Terns were also observed with the sighting at Muskeget on the 27th being the earliest May record. Five Caspian Terns were reported from three locations. A Common Puffin was reported from Stellwagen Bank on the first. G.W.G.

<u>SPECIES/DATE</u>	<u>LOCATION</u>	<u>NUMBER</u>	<u>OBSERVERS</u>
American Oystercatcher:			
thr.	Muskeget, Monomoy	4 pr., max. 10	R.Heil, B.Nikula#
16,22	Squantum, Quincy	1, 1	SSBC, P.Kenney
17,30	<u>Newbypt.</u> , Nauset	1, 7	G.Gove#, P.Trull
22-25	M.V.	5	BBC
Semipalmated Plover:			
15,25	Newbypt	50, 150	R.Heil, G.Gove#
16,17,30	Squantum, Nahant, Monomoy	40, 36, 5	SSBC, H.Coolidge#, SSBC
Piping Plover:			
thr.	P.I.	max. 2	v.o.
10,19	Dartmouth, Muskeget	1, 2 pr.	BBC, R.Heil
22-25,30	M.V., Monomoy	7, 2	BBC, SSBC
23-30,23	Plymouth, Marshfield	2 pr., 1	BBC + SSBC, SSBC
24	Ipswich	3	J.Berry#

<u>SPECIES/DATE</u>	<u>LOCATION</u>	<u>NUMBER</u>	<u>OBSERVERS</u>
Killdeer:			
2,3	Newbypt, Gloucester	2, 1	BBC
9-16,9	P.I., Plymouth	max. 6, 2	BBC
12,17	Manchester;Ipswich,Marshfield	1; 1, 2	BBC; BBC, SSBC
Golden Plover:			
23	Squantum	2	SSBC(W.Harrington)
Black-bellied Plover:			
2,15,19,23	Newbypt	10, 1300, 300+	1500 BBC,R.Heil,BBC,BBC
9,10,16	Plymouth,Dartmouth,Squantum	6, 4, 60	BBC, BBC, SSBC
24,25	Ipswich, P.I.	50+, 1100+	J.Berry, R.Stymeist#
21,25;30	Monomoy	max. 1500 5/21	B.Nikula; SSBC
30	Plymouth	100	BBC
Ruddy Turnstone:			
16,17	Squantum, Newbypt	8, 1	SSBC, BBC
22-25	M.V.	20	BBC
30	Plymouth, Monomoy	40, 150	BBC, SSBC
Woodcock:			
9,10,23	Plymouth,Wayland,Ipswich	1, 1, 3	BBC, E.Morrier, J.Berry
Common Snipe:			
6	Whitman	5	W.Petersen
Whimbrel:			
9;11.30	Newbypt, Muskeget	2; 5, 2	G.Gove#; R.Heil
Upland Sandpiper:			
2,3;2	Newbury;Newbypt	max. 4; 7	v.o.; J.Berry
3-8	M.V.	max. 5	V.Laux
14;17;17-19	P'town;Marshfield;Newbypt	1; 1; 6, 2	B.Nikula;SSBC;R.Stymeist,BBC
1,9	Dover, Middleboro	1, 2	F.Hamlin, W.Petersen
Spotted Sandpiper:			
13-29	Cambridge	max. 4	v.o.
2,19	Newbypt, P.I.	1, 1	BBC
4,10	Melrose, Saugus	1, 2	C.Jackson, BBC
17	Marshfield, Ipswich	1, 1	SSBC, BBC
22-25	M.V.	1	BBC
23,24,25	Wenham,Annisquam,Squantum	9, 2, 1	J.Berry, H.Wiggin, BBC
30	Plymouth,GMNWR	3, 1	BBC
Solitary Sandpiper:			
2	Byfield	1	R.McHale
6;5,9	Cambridge;Melrose	1; 1, 2	v.o.; C.Jackson
16	Halifax, W.Bridgewater	1, 1	W.Petersen
17	Boston,Lynnfield,Marshfield	1, 1, 1	R.Stymeist#,H.Coolidge,SSBC
19,20,23	W.Newbury,Cambridge,Wenham	1, 1, 1	BBC, BBC, J.Berry
Willet:			
2-23	Newbypt-P.I.	max. 6	v.o.
30	Monomoy	max. 12	v.o.
7-31	Muskeget	max. 5 + 18 migr.	R.Heil
12,22-25	Yarmouth, M.V.	11, 5	J.Aylward, BBC
Greater Yellowlegs:			
2-19	Newbypt	max. 300 5/2	v.o.
LesserYellowlegs:			
2,16	P.I.	40, 2	BBC, SSBC
Red Knot:			
16,19	Squantum, MBO	1, 1 (first)	SSBC, MBO staff
22-25,24	M.V., Ipswich	1, 1	BBC, J.Berry#
30	Monomoy	15	SSBC
Purple Sandpiper:			
10;23	Acoaxet; N.Scituate, P.I.	31; 50, 18	BBC;W.Petersen#,O.+N.Komar
25,27	Lynn	70, 15	R.Stymeist#, D.Arvidson#
Pectoral Sandpiper:			
2-15	Newbypt	max. 100+	v.o.
10	Plymouth, Acoaxet	3, 1	W.Petersen, BBC
16	Essex, Squantum	5, 12	BBC, SSBC
White-rumped Sandpiper:			
9,15	Newbypt	12, 30	G.Gove#, R.Heil
21,30	Squantum, Monomoy	1, 1	S.Higginbotham, SSBC
Least Sandpiper:			
2-23	Newbypt-P.I.	max. 1500+ 5/15	R.Heil + v.o.
17,24;16	Ipswich;Squantum	max. 10; 20	v.o.; SSBC
22-25,30	M.V., Monomoy	5, 5	BBC, SSBC
Curlew Sandpiper:			
16-26	Squantum	1	SSBC (N.Osborne)

<u>SPECIES/DATE</u>	<u>LOCATION</u>	<u>NUMBER</u>	<u>OBSERVERS</u>
Dunlin:			
2-23	Newbypt	max. 40	BBC
3,21-25;30	Monomoy	40, 2000; 8	B.Nikula; SSBC
10,16	Acoaxet, Squantum	12, 20	BBC, SSBC
Short-billed Dowitcher:			
16;16,19	Squantum;P.I., Newbypt	15; 2, 3	SSBC; BBC
24,30	Ipswich, Monomoy	33, 3	J.Berry#, SSBC
Semipalmated Sandpiper:			
3,15,16	Monomoy, Newbypt, Squantum	800, 2000, 10	B.Nikula; R.Heil, SSBC
21-25	Monomoy	max. 2000	B.Nikula
22-25,30	M.V., Monomoy	25, 700	BBC, SSBC
Western Sandpiper:			
25	Monomoy	1	B.Nikula
Ruff:			
15,16,23,25,28	Newbypt-P.I.	2 m., 1 m., 2 m., 2(m.+f.), 1 v.o.	
19	Squantum	1 f.	D.Brown
Sanderling:			
21,25,30	Monomoy	2000,1500,1000	B.Nikula
22-25	M.V.	12	BBC
Red Phalarope:			
23	Nauset	2	P.Trull
Wilson's Phalarope:			
9-31	P.I.	max. 2 (pr.)	v.o.
3,5	N.Scituate	1	B.Litchfield#
Northern Phalarope:			
10-24	Stellw.B.	max. 75	W.Petersen#
21	Monomoy	14	B.Nikula
19,24	Muskeget	55, 22	R.Heil
	Migrating flocks heading NE into Nantucket Sound.		
Pomarine Jaeger:			
28,29	Muskeget	3, 1	R.Heil
Parasitic Jaeger:			
10,19	Stellw. Bank	2, 4	W.Petersen#
9-28	Muskeget	total of 9	R.Heil
14	Chatham	1	P.Trull
Glaucous Gull:			
23,31	Plymouth, Monomoy	1, 1	SSBC, BBC
Iceland Gull:			
1,2	Manomet	1	v.o.
3	Gloucester, Nant.	3, 1 imm.	BBC, R.Heil
4	Sandwich	1	R.Forster
9,10,11	Muskeget, Stellw., Monomoy	1 imm., 1 imm., 1	R.Heil, W.Petersen#, P.Trull
Great Black-backed Gull x Herring Gull:			
21-31	Muskeget	1	(Details and photo.) R.Heil + R.Forster
Black-headed Gull:			
16,17	P.I., Newbypt	1, 1	BBC, T.Leverich#
23	P'town	1	B.Nikula
Laughing Gull:			
11	Monomoy	700	P.Trull
17,30	P.I., Newbypt	1, 2	G.Gove#
thr.	Muskeget	max. 15 5/20	R.Heil
Franklin's Gull:			
25	10 mi. E of Boston	1 ad. (details)	W.Petersen
Bonaparte's Gull:			
2,16;23	Newbypt	80, 6; 30	BBC; T.Leverich
Little Gull:			
2,19,23	Newbypt, Muskeget, Scituate	2,3 imm., 1 ad.	v.o., R.Heil, SSBC
Black-legged Kittiwake:			
4,12	Sandwich, Nauset	1 imm., 5	RAF, P.Trull
19,25	Stellw. B.	4, 2	W.Petersen
30	Plymouth, Monomoy	1, 8	BBC, SSBC
Forster's Tern:			
16	Newbypt	1 W pl.	G.Gove#
Common Tern:			
3,4	Nantucket, Sandwich	450+, 40	R.Heil, R.Forster
9	Plymouth, Marblehead, P.I.	5, 4, 2	BBC, J.Grugan, BBC
10,11	Acoaxet, Monomoy	5, 1200	BBC, P.Trull
thr.	Muskeget	max. 600 5/19	R.Heil
30	Plymouth	1000	BBC

<u>SPECIES/DATE</u>	<u>LOCATION</u>	<u>NUMBER</u>	<u>OBSERVERS</u>
Arctic Tern:			
10,23,30	Plymouth	4, 8; 6	W.Petersen#; BBC
20,31	Muskeget	1 ad., 1 portlandica	R.Heil
30	Monomoy	10	SSEC
Roseate Tern:			
thr.	Muskeget	max. 350 5/19	R.Heil
3,11	Nant., Monomoy	300, 350	R.Heil, P.Trull
10,22,30	Acoaxet, M.V., Plymouth	2, 20, 10	BBC
Least Tern:			
3,9	Nantucket, P.I.	3, 1	R.Heil, BBC
10,14	Acoaxet, Squantum	1, 1	BBC, v.o.
16,19	Squantum, Muskeget	6, 12	SSBC, R.Heil
22-25,30	M.V., Plymouth	17, 21	BBC
Royal Tern:			
17,31	M.V., Muskeget	1, 1	V.Laux, R.Heil
23,27	Chatham, Newbypt	1, 1	I.Nisbet#, J.Baird
Sandwich Tern:			
27	Muskeget	1 ad.	R.Heil
30	Plymouth	1 ad.	H.D'Entremont
Caspian Tern:			
5;6	P'town;W.Harwich,Manchester	3; 1, 1	S.Perkins#;R.Pyle#,P.Parsons
Black Tern:			
12,16,19	Nauset,Squantum,Plymouth	1, 1, 1	P.Trull,SSBC,W.Petersen
14,18	Stellw., Newbypt	1, 1	W.Petersen, R.Emery
Common Puffin:			
1	Stellwagen	3	R.Prescott

CUCKOOS THROUGH WOODPECKERS

The highlight of the month was the appearance of a Common Cuckoo (Cuculus canorus) on Martha's Vineyard May 3-4. This sighting constitutes the first North American record outside of Alaska although there is a record from Barbados in the West Indies. The bird was found in Vineyard Haven by Arnold Brown who alerted the local birders to the presence of this unusual bird in his yard. Manomet Bird Observatory netted and banded this one year old bird on May 4. The identification was made on measurements because of the necessity of distinguishing Cuculus canorus from the nearly identical C. saturatus, the Oriental Cuckoo. In the hand, the white area under the carpal joint is barred gray in Common Cuckoo but is mostly white in the Oriental Cuckoo. In Alaska there are twelve records of C. canorus through the spring of 1980 with nine from the western Aleutian Islands alone.

Also reported during the month were the usual cuckoos though not as many as last year. A possible speculation is that the Gypsy Moth infestation further south may have detained these two species en route to New England.

Barn Owls were found in Middleboro, Medford, and Martha's Vineyard while a Snowy Owl was still around as late as May 7 on the south shore. A nest of a Short-eared Owl found on Muskeget contained 7 young.

A Chuck-will's-widow was found floundering at sea where it was saved by some Manomet Bird Observatory interns and later banded and released at Manomet. (See report elsewhere in this issue.) The now regular Chucks were found again on Chappaquiddick Island off the Vineyard. Red-bellied Woodpeckers were noted at Forest Hills Cemetery, Boston, and two were found on Martha's Vineyard. R.H.S.

Yellow-billed Cuckoo:			
13,17	Manomet, Marshfield	1 b., 1	MBO, SSEC
19,22-25,22	Wellesley, M.V., Wayland	2, 1, 1	C.Ewer, BBC, R.Forster
24,25	Mashpee, Dover	1, 1	B.Sorrie, F.Hamlen
26-31, 30	Winchester, GMNWR	2, 3	G.Gove, A.Clayton#
Black-billed Cuckoo:			
9,10-31	Harvard, Winchester	1, 2	F.Bouchard#, G.Gove
15,17	Milton, Newton	1, 1	R.Vernon, M.Murphy
17,23	Worcester, Wayland	1, 2	D.Crompton, R.Forster
25 on	Many more widespread reports of 1-3 individuals.		
Common Cuckoo:			
3+4	M.V.	1 b. ph.	Arnold Brown, V.Laux + v.o.
Barn Owl:			
3+6	E.Middleboro	1	K.Anderson#
21,22-25	Medford, M.V.	1, 1	C.Jackson, BBC(W.Drummond)

<u>SPECIES/DATE</u>	<u>LOCATION</u>	<u>NUMBER</u>	<u>OBSERVERS</u>
Screech Owl: thr.	Mt.A. Other reports of 1-2 birds from various locations.	pr. w/ 3 yg. 5/26	v.o.
Snowy Owl: 2,7	Scituate, Duxbury	1	G.Tyler, T.Davis
Barred Owl: thr.	Boxford, Middleboro	nesting pr., 2 pr	v.o., W.Petersen
Short-eared Owl thr.	Muskeget	1 pr. nest w/ 7 yg.	R.Heil
26,30	Nantucket, Monomoy	3, 1	R.Heil, B.Nikula
Whip-poor-will: 22-25,23	M.V., Newbypt	6, 6	BBC, R.Stymeist#
Chuck-will's-widow: 17	Stellw. Bank	1 f. b.	MBO staff
23	Chappaquiddick I.	2	BBC (W.Drummond + v.o.)
Common Nighthawk: 13,14	Mt.A., Framingham	1, 1	N.King#, R.Forster
16,17	Boston, E.Middleboro	1, 1	T.Leverich, K.Anderson
20,23	GMNWR, Lynnfield	1, 2	M.McClellan, O.+ N.Komar#
25 on,26 on	Brookline, Cambridge	6, 5	R.Stymeist
Chimney Swift: 1,16	Woburn, Milton	4, 31	G.Gove, SSBC
23	Newbypt	80	BBC (H.Weissberg)
	Many other reports of groups of 5-10 birds.		
Ruby-throated Hummingbird: thr.	Mt.A.	at least 15 ind.	v.o.
9	MBO, P.I.	1 b., 1	MBO, SSBC
18,25	Arnold Arboretum, P.I.	4, 8	R.Stymeist#, G.Gove#
Common Flicker: 1,2,10	Mt.A., MNWS, Saugus	10, 10, 10	F.Bouchard, BBC, BBC
Pileated Woodpecker: 1,2	N.Reading, Boxford	3, 1	A.Smith, BBC
10	Ipswich	1-2	J.Berry
Red-bellied Woodpecker: 17,22-25	Boston, M.V.	1, 2	R.Stymeist, BBC(W.Drummond)
Red-headed Woodpecker: 9,16	Rowley, Lynn	1, 1 ad.	G.d'Entremont#, R.Heil
Yellow-bellied Sapsucker: 3,25	Mt.A., Newbypt	1, 2	BBC, W.Cornwell#
24	Princeton	1	D.+ V.Crompton

FLYCATCHERS THROUGH WAXWINGS

The Scissor-tailed Flycatcher found on April 26 at Dwyer Farm, Marshfield, was last seen on May 2, and another Scissor-tail or the same individual was found at Bartlett Farm, Nantucket, on May 22-24. Eight Acadian Flycatchers were banded at Manomet this May in contrast to just two last May; others were found singing at Winchester (two) and at Provincetown. Willow Flycatchers continue to increase their territory in eastern Massachusetts while only two Alder Flycatchers were reported. Least Flycatchers, though uncommon along the coast, seem to be doing just fine closer to Worcester County; note the count of eight at the Oxbow NWR near Harvard.

Purple Martins continued their stronghold on Plum Island; the more boxes the Parker River Refuge personnel put up, the more martins appear to occupy them. The Cliff Swallows at the refuge have to contend with House Sparrows robbing their nests whereas several House Sparrows seem to co-exist with the martins.

May 14 was a banner migration day for Gray Catbirds when 135 were banded at Manomet. The MBO also banded ten Wood, one Hermit, and one Gray-cheeked Thrush on that busy day.

R.H.S.

Eastern Kingbird:

thr.	Mt.A., P.I.	at least 20 ind., max. 12 5/23	v.o., v.o.
6,10-31	Woburn (Horn Pond)	1, 6	G.Gove
8-10	First arrivals at various locations in small numbers		

Scissor-tailed Flycatcher:

1-2	Marshfield (from 4/26)	1	R.Garrish + v.o.
22-24	Nantucket (Bartlett's Farm)	1	K.+ C.Leahy

Great Crested Flycatcher:

thr.	Mt.A., Winchester	at least 10 ind., 1	v.o., G.Gove
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<u>SPECIES/DATE</u>	<u>LOCATION</u>	<u>NUMBER</u>	<u>OBSERVERS</u>
Great Crested Flycatcher, cont.:			
2 on	First arrivals throughout the area in small numbers.		
Eastern Phoebe:			
thr.	No significant numbers of this species reported.		
Yellow-bellied Flycatcher:			
17,24	Stellwagen, Annisquam	1 b., 1	MBO, H.Wiggin
25	Nahant, P'town	1, 2	R.Stymeist#, B.Nikula
26	MBO, MNWS, Squantum	2 b., 2, 1	MBO, BBC, W.Cornwell
27,31	Mt.A., P.I.	1, 1	BBC, E.Morrier
Acadian Flycatcher:			
21,26	MBO, Winchester	1 b., 2	MBO, G.Gove
26,27,28	MBO	2 b., 4 b., 1 b.	MBO
28	P'town	1	B.Nikula
Willow Flycatcher:			
17;20	Lynnfield,Milton;W.Newbury	1, 2; 1	H.Wiggin#,R.Vernon,M.McClellan
23	Lynnfield,Ipswich,Wayland	3, 1, 3	R.Stymeist#,J.Berry,R.Forster
30	IRWS, GMNWR	1, 4	J.Berry, A.+ N.Clayton
Alder Flycatcher:			
25,27	Newbury, Bedford	1, 1	J.Berry, M.Baird
Least Flycatcher:			
9,16	Harvard, Halifax	8, 2	F.Bouchard#, W.Petersen
20,21	Brookline, MBO	2, 1b	R.Stymeist#, MBO
23,26	W.Newbury, Annisquam	2, 1	R.Stymeist#, H.Wiggin
26,27	Mt.A., MNWS	1, 1	F.Bouchard, J.Nove
28	Wayland	1	R.Forster
Eastern Wood Pewee:			
15,17	MBO, Wayland	1, 1	MBO, R.Forster
22-25,23	M.V., Boxford	5, 2	BBC, O.+ N.Komar
23,25	Newbypt, Annisquam	1, 1	T.Leverich#, H.Wiggin
Olive-sided Flycatcher:			
24	M.V., Yarmouth	1, 1	V.Laux, J.Aylward
25	Dover, Newbypt	1, 1	F.Hamlen, G.Gove#
25	Annisquam; W.Newbury, P.I.	1; 1, 2	H.Wiggin#; W.Cornwell#
Horned Lark:			
thr.	Muskeget I.	3-4 prs.	1st fledged 5/7 R.Heil
thr.	P.I.	2-3 prs.	v.o.
16	Halifax	2 prs.	W.Petersen
Tree Swallow:			
thr.	P.I.	max. 200	5/9 v.o.
16,17	W.Bridgewater, Ipswich	200+, 200	W.Petersen#, BBC
Bank Swallow:			
thr; 9	Rowley, Bolton	100+, 200	v.o., F.Bouchard
Rough-winged Swallow:			
9	Newton, Plymouth, MNWS	2, 3, 3	O.Komar#,BBC, J.Grugan
12;17	Lynnfield; Boston, Marshfield	6; 3-4, 3	BBC; R.Stymeist#, SSBC
	Many other reports of 1-2 individuals.		
Barn Swallow:			
6,17	W.Harwich, Ipswich	250, 200	B.Nikula#, I_Giriunas#
Cliff Swallow:			
thr.	P.I.	7 active nests (15 ind.)	v.o.
17	Marshfield, Ipswich	2, 2	SSBC, BBC
23,28-31	M.V., Muskeget I.	2, 4+	V.Laux, R.Heil
Purple Martin:			
thr.,16	P.I., Halifax	max. 90+, 6+	T.Leverich#+v.o., W.Petersen
24-31,30	Muskeget I., Lincoln	5+, 1	R.Heil, R.Forster
Blue Jay:			
10,14	Saugus, Quincy	21, 25	C.Jackson, W.Cornwell
24	Ipswich	30	
Fish Crow:			
thr.,7	Mt.A., Westwood	pr.nesting, 1	v.o., B.Sorrie
9,12	N.Scutuate, MBO	1, 5	W.Petersen, MBO
Black-capped Chickadee:			
thr.	Manomet	246 b.	MBO
Red-breasted Nuthatch:			
2,3,9	P.I., Saugus, Boxford	1, 2, 3	BBC, C.Jackson, J.Berry
10	Ipswich, Westport	2, 1	J.Berry, BBC
22,30	Cambridge, IRWS	2, 1	F.Bouchard, J.Berry
Brown Creeper:			
2,26	P.I., MNWS	2, 1 (late)	BBC, BBC (J.Nove)
	Other reports of 1-2 individuals from breeding locations.		

<u>SPECIES/DATE</u>	<u>LOCATION</u>	<u>NUMBER</u>	<u>OBSERVERS</u>
House Wren:			
2	Dover, W.Newbury	1, 1	F.Hamlen, P.Alden#
3,5	Saugus, Mt.A.	2, 1	C.Jackson, F.Bouchard
10,16	Middlesex Fells	6, 5	G.Gove#, R.Clayton#
Carolina Wren:			
15,22-25	Milton, M.V.	1, 8	R.Vernon, BBC (W.Drummond)
Marsh Wren (Long-billed Marsh Wren):			
3 on, 23	Wayland, Lynnfield	3-6, 20	R.Forster#, R.Stymeist#
16,30	P.I., GMNWR	6+, 12	W.Drummond#, A.+ N.Clayton
Gray Catbird:			
1,2	Mt.A., Boxford-P.I.	1, 6	A.Scott#, BBC (S.Grinley)
14	Wollaston, Squantum	8, 12	W.Cornwell
14	Manomet	135 b.	MBO staff
15,17,22-25	Mt.A., Ipswich, M.V.	10, 20, 195	BBC trips
Brown Thrasher:			
10;16	Saugus; Middlesex Fells, P.I. 7; 4, 12		BBC; R.Clayton#, W.Drummond
	Other reports of 1-3 individuals from many locations.		
Wood Thrush:			
1,2,5	Melrose, Boxford, Manomet	1, 1, 1	C.Jackson, BBC, MBO
9	General arrival with 1-2 birds reported from many locations.		
10,14	Fall River, Manomet	18, 10 b.	BBC, MBO
15 on	Birds reported on territory in many locations.		
Hermit Thrush:			
14,16	Manomet, Lynn	1 b., 2 pr.	MBO, R.Heil
	Rare local breeder in Essex County.		
23	Plymouth (Old Sandwich Road)	1	W.Petersen
Swainson's Thrush:			
20	Boston, Mt.A.	4, 3	D.Brown, R.Campbell#
25,27	P'town, Mt.A.	45, 15	W.Bailey#, W.Cornwell#
	Many other reports of 1-2 birds after the 20th.		
Gray-cheeked Thrush:			
14,26,27	Manomet	1, 3, 3 all b.	MBO
25	Sandwich, P'town	1, 8+	J.Aylward, B.Nikula#
25	Lincoln, Rockport	1, 1 b.	P.Swift, R.Norris
26+31	Muskeget I.	1 + 1	R.Heil
26,27	Hingham, Mt.A.	1, 1 both singing	R.Fox, M.Noland#
Veery:			
6;9	E.Middleboro; Dover, Newton	1; 1, 1	K.Anderson;F.Hamlen, O.Komar
14 on	General arrival of 1-2 individuals in various locations.		
25,30	P'town, IRWS	30, 8	B.Nikula#, J.Berry
Eastern Bluebird:			
8,16	Braintree, Lynn	1, 1	D.Gallagher, R.Heil
Blue-gray Gnatcatcher:			
2-6,9	Mt.A., 6 locations	5+, 12 ind.	v.o., v.o.
10,12	Saugus, Manchester	1, 1	BBC
13,16	Dover, W.Bridgewater	2, 2	F.Hamlen, W.Petersen
23	Boxford, W.Newbury; Wenham	pr., pr.; 1	R.Stymeist#; J.Berry
Ruby-crowned Kinglet:			
7,12	Mt.A., Manchester	5, 3	S.Denison#, J.Nove#
	1-8 birds reported from many locations prior to the 7th.		
Water Pipit:			
3,24	Nantucket	1, 1	R.Heil, J.Berry#
Cedar Waxwing:			
24,27	Annisquam, Mt.A	40, 35	H.Wiggin, R.Stymeist
	Other reports of small numbers from mid-month.		

VIREOS THROUGH SPARROWS

In general, migration for passerines occurred right on schedule, with few notably early or late records. Most field observers perceived that migrant numbers, especially among warblers, were very low, but the records submitted would indicate a basically typical year. Actually, some quite high counts of certain warbler species were recorded during the two big waves of May 14 and May 24-25. As might be expected, weather patterns on these days involved wind shifts to the southwest, bringing unusually warm air and the quantities of migrants. Observers at coastal sites were treated to remarkable numbers of warblers during the May 24-25 movement. The action apparently started one day earlier at Muskeget Island where 25 Northern Waterthrushes were observed on the 24th. On the next day, both Provincetown and Marblehead Neck had bonanzas: the Provincetown observers saw 35 Magnolia Warblers, 40 Canada Warblers and 50 Ovenbirds. Meanwhile at Marblehead Neck, 39 Magnolias and over 100 Canadas came through. A bit more inland,

Mt. Auburn was finally the way it should be in May, alive with warblers and song!

On the other end of the number spectrum, both Nashville Warbler and Cape May Warbler counts were low throughout the region, when compared to recent years. Also, the numbers of southern warblers were average at best. No Yellow-throated Warblers were reported, and the regional count of three Prothonotary Warblers was below what we've come to expect. Three Cerulean Warblers and five Worm-eating Warblers constituted about average counts.

May reports of rarities were unusually sparse. A male Yellow-headed Blackbird was seen at Plum Island at mid-month. Clay-colored Sparrows at Rockport and Mt. Auburn, the latter bird discovered due to its song, were nice finds. Also at Mt. Auburn for a period of almost a week were three distinctly different plumaged Blue Grosbeaks: male, female, and a subadult male.

L.E.T.

<u>SPECIES/DATE</u>	<u>LOCATION</u>	<u>NUMBER</u>	<u>OBSERVERS</u>
<u>White-eyed Vireo:</u>			
1,9	Manomet, P.I.	1 b "first", 1	MBO, BBC
14-30	10 loc.	15 ind.	v.o.
<u>Yellow-throated Vireo:</u>			
9,17	Harvard, Marshfield	1, 1	F.Bouchard#, SSBC
17,25	Wayland, Annisquam	1, 1 singing	R.Walton#, H.Wiggin
19-31	Wayland	pr. on nest	R.Forster#
<u>Solitary Vireo:</u>			
2-20,3	Mt.A., Framingham	9 max., 2	BBC, R.Forster
2-19,23	10 loc., Newbypt	14 ind., 1	v.o., BBC
<u>Red-eyed Vireo:</u>			
12	Wayland, Newbypt	1, 1	R.Forster
16,17	Manchester, Ipswich	1, 2	BBC
22,26	M.V., MNWS	30, 9	BBC
<u>Philadelphia Vireo:</u>			
23,24	P.I.	1, 1	BBC, J.Grugan
25	P'town	1	B.Nikula#
<u>Warbling Vireo:</u>			
1-31,1	Woburn, Lincoln	12 max., 1	G.Gove, R.Forster
4	Harvard, Newton	4, 4	F.Bouchard#, O.+ N.Komar
9,16-23	WBWS, Halifax	1, 3 max.	B.Nikula, W.Petersen
21,25	M.V., Newbypt	1, 18	V.Laux, R.Stymeist#
<u>Black-and-white Warbler:</u>			
1-26,14	Mt.A., S.Peabody	16 max., 20	v.o., R.Heil
14,25;14	P'town; Manomet	35, 15; 28 b.	B.Nikula#; MBO
<u>Prothonotary Warbler:</u>			
10,17-19	Wayland, Boston	1 m. singing + ph., 1 m.	R.Walton#, R.Stymeist#
23	Newbypt	1 f.	D.Arvidson#
<u>Worm-eating Warbler:</u>			
1-2,18	Mt.A, Brookline	1, 1	BBC, H.Wiggin
23,28	Wellesley, Westport	1, 2	L.Robinson, N.Powell#
<u>Golden-winged Warbler:</u>			
9-30,17	W.Newbury, Ipswich	3 max., 2	v.o., BBC
17,25	Wellesley, Sandwich	1, 1	K.Winkler, R.Pease#
10-30	Essex County (6 loc.)	7 m. singing	J.Berry
<u>Blue-winged Warbler:</u>			
9-30,9	W.Newbury, Sharon	17 max., 7	v.o., D.Clapp
1-25,10	Mt.A., New Bedford	1 max., 1	v.o., B.Sorrie
14,25	Manomet, P'town	2 "first", 1	MBO, B.Nikula
9-25	Essex County (9 loc.)	11	J.Berry
<u>"Brewster's" Warbler:</u>			
9-27	W.Newbury	2 max.	v.o.
<u>Tennessee Warbler:</u>			
8,14-27	Mt.A.	2, 10 max.	L.Robinson#, v.o.
20,22	Manomet, M.V.	1 "first", 10	MBO, BBC
23,25	Newbypt, Provincetown	9, 15	T.Leverich#, B.Nikula#
<u>Orange-crowned Warbler:</u>			
19,26	Mt.A., Squantum	1 singing, 1	R.Stymeist, R.Emery#
<u>Nashville Warbler:</u>			
1-18, 2	Mt.A., W.Newbury	3 max., 1	v.o., G.Gove
3, 8	Dover, Manomet	1, 1 "first"	F.Hamlen, MBO
10, 23	MNWS, Plymouth	3, 6	C.Blaszczak, W.Petersen#
25, 26	Cuttyhunk, Annisquam	3, 1	P.Hallowell, H.Wiggin
<u>Northern Parula Warbler:</u>			
1-26,14	Mt.A., Manomet	8 max., 3 b.	v.o., MBO

<u>SPECIES/DATE</u>	<u>LOCATION</u>	<u>NUMBER</u>	<u>OBSERVERS</u>
Northern Parula Warbler, cont.:			
14	S.Peabody, P'town	11, 40	R.Heil, B.Nikula
25	MNWS, Cuttyhunk	16, 6	C.Blaszczak, P.Hallowell
Yellow Warbler:			
thr., 14	Woburn, Manomet	16 max., 7 b.	G.Gove, MBO
16, 22	P.I., M.V.	40, 50	BBC
25, 30	P'town, GMNWR	10, 20	B.Nikula#, BBC
Magnolia Warbler:			
1-26, 13	Mt.A., Manomet	2 max., 1 m. b. "first"	v.o., MBO
14, 24	P'town, Muskeget I.	10, 7	B.Nikula#, R.Heil
25	MNWS, P'town	39, 35	C.Blaszczak, B.Nikula#
Cape May Warbler:			
8	Manomet, Mt.A.	1 m., 1	MBO, M.Argue
14	Wollaston, S.Peabody	3, 3	W.Cornwell, R.Heil
16, 25	Milton, M.V.	4, 1	SSEC, BBC
Black-throated Blue Warbler:			
2, 6-25	P.I., Mt.A.	2, 4 max.	BBC, v.o.
14, 25	Manomet, P'town	6 b. "first", 10	MBO, B.Nikula#
25, 26	Cuttyhunk I., MNWS	2, 3	P.Hallowell, BBC
Yellow-rumped Warbler:			
1-15, 17, 25	Mt.A.	100 max., 8, 2	v.o., BBC, F.Bouchard
14	P'town, Manomet	100, 9 b.	B.Nikula, MBO
Black-throated Green Warbler:			
1-26, 2	Mt.A., Boxford	6 max., 10	v.o., BBC
10, 17	MNWS, Ipswich	7, 12	C.Blaszczak, BBC
25	E.Middleboro, Manomet	2 m., 1 m. b. "first"	K.Anderson, MBO
25, 30	P'town, IRWS	25, 7 m.	B.Nikula#, J.Berry
Cerulean Warbler:			
14, 17	N.Weymouth, Wayland	1, 1 m.	D.Brown, R.Forster
23	P.I.	1	H.Willoughby#
Blackburnian Warbler:			
1-27, 25	Mt.A., Cuttyhunk I.	4 max., 2	v.o., P.Hallowell
25	MNWS, Newbypt	7, 7	C.Blaszczak, W.Cornwell
25	Annisquam, P'town	7, 15	H.Wiggin#, B.Nikula#
Chestnut-sided Warbler:			
1, 8-26	Milton, Mt.A.	1, 5 max.	S.Higginbotham#, v.o.
12, 17	Manomet, Ipswich	1 b. "first", 12	MBO, BBC
23, 25	Wenham, MNWS	17, 6	J.Berry, C.Blaszczak
Bay-breasted Warbler:			
16, 24	Milton, Newbypt	9, 4	SSEC, J.Grugan
25	Newbypt, P'town	20, 8	W.Cornwell, B.Nikula#
25, 26	Manomet, MNWS	1 f. b. "first", 11	MBO, BBC
8-27	Mt.A.	2 max.	v.o.
Blackpoll Warbler:			
9, 10, 13	Harvard, Fall River, Manomet	1, 2, 3	F.Bouchard#, BBC, MBO
15-28, 16	Mt.A., Milton	7 max., 12	v.o., SSEC
22, 24	M.V., Muskeget I.	15, 40+	BBC, R.Heil
25	Annisquam, P'town	8, 50	H.Wiggin, B.Nikula#
Pine Warbler:			
2-25, 25	6 loc., M.V.	7 ind., 10	v.o., BBC(Drummond)
Prairie Warbler:			
thr., 9	Woburn, Sharon	4 max., 7	G.Gove, D.Clapp
10, 22	Saugus, M.V.	11, 20	BBC
25	Cuttyhunk I., Essex Co.	6, 11	P.Hallowell, J.Berry
Palm Warbler:			
1-8, 9	Mt.A.	max. 10, 1	v.o., F.Bouchard#
6, 16	Winchester	5, 1	G.Gove
Ovenbird:			
2, 9	Boxford	6, 16 m.	BBC, J.Berry
14, 17	S.Peabody, E.Middleboro	13, 13 m. singing	R.Heil, K.Anderson
24, 25	MNWS, P'town	24, 50+	C.Blaszczak, B.Nikula
Northern Waterthrush:			
1-18, 11	Mt.A., Millis	2 max., 6	v.o., B.Cassie
14, 25	P'town	10, 5	B.Nikula#
24, 31	Muskeget I., Brookline	25+, 1	R.Heil, D.Arvidson#
Louisiana Waterthrush:			
2-17	Boxford	3 max.	v.o.
Kentucky Warbler:			
14, 16	Manomet, Peabody	1 m. b., 1 singing	MBO, F.Hamlen#
23, 17	Oak Bluffs, Millis	1, 1	BBC(Drummond), J.Marshall

<u>SPECIES/DATE</u>	<u>LOCATION</u>	<u>NUMBER</u>	<u>OBSERVERS</u>
<u>Mourning Warbler:</u>			
21,26	Manomet, Marblehead	1 imm. m. b., 2	MBO, BBC
24-31	12 loc.	14 singles	v.o.
<u>Common Yellowthroat:</u>			
3,11	Saugus, Millis	4, 8	BBC, B.Cassie
14	Squantum, Manomet	10, 34 b.	BBC, MBO
17	Ipswich	20	BBC
25	MNWS, M.V.	46, 50	C.Blasczak, BBC
25	Rowley- W.Newbury	40+	J.Berry
<u>Yellow-breasted Chat:</u>			
13,21	Manomet	1 m. b., 1 m. b.	MBO
24	P.I.	1	J.Grugan
<u>Hooded Warbler:</u>			
2-6,9	WEWS, MNWS	1 m., 1 f.	v.o., J.Grugan
11,18-26	Millis, Muskeget I.	1, 1 m. ph.	B.Cassie, R.Heil
14	N.Weymouth	1	D.Brown
<u>Wilson's Warbler:</u>			
10,15	Mt.A., Manomet	1, 3 m. b. "first"	BBC, MBO
18,25	Mt.A., MNWS	5, 12	L.Robinson, C.Blasczak
<u>Canada Warbler:</u>			
11,14	Millis, Manomet	2, 1	B.Cassie, MBO
25	MNWS, P'town	46, 100+	C.Blasczak, W.Bailey#
<u>American Redstart:</u>			
9,10	P.I., Westport	2, 2	BBC, BBC
14,14-27	Manomet, Mt.A.	5 b., 19 max.	MBO, v.o.
25	P'town, Squantum	60, 15 (mostly f.)	B.Nikula#, R.Emery#
26	MNWS	35	BBC
<u>Bobolink:</u>			
6,9-25	Framingham, W.Newbury	1, 30 max.	R.Forster, v.o.
17,20	Marshfield, Wellesley	100+, 30	SSBC(T.Davis), K.Winkler
<u>Eastern Meadowlark:</u>			
2,23	W.Newbury, Newbypt	6, 5	BBC, BBC
<u>Yellow-headed Blackbird:</u>			
16	P.I.	1 ad. m.	E.Nielsen#
<u>Orchard Oriole:</u>			
1,10	Nantucket, Wayland	1, 3	E.Andrews, R.Forster
10,14	Saugus, S.Peabody	4, 4	BBC, R.Heil
16,25	Halifax, Rowley	3, 4	W.Petersen, J.Berry
<u>Northern Oriole:</u>			
2-26,2	Mt.A., Needham	20 max., 1	v.o., F.Hamlen
8,10	Manomet, Middlesex Fells	2 m. b. "first", 7	MBO, BBC
16,17	Milton, Newton	8, 10	SSBC, BBC
25	M.V.	15	BBC
<u>Rusty Blackbird:</u>			
2	W.Newbury, Wayland	4, 15	BBC, R.Forster
<u>Brown-headed Cowbird:</u>			
18	Mt.A.	20	BBC
<u>Scarlet Tanager:</u>			
3-23,9	Mt.A., Boxford	3 max., 6 m.	v.o., J.Berry
17,25	Jamaica Plain, Newbypt	4, 5	R.Stymeist, W.Cornwell
<u>Summer Tanager:</u>			
16,17	Dover, Newton	1 m. singing, 1 m.	F.Hamlen, BBC(M.Murphy)
24	M.V.	1	V.Laux
<u>Rose-breasted Grosbeak:</u>			
10,11	Milton, Millis	3, 4	SSBC, B.Cassie
14,17	Mt.A., Ipswich	15, 6	BBC
23,25	Wenham, Annisquam	10,25	J.Berry, H.Wiggin
<u>Blue Grosbeak:</u>			
14,15-19	N.Weymouth, Mt.A.	1, 3	D.Brown, v.o.
29	Winchester	1 m.	G.Gove
<u>Indigo Bunting:</u>			
13,16	Waltham, Milton	1, 5	T.Hoist, SSBC
17,25	Jamaica Plain, Sherborn	4, 2	R.Stymeist, BBC
<u>Dickcissel:</u>			
18	Muskeget I.	1	R.Heil
<u>Evening Grosbeak:</u>			
2,14	Boxford, P'town	4, 2	BBC, B.Nikula
19,25	Mt.A., P'town	2, 1	R.Stymeist, B.Nikula
<u>Purple Finch:</u>			
1-25,2	Mt.A., P.I.	6 ind., 4	v.o., BBC

<u>SPECIES/DATE</u>	<u>LOCATION</u>	<u>NUMBER</u>	<u>OBSERVERS</u>
Purple Finch, cont.:			
10,17	Westport, Ipswich	6, 6	BBC, BBC
25,26	M.V., MNWS	4, 2	BBC, BBC
House Finch:			
16,25	Manchester, M.V.	21, 35	BBC, BBC
28,30	Annisquam, Plymouth Beach	15 pr., 5	H.Wiggin, BBC
Pine Siskin:			
9,19,21	P'town	1, 1, 2	B.Nikula
17,19	Ipswich, Rockport	4, 4 b.	BBC, R.Norris
American Goldfinch:			
1,3	Mt.A., Gloucester	8, 11	BBC, BBC
16,17	P.I., Ipswich	25, 12	BBC, BBC
Rufous-sided Towhee:			
10,14	Saugus, Manomet	25, 9 b.	BBC, MBO
25,26	M.V., MNWS	250, 7	BBC(Drummond), BBC
Savannah Sparrow:			
1, thr.	Saugus, Muskeget I.	30, 50+ nesting	C.Jackson, R.Heil
3,25	Newbypt, M.V.	11, 8	J.Berry, BBC
Grasshopper Sparrow:			
25,28	M.V., S.Dartmouth	1, 2	BBC, N.Powell
Sharp-tailed Sparrow:			
8-31,14	Muskeget I., Manomet	19 max., 1 b.	R.Heil, MBO
19,30	Squantum, Monomoy	4, 6	D.Brown, SSBC
Seaside Sparrow:			
19,30	Squantum, Monomoy	1, 1	D.Brown, SSBC
Vesper Sparrow:			
12,23	P.I., Plymouth	1, 2	R.Forster#, W.Petersen#
Dark-eyed Junco:			
2,8	P.I., Manomet	2, 1 b.	BBC, MBO
12	Manchester	3	BBC
Chipping Sparrow:			
1-8,1	Mt.A., Milton	8 max., 3 singing	v.o., S.Higginbotham#
2,17	P.I., Ipswich	12, 12	BBC, I.Girunas
Clay-colored Sparrow:			
7,19	Rockport, Mt.A.	1 b., 1 singing	R.Norris, R.Stymeist#
Field Sparrow:			
3,10	Newbypt, Saugus	1 m., 6	J.Berry, BBC
25	Ipswich, M.V.	5, 3	J.Berry, BBC
White-crowned Sparrow:			
3,14	Nantucket, Manomet	4, 1 b.	R.Heil, MBO
16	Milton (F.M.), W.Newbury	1, 1	SSBC, BBC
20,25	Mt.A., Framingham	1, 2	F.Bouchard#, K.Hamilton#
25,26	Muskeget I., P'town	1, 1	R.Heil, B.Nikula
White-throated Sparrow:			
1-9,3	Mt.A., Saugus	50 max., 10	v.o., BBC
14,24	Manomet, Ipswich	11 b., 1	MBO, J.Berry
Lincoln's Sparrow:			
1-6,7	Harwich, Manomet	1, 1 b.	B.Nikula#, MBO
14,20	Manomet, Winchester	1 b., 1	MBO, G.Gove
25	P'town	1	B.Nikula
Swamp Sparrow:			
3,9	Saugus, Boxford	8, 5 m.	BBC, J.Berry
14	Manomet	10 b.	MBO
Song Sparrow:			
3,25	Saugus, M.V.	20, 30	BBC, BBC

Addenda

Field Records: March 1981

Thick-billed Murre:			
14	Nantucket (Cisco)	1	J.Grugan

Corrigenda

Field Records: April 1981

Great Cormorant:			
26	Essex County	260	J.Nove
	should read		
Double-crested Cormorant:			
26	Essex County	260	J.Nove

List of Abbreviations

ad.	adult	F.M.	Fowl Meadow, Milton
alt.	alternate (plumage)	Gr.	greater as in Gr. Boston area
b.	banded	I.	Island
br.	breeding	M.V.	Martha's Vineyard
dk.	dark (phase)	Mt.A.	Mt. Auburn Cemetery, Cambridge
f.	female	Nant.	Nantucket
fl.	fledge	Newbypt.	Newburyport
imm.	immature	ONWR	Oxbow National Wildlife Refuge
ind.	individuals	P.I.	Plum Island
loc.	locations	P'town	Provincetown
lt.	light (phase)	R.P.	Race Point, Provincetown
m.	male	S.N.	Sandy Neck, Barnstable
max.	maximum	Stellw.	Stellwagen (Bank)
migr.	migrating	ABC	Allen Bird Club
ph.	photographed	BBC	Brookline Bird Club
pl.	plumage	BOEM	Bird Observer of Eastern Massachusetts
pr.	pair	CBC	Christmas Bird Count
thr.	throughout	DFWS	Drumlin Farm Wildlife Sanctuary
v.o.	various observers	FBC	Forbush Bird Club
W	winter (2W = second winter)	GBBCC	Greater Boston Breeding Bird Census
w/	with	GMNWR	Great Meadows National Wildlife Refuge
yg.	young	IRWS	Ipswich River Wildlife Sanctuary
#	additional observers	MAS	Massachusetts Audubon Society
A.A.	Arnold Arboretum	MBO	Manomet Bird Observatory
A.P.	Andrews Point, Rockport	MNWS	Marblehead Neck Wildlife Sanctuary
Buzz.	Buzzards (Bay)	NBBC	Newburyport Breeding Bird Census
C.Cod	Cape Cod	SSBC	South Shore Bird Club
E.P.	Eastern Point, Gloucester	TASL	Take a Second Look (BOEM project)
F.E.	First Encounter Beach, Eastham	WBWS	Wellfleet Bay Wildlife Sanctuary
F.H.	Fort Hill, Eastham	WMWS	Wachusett Meadows Wildlife Sanctuary

A CHUCK-WILL'S-WIDOW ON STELLWAGEN BANK

Jim Bird, Allston, and Mike Payne, Plymouth

On May 16, 1981, during a New England Aquarium-sponsored whale-watch on the northeast corner of Stellwagen Bank approximately 42° 30' N, 70° 25' W, a female Chuck-will's-widow (Caprimulgus carolinensis) appeared near the boat. Members of the Manomet Bird Observatory staff tentatively identified the bird as it flew by the boat at least twice. On one of its passes, the bird landed on the water approximately 10 m off the bow. Two Great Black-backed Gulls (Larus marinus) circled the bird as it flew off the water and finally dropped on the boat. The bird was caught and positively identified as a female Chuck-will's-widow. Two Humpback Whales (Megaptera novaeangliae) were approximately 20 m off the starboard bow during this entire time. The bird was taken to Manomet Bird Observatory where it was held for a day, banded, and released on May 18. Manomet Bird Observatory has supplied the following information: female by plumage, after-hatch-year by plumage, weight: 92.7g, trace of fat, wing length: 120 mm, no ectoparasites, slight molt, banded May 18, 1981, bank No. 132318424.

TIDE CHART

Tide Table For Boston Harbor
(Add one hour for Daylight Savings Time)

1981 AUG. - SEPT. 1981

Morning	BOSTON	Afternoon	Morning	BOSTON	Afternoon	Morning	BOSTON	Afternoon	Morning	BOSTON	Afternoon			
High 11:37 Low 5:23 Sunrise 5:47	30	High 11:53 Height 10.6 Low 5:38 Height 9.4 Sunrise 5:47	High 4:25 Height 10.30 Low 10:30 Height 9.15 Sunrise 5:47	6 LAST QUARTER	High 4:45 Height 10.23 Low 11:07 Height 9.22 Sunrise 5:23	High 10:23 Height 10.43 Low 4:13 Height -0.7 Sunrise 5:23	13	High 10:41 Height 10.8 Low 4:29 Height -0.5 Sunrise 5:54	High 3:45 Height 9.6 Low 9:50 Height -0.31 Sunrise 5:31	20 LAST QUARTER	High 4:06 Height 10.30 Low -0.5 Height 5.44			
High 6:06 Low 1:04 Sunrise 5:13		High 12:20 Height 10.0 Low 6:21 Height 6.21 Sunrise 6:19	High 5:18 Height 9.9 Low 11:23 Height 5.15		High 5:30 Height 8.7 Low --- Height 6.07	High 11:05 Height 10.4 Low 4:56 Height 5.23		High 11:05 Height 10.4 Low 4:56 Height 5.23	High 11:27 Height 11.0 Low 5:15 Height 5.53 Sunrise 5:31		High 4:45 Height 9.2 Low 10:51 Height 5.75 Sunrise 5:31	High 5:09 Height 10.2 Low 11:35 Height -1.2 Sunrise 5:42	High 5:09 Height 10.2 Low 11:35 Height -1.2 Sunrise 5:42	High 5:09 Height 10.2 Low 11:35 Height -1.2 Sunrise 5:42
High 12:38 Low 6:47 Sunrise 5:13		High 1:01 Height 9.9 Low 7:05 Height 6.17 Sunrise 5:18	High 6:14 Height 9.9 Low 12:03 Height 5.18		High 6:33 Height 8.8 Low 12:19 Height 6.03 Sunrise 5:26	High 11:50 Height 10.8 Low 5:39 Height 5.26		High 11:50 Height 10.8 Low 5:39 Height 5.26	High 12:36 Height 11.1 Low 5:47 Height 5.47		High 5:51 Height 9.0 Low 11:55 Height 5.71 Sunrise 5:32	High 5:51 Height 9.0 Low 11:55 Height 5.71 Sunrise 5:32	High 6:14 Height 10.0 Low --- Height 5.79	High 6:14 Height 10.0 Low --- Height 5.79
High 1:20 Low 7:57 Sunrise 5:11	2	High 1:43 Height 9.7 Low 8:48 Height 6.15 Sunrise 5:11	High 7:09 Height 8.0 Low 12:58 Height 5.10	9	High 7:27 Height 9.1 Low 1:14 Height 6.03 Sunrise 5:27	High 12:13 Height 11.0 Low 6:25 Height -1.3 Sunrise 5:27	16	High 12:36 Height 11.1 Low 5:47 Height 5.47	High 6:57 Height 8.9 Low 12:41 Height -1.1 Sunrise 5:32	23	High 7:20 Height 10.0 Low 0.7 Height 5.39			
High 2:02 Low 8:53 Sunrise 5:13		High 2:23 Height 9.5 Low 9:34 Height 6.13	High 8:02 Height 8.3 Low 1:52 Height 5.19		High 8:18 Height 9.5 Low 1:2 Height 6.01	High 10:9 Height 10.9 Low -1.2 Height 5.29		High 10:9 Height 10.9 Low -1.2 Height 5.29	High 1:24 Height 7.40 Low -1.4 Height 5.47		High 8:00 Height 9.1 Low 1:44 Height 0.2 Sunrise 5:34	High 8:00 Height 9.1 Low 1:44 Height 0.2 Sunrise 5:34	High 8:21 Height 10.1 Low 2:02 Height 0.5 Sunrise 5:37	High 8:21 Height 10.1 Low 2:02 Height 0.5 Sunrise 5:37
High 2:46 Low 9:53 Sunrise 5:13	4	High 3:07 Height 9.2 Low 10:11 Height 6.17	High 8:51 Height 8.3 Low 2:42 Height 5.21	11	High 9:07 Height 9.2 Low 2:55 Height 5.58	High 1:52 Height 10.1 Low 7:59 Height -0.9	18	High 2:15 Height 8.1 Low -1.2 Height 5.47	High 8:58 Height 8.9 Low -0.3 Height 5.36	25	High 9:17 Height 10.0 Low 0.2 Height 5.36			
High 3:34 Low 10:53 Sunrise 5:14		High 3:58 Height 9.0 Low 10:11 Height 6.10	High 9:37 Height 8.3 Low 3:28 Height -0.2 Sunrise 5:22		High 9:56 Height 9.5 Low 3:43 Height 5.56	High 2:52 Height 10.1 Low 8:52 Height -0.4 Sunrise 5:29		High 2:52 Height 10.1 Low 8:52 Height -0.4 Sunrise 5:29	High 3:08 Height 9.8 Low 10:29 Height -0.8 Sunrise 5:36		High 9:46 Height 9.7 Low 3:32 Height -0.1 Sunrise 5:36	High 9:46 Height 9.7 Low 3:32 Height -0.1 Sunrise 5:36	High 10:05 Height 10.3 Low 4.3 Height 5.34	High 10:05 Height 10.3 Low 4.3 Height 5.34

BOSTON AUG. - SEPT. BOSTON SEPTEMBER BOSTON SEPTEMBER BOSTON SEPTEMBER BOSTON SEPTEMBER BOSTON SEPTEMBER BOSTON

1981 SEPT. - OCT. 1981

Morning	BOSTON	Afternoon	Morning	BOSTON	Afternoon	Morning	BOSTON	Afternoon	Morning	BOSTON	Afternoon				
High 10:33 Low 4:17 Sunrise 5:37	27	High 10:51 Height 10.4 Low 4:34 Height -0.3 Sunrise 5:32	High 2:59 Height 9.02 Low 1:32 Height 5.44	4	High 3:15 Height 9.0 Low 9:34 Height 0.8 Sunrise 5:20	High 9:04 Height 10.6 Low -0.3 Sunrise 5:51	11	High 9:25 Height 10.4 Low 3:14 Height -0.3 Sunrise 5:58	High 2:30 Height 10.1 Low 8:32 Height -0.3 Sunrise 5:58	18	High 2:48 Height 10.0 Low -1.1 Height 4.59				
High 11:12 Low 5:38 Sunrise 5:36		High 11:32 Height 10.1 Low 5:17 Height -0.4 Sunrise 5:30	High 3:47 Height 8.3 Low 9:51 Height 1.6 Sunrise 5:45		High 4:05 Height 10.4 Low 10:27 Height 1.0 Sunrise 5:20	High 10:05 Height 10.6 Low 3:40 Height -0.8 Sunrise 5:52		High 10:05 Height 10.6 Low 3:40 Height -0.8 Sunrise 5:52	High 10:13 Height 10.8 Low 4:04 Height -1.0 Sunrise 5:11		High 3:29 Height 9.6 Low 9:31 Height 0.2 Sunrise 6:30	High 3:29 Height 9.6 Low 9:31 Height 0.2 Sunrise 6:30	High 3:47 Height 10.5 Low 10:11 Height -0.6 Sunrise 4:58	High 3:47 Height 10.5 Low 10:11 Height -0.6 Sunrise 4:58	High 3:47 Height 10.5 Low 10:11 Height -0.6 Sunrise 4:58
High 11:50 Low 6:57 Sunrise 5:36		High 12:10 Height 10.0 Low 6:37 Height -0.3 Sunrise 5:26	High 4:20 Height 8.0 Low 10:44 Height 1.8 Sunrise 5:46		High 4:58 Height 9.1 Low 11:40 Height 5.46	High 10:36 Height 11.1 Low 4:25 Height -1.2 Sunrise 5:52		High 10:36 Height 11.1 Low 4:25 Height -1.2 Sunrise 5:52	High 11:02 Height 11.0 Low 4:51 Height -1.6 Sunrise 5:08		High 4:30 Height 9.2 Low 10:34 Height 0.6 Sunrise 6:02	High 4:30 Height 9.2 Low 10:34 Height 0.6 Sunrise 6:02	High 4:52 Height 10.0 Low 11:16 Height -0.2 Sunrise 4:58	High 4:52 Height 10.0 Low 11:16 Height -0.2 Sunrise 4:58	High 4:52 Height 10.0 Low 11:16 Height -0.2 Sunrise 4:58
High 12:12 Low 8:16 Sunrise 5:40	30	High 12:28 Height 10.0 Low 6:37 Height -0.3 Sunrise 5:26	High 5:36 Height 7.9 Low 11:40 Height 5.46	7	High 5:53 Height 8.8 Low --- Height 5:54	High 11:24 Height 11.5 Low 5:11 Height 1.4 Sunrise 5:54	14	High 11:51 Height 11.0 Low 5:40 Height -2.0 Sunrise 5:06	High 5:36 Height 9.9 Low 11:39 Height 0.6 Sunrise 6:02	21	High 5:58 Height 9.7 Low --- Height 4.56				
High 12:51 Low 8:56 Sunrise 5:42		High 1:07 Height 9.8 Low 7:19 Height -0.1 Sunrise 5:24	High 6:32 Height 8.1 Low 12:20 Height 5.9		High 6:48 Height 9.0 Low 12:39 Height 1.5 Sunrise 5:56	High 10:36 Height 10.6 Low 5:58 Height -1.4 Sunrise 5:55		High 10:36 Height 10.6 Low 5:58 Height -1.4 Sunrise 5:55	High 12:11 Height 11.7 Low 6:29 Height -2.1 Sunrise 5:05		High 6:42 Height 9.0 Low 12:21 Height 6.03	High 6:42 Height 9.0 Low 12:21 Height 6.03	High 7:03 Height 9.6 Low 12:48 Height 0.8 Sunrise 4:53	High 7:03 Height 9.6 Low 12:48 Height 0.8 Sunrise 4:53	High 7:03 Height 9.6 Low 12:48 Height 0.8 Sunrise 4:53
High 1:32 Low 9:2 Sunrise 5:42	2	High 1:46 Height 9.6 Low 8:01 Height 0.2 Sunrise 5:24	High 7:25 Height 8.6 Low 9:58 Height 5.48	9	High 7:44 Height 9.4 Low 1:0 Height 5.15 Sunrise 5:56	High 12:42 Height 10.9 Low 6:48 Height -1.2 Sunrise 5:56	16	High 1:00 Height 11.7 Low -2.0 Height 5:02	High 7:44 Height 9.2 Low 1:25 Height 0.0 Sunrise 6:05	23	High 8:03 Height 9.6 Low 1:48 Height 0.6 Sunrise 4:52				
High 2:15 Low 8:17 Sunrise 5:43		High 2:28 Height 9.3 Low 8:46 Height 0.5 Sunrise 5:23	High 8:16 Height 9.1 Low 2:05 Height -0.2 Sunrise 5:49		High 8:35 Height 9.9 Low 2:26 Height 0.4 Sunrise 5:14	High 1:35 Height 10.5 Low 7:38 Height -0.8 Sunrise 5:56		High 1:35 Height 10.5 Low 7:38 Height -0.8 Sunrise 5:56	High 1:53 Height 11.4 Low -1.6 Height 5:02		High 8:39 Height 9.4 Low 2:19 Height 1.6 Sunrise 6:06	High 8:39 Height 9.4 Low 2:19 Height 1.6 Sunrise 6:06	High 8:58 Height 10.2 Low 2:44 Height 0.3 Sunrise 4:50	High 8:58 Height 10.2 Low 2:44 Height 0.3 Sunrise 4:50	High 8:58 Height 10.2 Low 2:44 Height 0.3 Sunrise 4:50

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COLORADO	1-7 AUG
SOUTHEAST ARIZONA	8-16 AUG
MAINE & NOVA SCOTIA	8-16 AUG
CALIFORNIA EXTRAVAGANZA	10-23 SEPT
UPPER TEXAS COAST	
SEMINARS	2-4, 9-11, 16-18 OCT
GUATEMALA	11-20 OCT
KENYA SAFARI	28 OCT - 19 NOV
YUCATAN	23 OCT - 3 NOV
PALENQUE	3-9 NOV
NATURE PHOTOGRAPHY	12-15 NOV
WESTERN MEXICO	12-23 NOV
HAWAII	24 NOV - 4 DEC
OAXACA	5-13 DEC
EASTERN MEXICO	
NEW YEAR'S TOUR	27 DEC - 11 JAN '82

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