THE SPRING SUMMARY, 1978

March was cool, snowy and sunny. The temperature averaged 36.2°, 1.9° below normal, the lowest for March since 1969 (35.4°). The high mark was 60° on the 21st and the low was 26° on the 2nd and 5th. This "lamblion" month began with the first 10 days all on the cold side, averaging 8° below normal. Mid-month warmed to near normal while the final weeks averaged 2.5° on the warm side. Precipitation was but 2.46", 1.55" under normal, but the driest March only since 1976. Snow totaled 16.1", double the past average of 8.1" and the most in March since 1970 (18.2"). The heaviest snowfall was 9.2", on the 3-4th. Easter Day, the 26th, brought 1.3", the most snow on Easter since the record 7.3" in 1970 and the 4th greatest Easter total in 98 years. Seasonal snowfall reached 85.1", the second greatest in 88 years of record (89.2" in 1947-48). Snow covered the ground continuously for 65 days ending March 19. This broke the 62-day record set in 1976-1977.

April was sunny and dry with near normal temperatures. The mercury averaged 48.8°, just 0.2° above normal and 2.5° colder than last April. The warmest day was the 13th, when 75° was registered—12° above normal. The lowest temperature was 29° on the 3rd, which was the only day below 32° all month. Precipitation totaled only 1.79°; this was the driest April since 1968 (1.72"). Southwesterly winds occurred on the 4th, 17th and 20th.

The month of May was a little on the warm side, with plenty of rain and sunshine. The temperature averaged 59.3°, 0.7° above normal but 3.3° cooler than May 1977. The high was 86° on the 29th. This year's 80° readings did not come until the 20th, unusually late. The low was 37° on the 1st. Rain totaled 4.50", 1.03" over normal. The most in any day was 1.73" on the 15th. Winds from the south, southeast and southwest occurred on the following days: 4, (SE); 6, (S); 8, (SW); 9, (S); 12, (S); 19, (SE); 20, (SE); 24, (SW); the 28th, 29th and 30th (SW).

A waft of particularly early shore-bird and passerine migrants, principally species wintering in the southeastern United States, characterized the latter portion of March and early April; although this pattern far from typified the spring migration as a whole. In terms of pronounced "waves," this year's migration was notably meager—the overall impression being that the bulk of the passerine migrants either trickled through slowly or by-passed eastern Massachusetts altogether. Whereas many species arriving from comparatively proximate wintering quarters during April did so somewhat ahead of schedule, those species returning from the tropics tended to arrive either on schedule or slightly later—and frequently in diminutive numbers. A northeast storm on May 15 brought a waylaid "wreck" of phalaropes to Essex County, though apparently intercepted few other migrant pelagics. Unseasonal northeasters in May will hopefully continue to give valuable insight concerning the migratory periods of the various pelagic species of the continental shelf.

LOONS THROUGH CORMORANTS

Ten lingering Common Loons were reported from the shoal waters of Martha's Vineyard May 27-29 (SSBC-JFK#), with 8 noted as late as May 14 in Clinton (HLM). Six Red-throated Loons were counted at P.I. May 23 (RAF,

RHS, RRV). Red-necked Grebes, although abundant, were more locally distributed this year than last, with maximum counts of 248, 237 and 253 at Manomet Point March 28, April 7 and April 16, 66 at Marblehead April 16-30 (MJK), 140+ at Dennis April 4 (BN), but few elsewhere. Counts of migrant Horned Grebes included 125+ at Marblehead April 9 (MJK) and 118+ at Manomet April 18 (staff), a bird occurred inland at Framingham April 4 (KSH), and one lingered at Dennis until May 25 (Peter Trull). Three Northern Fulmars were seen off Provincetown April 22 (HHD'E), one was in Cape Cod Bay April 29 (VL), and four were seen from shore at Rockport May 15 during the NE storm (RHS). A Sooty Shearwater at First Encounter Beach April 28 (VL) was perhaps a northern hemisphere winterer; otherwise the earliest perceived were 3 from Provincetown May 25 (HLM) and 8 at Martha's Vineyard May 28 (CJ). Single Manx Shearwaters were noted at Marion May 13 (RAF, ICTN), Winthrop May 14 (SZ, CJ), Sandy Neck May 15 (RFP) and P.I. May 20 (HC) and May 28 (HLM). A Leach's Storm-Petrel was seen from Rockport May 15 (RHS) and 5 were noted there the next day (GLS). One thousand Gannets April 13 at Provincetown (R. Prescott) was the largest total noted, while 143 were counted at P.I. May 14 (PMR) and 400 were seen from Rockport the next day (RHS). One hundred Great Cormorants were seen migrating north at Eastham April 15 (CAG), while May stragglers included four immatures at Scituate on the 6th, where one remained until the 20th (WRP), and 3 adults in breeding plumage seen flying past Rockport on the 15th (RHS). A Double-crested Cormorant at E. Harwich March 19 was quite early (BN), while migrants were noted throughout April and during the first week of May, with the maximum counts being 172+ (JB, v. o.) at Littleton and 380 at P.I., both April 13, 350 at N. Scituate April 24 (GRF), 1000+ at Scituate (WRP), 85 at Clinton April 19 (HLM), 22 at Cambridge April 29 (MD) and 75 at P.I. and 20 at Plymouth May 6 (ES, SG #).

HERONS THROUGH WATERFOWL

Great Blue and Green Herons were both reported in near-average numbers; as usual, quantification of these species is impossible due to the arbitrary nature of our reporting procedures, and therefore only drastic fluctuations in totals are ultimately detectable. The following is an enumeration of the other, more gregarious, and therefore more accurately censused, species:

Little Blue Heron:

April 4, 8	Manchester, N. Scituate	1 ad., 1 ad.	PP#, RRV + MJL
April 27, 30	Essex	2, 1	R. King, MB + DB
May 6, 13-20	Duxbury, Nantucket	1, 1 ad.	WRP, EFA + CA
May 14-18, 14-16	Squantum, Bolton	1-2, 1 ad.	LJR#, HLM
May 20, 23	Manchester, P.I.	1, 1 ad.	G. Hotz#, JM

Cattle Egret:

April-May 9 localities 27- indiv. v.o.

Great Egret:

April-May 7 localities 19[±] indiv. v.o.

Snowy Egret:

April-May 4 localities 90[±] indiv. v.o. April 1+11, 24 Bolton, Lancaster 1+1, 1 HLM

Louisians Heron:

April, 26, 29 Nantucket, P.I. 1, 1 EFA + CA, FRH#
May 10, 20, 27 Nantucket 1, 1, 1 CA#, EFA
May 11, 20 Orleans, N. Scituate 1, 1 VL#, WRP

Black-crowned Night Heron:

April 10 Clark's Is., Plymouth 1st egg in nest BAH#

Yellow-crowned Night Heron:

April 16-25, 30 Marshfield, P.I. l ad., l ad. Cynthia Krusell#,

May 23 P.I., Cambridge 2, 1 imm. PI, LJR
May 28 Nantucket 1 imm. CJ

Least Bittern:

May 17 P.I. 1 GLS

American Bittern:

April-May 10 localities 13 indiv. v.o.

Glossy Ibis:

April-May 8 localities 190 indiv. v.o.

The migrating peak of Canada Geese at P.I. was 2000 noted there April 15 (BBC, VA). Brant totalled 500 in Newburyport Harbor throughout April, dwindling to 150 by May 31, and elsewhere 3 flocks totalling 730 birds were counted along the coast from Squantum-Eastham during April. The P.I. Snow Goose flock built up to a maximum of 1130, with 3 "Blue Geese" April 16 (RRV): additional reports included 63 in Framingham April 1 (KSH), 34 at Concord April 3-5 (Dave Hill), 450 with 1 "Blue" over Lincoln April 12 (RAF), 110 the same day at Concord (JB), and 80-90 over MNWS April 11 (MJK). The only concentrations of Gadwall were 28 at P.I. March 22 (v.o.) and 10 at Plymouth March 10 (SH), while "several" pairs were present at P.I., as was one pair at Framingham (RAF), throughout April. Pintails peaked at 120 at P.I. April 20 (v.o.), where one pair was sporadically observed through May as well. Additional likely breeding waterfowl at P.I. were one pair of Green-winged Teals observed throughout May, several pairs of Blue-winged Teals, at least one pair of N. Shovelers and 18 Ruddy Ducks were seen there May 20 (HTW). Two Green-winged Teals were also observed in Scituate May 21 (SSBC, RL). Three "Eurasian" Green-winged Teals occurred in the state this spring: one adult male with 180 Green-winged Teals at P.I. March 23 (WRP, RAF#), and two adult males at Marshfield with 300 Green-wingeds April 2 (WRP#). Intriguing was the discovery of an adult male Garganey at Marshfield

April 1 (GRF#). Although the date of occurrence is suggestive of a bona fide vagrant, captive Garganeys are so numerous on this side of the Atlantic as to preclude true determination of any individual bird's origin. Observers are hereby warned that "apparently wild" behavior on the part of a duck or other bird is by no means proof of its natural origins. As an example, a Ruddy Shelduck (a species of eastern Europe which could not possibly be expected to reach North America on its own) was seen at P.I. in April, 1977. This escaped cage bird was wary in the extreme, was associating with Canada Geese, and could not be approached any closer than 400 yards without flushing. Since proof regarding the origins of potential vagrant waterfowl may only be presented in the negative sense, the dilemma regarding the identification of bona fide vagrants may remain unresolvable. This should not, however, discourage observers from reporting these species which may in fact be actual vagrants; the accumulation of records of a certain species at a likely season (as in the case of Tufted Duck) may ultimately lead to valuable insight regarding the nature of migratory patterns. A sight record of an adult male Cinnamon Teal at Monomoy May 11 was received (Seth Mott); although lacking in corroborating details, it would represent a first Massachusetts record. A female Wood Duck with 12 young was observed April 5 in Norfolk (RMB). Migrant Ring-necked Ducks were somewhat more plentiful than usual in the Sudbury Valley, where a peak of 336 was noted April 9 (RAF). Other totals included 200+ at Carver April 2 (BBC-DD) and 80+ at Lakeville April 9 (WRP), while two lingered at P.I. until May 20, as has seemed typical in recent years.

Canvasback:

April 1-9	Newburyport	120	PMR
Lesser Scaup:			
March 18, 26 April 13, 17	Falmouth, Halifax Halifax, Wayland	50, 2 21, 2	HLJ, WRP WRP, RAF
Common Goldeneye			
March 25, April	9 Newburyport	5000+, 4500+	WRP, RSH
Barrow's Goldene	ye:		
March-April 23	Newburyport	3 (1 ad. r., 1 ad. f., 1 imm.	
Oldsquaw:			
April 9, May 27	Newburyport	4000, 17	RSH#, JWB
Harlequin Duck:			
Thr. March until	E. Orleans, Magnolia	5, 6	v.o., v.o.
March 12-18, 18 March 5-April 30	Marblehead, Martha's V. N. Scituate-Cohasset Gloucester, Rockport	3, 1 1-2 1 m.+ 2 f., 2	MJK, Klunks BAL, MFL MLB, RH + DH

Common Eider:

March 31, April 7 April 8, 29 May 20	Plymouth, Scituate Plymouth, N. Scituate Wollaston Bay	6000, 1500 1000+, 600+ 3000+	HLM, RRV# MBO staff, WRP# WRP
King Eider:			
March 5, March 5- April 8	Plymouth, N. Scituate	1, 2-1	JJC, WRP + RRV
White-winged Scot	er:		
April 27	Nantucket	200	CJ
Surf Scoter:			
April 13, 27	Nahant, Nantucket	25, 30	RHS#, CJ
Black Scoter:			
April 14	P.I.	75	HLM#
Hooded Merganser:			
March May 14	Lakeville	40 indiv. 1 f.	v.o. WRP
Common Merganser:			
March 4, 12 April 8, 9 May 4	Chatham, Newburyport E. Douglas, Brookfield Lincoln		KSA#, WRP# NEM, HLM RAF
Red-breasted Merg	anser:		
May 14, 27-29 May 28	P.I., Martha's V. Monomoy	85, 35 150	HLM, BBC-JFK WRP

RAPTORS

One of the major problems in interpreting field records is evaluating the extent to which larger totals reveal an increase in the number of "observer hours" rather than in the actual bird population. This is particularly true for the hawk reports this spring. Totals for most species were unexceptional during March, but April was a different story. Participants in the Eastern Massachusetts Hawk Watch (EMHW) devoted more than 225 hours to observation during that month. With this organized coverage far exceeding that of previous springs, totals for many species were considerably higher than those recorded during the past five years. Fewer watches were held during May, and that, in conjunction with the normal decline in hawk migration, produced more typical May counts.

Turkey Vulture reports were normal for March (9), with 4 observed in Sharon on the 29th (NTW). Any lingering doubts about the successful

expansion of the Turkey Vulture into the northeast should be resolved by the April total of 75 (cf. 6, 5, 16, 10 & 17, since 1973), a sum which drew little from the EMHW reports. Sixteen were seen at Quabbin on the 9th (KSA, TLL'E), and 7 in S. Harwich on the 24th (VL). Eight singles were reported in May. The first spring Black Vulture report in two years came from W. Harwich on April 24th, when the bird was seen in a flock of 7 Turkey Vultures (VL).

Seven Goshawks were reported during March, and ll in April, including a nesting pair in Framingham and one nesting pair in the Boxford vicinity (RAF). Seven were seen in May. Sharp-shinned Hawks were sparse in March (7), but plentiful in April (180). Twenty-five were seen in Truro on the 21st (BN, VL), and a major flight occurred on April 29th, when 24 were seen at Plum Island (PMR, JSR), and 20 in N. Scituate (WRP). The peak flight of the season occurred on May 1st, when 96+ were counted at P.I. (MHM + v.o.). The May total was 113. Cooper's Hawk reports were quite heartening. Five singles were reported in March, but 23 were seen in April, including 2 in Ashburnham on the 21st (WRP, PMR), and 2 at P.I. on the 29th (PMR, JSR). If these reports are accurate, the Cooper's Sharpshined ratio for the month was greater than 1:8, an extraordinary figure considering the status of the Cooper's Hawk in the northeast. Only 1 was reported in May.

Thirty-six Red-tailed Hawks were reported in March, 26 in April, and only 18 in May, with the peak count, 5, in Marshfield on April 23rd (SSBC. MFL, BAL). Rea-shouldered counts were up substantially; only 10 were reported from March through May, 1977, but this year 10 were reported in March, 23 in April, and 19 in May. Three were seen in Bridgewater on April 13th (GRF), and 3 in Ashburnham on the 30th (PMR, JSR). Encouraging numbers of immature "shoulders" were seen in late May, including 3 in Belmont on the 28th (NC#) and 3 in Essex County on the 29th (NC#). Broad-winged Hawk tallies clearly reflect the more extensive field observation. The first Broad-winged Hawk of the season was reported on April 13th, with 249 birds reported for the month. The biggest April flights were seen in Ashburnham, with 46 on the 21st, 64 on the 23rd and 25 on the 30th (PMR, JSR). Scattered reports indicate that the peak Broad-winged Hawk migration probably occurred between April 23rd and 25th, but the latter two days were not well-covered. Most May Broadwinged Hawk reports came from the Cape, where 60 were seen between Wellfleet and Provincetown on the 20th (BN). Seventy-five, presumably many of them repeats from the previous day, were seen flying in the reverse direction on the 21st (BN), but 40 Broad-winged Hawks were still seen at Provincetown on the 22nd (PTA). Fifteen Rough-legged Hawks were seen in March, including 3 at Bridgewater on the 5th (WRP), but only 1 was reported in April, from Marshfield on the 2nd (DTB), and 1 on the 21st of May, also in Marshfield SSBC, RL).

An adult Golden Eagle was frequenting the W. Newbury region between April 5th-10th (HW, v.o.). Seven Bald Eagles were reported during March, including 5 immature birds seen at Quabbin on the 25th (CJ). An immature Bald Eagle was discovered feeding on fish carcasses on the melting ice at the GMNWR on March 29th (SAP). Early the following morning, another immature Bald Eagle joined the first on the ice, competing with crows and gulls for the scattered fish remains (PMR). Five were seen in April, including 3 at Quabbinon the 9th (TLL'E), KSA), and 1 immature bird was seen at Provincetown on May 27th (WRP).

Eighteen Marsh Hawks were seen during March, including 12 between Wellfleet and Provincetown on the 29th (BN, CAG). The April harrier count reflects the work of the EMHW. Forty-seven were reported during the month, with 6 migrants tallied daily on the 2nd, 9th and 13th (PMR, JSR), and 7 on the 29th (RMB), all at Plum Island. Twenty-two were observed during May. The first Osprey was reported from Wellfleet on March 29th (BN, CAG), with April producing the best spring tally for at least 6 years, 136 (cf. 9, 33, 25, 42,--). Twenty-two migrating Ospreys were observed in Ashburnham on April 17th and 23 on the 21st (PMR, JSR). Six nesting pairs were reported in Westport (SPG). Apart from that breeding colony 10 Ospreys were seen in May, including 8 on the outer Cape on the 20th (BN).

An immature gray Gyrfalcon was seen in Newburyport, on March 12th (RCH#). The bird had apparently just taken a Black Duck, and was discovered flying to Woodbridge Island, where it spent 1 1/2 hours eating the duck in full view of a small army of observers. Peregrine reports have to be considered disappointing, in view of the coverage. Only 1 bird, an adult, was seen during March, at Dennis, on the 14th (VL). Five singles were reported in April and 4 in May, the totals in May being average with 2,5,3,2, and 4 reported during the past five years. Six Merlins, all singles, were observed in March, but there was a good flight in April (53). Eight were seen at P.I. on the 12th, and 12 on the 29th (PMR, JSR). On the latter date, an adult male was observed eating prey while in flight (prey item unidentified). Thirty-eight Merlins were seen during May, including a report of 25 on P.I. on the 1st, the date of the big sharpshin flight (DCA). American Kestrels totalled 32 during March, including 12 migrants at P.I. on the 23rd (RSH). Three hundred thirty-nine+ American Kestrels, an apparent state record, were observed at P.I. on April 12th (PMR). Regrettably, the count did not begin until 8:45 a.m.; casual observers reported a steady stream of kestrels moving up the island as early as 8 a.m.. The published state record was 152, seen in the Sudbury Valley by Karplus on 4/24/47 (LG). Another good flight, 119, was observed on the 29th (PMR, JSR). The April total was 904, of which more than 800 were seen at Plum Island. Forty-five were reported during May, including 29 on May 1st at P.I. (MHM#).

GROUSE THROUGH SHOREBIRDS

Following an apparently prolific breeding season last year (see New England CBC results), two Ruffed Grouse were seen unusually close to urbanization in Belmont April 11 (PRB#). Single Clapper Rails were found at Marion May 28 (GWG) and at P.I. May 29 (JWB, JN). King Rails, however, seem to be gradually withdrawing as a breeding species from eastern Massachusetts. Only two reports were received this spring, one at Harwich May 19 (BN) and one reportedly heard at Lynnfield May 20-27 (BK, RPE#). King Rails have not been recorded from their former breeding ground at P.I. since the building of the wooden boardwalk through the nesting habitat at Hellcat Swamp, and have not been seen at Lynnfield, their second stronghold, since at least 1976. Observers are urged to use extreme caution in identifying large rallids on the basis of Vocalizations, as King and Virginia Rails utter at times virtually identical calls (much more similar than any field guide recording would lead one to believe). Those who make little of the difficulties involved need only be reminded of the "kicker" call, a vocalization uttered by the Virginia Rail, and

most likely other species, which led many outstanding ornithologists astray for some 50 years. It would be most unfortunate, and perhaps acutely embarrassing, if the King Rail would disappear from before our eyes as a local breeder with no one being the wiser. Most bizarre of all the early migrants was a Black Rail picked up dead on Nantucket March 31 (Bruce Bartlett, specimen to EFA). Two of the firmly established Nantucket American Oystercatchers arrived there on the unprecedentedly early date of March 24 (GF#). At Monomoy, 14 oystercatchers were present throughout May (v.o.), while two at Plymouth Beach May 20 (WRP) and 2 at Nauset throughout May (v.o.) may have been prospecting for future nesting sites. One hundred Semipalmated Plovers at Newburyport May 14 (MFC. BAZ#) represented the only peak count for that species, and 55 Killdeers in the Newburyport-P.I. area March 23 (RSH) was inconsistent with the general arrival noted throughout the state. Reports of three Golden Plovers were received, none accompanied by details definitively eliminating Greater Golden Plover, a species whose occasional occurrence in Massachusetts must be suspected. They were: one at Scituate April 19 (GRF) and singles at P.I. May 6 and 23 (SG, DTG). The Eurasian Curlew discovered in February on Menemsha Pond, Martha's Vineyard, was last seen by HLJ on March 18. Three species of shorebird arrived remarkably early: a Lesser Yellowlegs at Newburyport March 12-25 constituted the earliest record as did a Pectoral Sandpiper at Newburyport the same day (WRP#). Finally, a Short-billed Dowitcher was found at P.I. March 23 (RSH, MJK). Two alternate plumaged Long-billed Dowitchers at the P.I. basin April 15-23 (WRP#) raised eyebrows and suggested the possibility of last winter's birds returning. Although unprecedented in Massachusetts, April Longbilled Dowitchers have occurred in Maine on at least two separate occasions, including one bird at Mt. Desert Island this year. Two Reeves and 1-2 male Ruffs occurred in Newburyport Harbor April 29-May 12 (SAP, RAF, Bonnie Gard+#) and an alternate plumaged Curlew Sandpiper was there May 18-20 (AAC#). Note in particular the high counts of White-rumped Sandpipers this spring at Newburyport and Monomoy, eclipsing all previous spring totals in Massachusetts.

Black-bellied Plover:

May 12, 14, 21	Newburyport	380, 1200±, 4000	RRV, SAP
May 28	Newburyport, Monomoy	2500, 1500	HLM, WRP#

Ruddy Turnstone:

May 14, 17;18 Newburyport, Squantum; 6, 10; 1 RRV, CJ; HLM Bolton

May 20, 28 Thompson's Is., Monomoy 35, 400 JM, WRP

American Woodcock:

May 14 South Carver f. with young KSA

Common Snipe:

April 9, 11 Newburyport, Concord 33, 32 RSH, RAF
April 1, 2, 12 Marshfield, Lancaster, 30, 20, 127 WRP, NEM, BB
Bolton
May 18 on Whitman "pr. prob. WRP

Whimbrel:

willimprer:			
April 21-25 May 7-23	Chatham 4 localities (3 Cape Cod)	7 4 indiv.	BN# v.,o.
Upland Sandpiper:			
April 17 on, 22-24 May 10, 12 May 16-20	Marshfield, Nantucket Duxbury, Eastham Lancaster	3-6, 2-3 6, 2	BAL#, SAP JWL#, RAF HLM
Solitary Sandpiper	:		
April 13-May 21	8 localities	17 indiv.	V.O.
Willet:			
May 14, 20	Squantum, Plymouth;	1, 1; 1	SZ, WRP; SZ
May 21-28, 27-29	Squantum Newburyport, M.V.	3, 1	GWG, JFK#
Greater Yellowlegs			
April 29, May 12, 13, 14	Newburyport	80, 140, 175,	175 RRV#
Lesser Yellowlegs:			
April 29 May 12, 13; 30	Truro, Newburyport Newburyport; Salisbury		BN, CAG; RRV# RRV#
Red Knot:			
May 12, 13, 14 May 28, 29	Newburyport Monomoy, Scituate	30, 15, 10 1 (low!), 4	RRV# WRP
Purple Sandpiper:			
	Lynn, P.I. P.I.	300, 30 6	RHS, RRV JM
Pectoral Sandpiper	:		
April 9, 15 May 7	Newburyport, Bolton Essex, Eastham	56, 13 3, 12	PMR, HLM MA, SZ
White-rumped Sandp	iper:		
May 7; 12, 14 May 11; 28	P.I.; Newburyport Monomoy	7; 150, 250 150+; 30	WRP#; RRV, RSH# BN, CAG; WRP
Least Sandpiper:			
April 29-30; May 12, 14	Newburyport	1; 2000, 2500	GWG; RRV

Curlew Sandpiper:

May 18-20 Newburyport 1 AAC#

Dunlin:

May 6, 14 Duxbury, Newburyport 250+, 500 WRP, RRV

Short-billed Dowitcher:

April 21, 23 Eastham, WBWS 1, 1 VL#, BN April 29-31 Newburyport GWG May 12-14, 18 Newburyport, Bolton 65, 250+ RRV#, Eric Salmela#

Long-billed Dowitcher:

April 15-23 P.I. 2 WRP, RRV#

Stilt Sandpiper:

April 27 P.I. 1 JJC

Semi-palmated Sandpiper:

May 12, 14; 21 Newburyport 15, 200; 2500 RRV#; SAP May 18 Bolton ES

Hudsonian Godwit:

May 25-26 Bolton 1 1st yr. HLM#

2nd Worcester County record

Ruff:

April 29-May 12; Newburyport; Essex 1-2 f.; 2 f. SAP, RAF#; RCH

April 30 May 10-14 Newburyport 1-2 Bonnie Gard+#

Sanderling:

May 13, 28 Lynn, Monomoy 400, 1800 RHS, WRP

Red Phalarope:

May 15 Rockport 15 RHS

Wilson's Phalarope:

GMNWR, Bolton, New- 1 f., 1, 1 f. PG, ES, HW# May 10, 17, 20

buryport

Newburyport, Topsfield 1 f., 1 f. May 23, 24 DTB, RAF#

Northern Phalarope:

Scituate, Rockport, 12, 250, 461 May 15 WRP, RHS, RFP

S.N.

Northern Phalarope cont .:

May 19

May 16, 18 Rockport; Nahant 500+; 2000 GLS; RSH, MJK Boylston

HLM

JAEGERS THROUGH ALCIDS

Two Parasitic Jaegers were seen from Monomoy May 14 (RAF, ICTN), and 9 were seen the same day from S.N. (RFP), while a single Pomarine was reported from Nantucket May 17 (Chester Faunce fide EFA). Six Glaucous Gulls were at P.I. March 21 (JG), where one 2nd-year bird remained until at least April 22 (WRP#). Iceland Gulls numbered 38 at Gloucester March 21 (LC), 50+ at Newburyport March 12 (WRP), 30 were there throughout April (v.o.), and two immatures remained at P.I. until at least May 24 (RRV#). An adult Lesser Black-backed Gull was found at Nantucket April 22 (SAP) for the second island record. Ring-billed Gulls in Newburyport Harbor numbered 400 March 12 and 800 March 25 (WRP), and Black-headed Gull reports included 2-3 in Newburyport Harbor throughout March (v.o.), one adult at Falmouth April 15 (MBO staff), an adult at Newburyport May 14 (BAL#), and a sub-adult at Monomoy May 28 (WRP). An immature Laughing Gull at the Hyannis Airport March 17 (VL) may well have been an undetected winterer, but 5 adults at Chatham March 30 were clearly early arrivals (HCR). Fifty Laughing Gulls were at Nahant May 27 (BBC-WF), and four additional migrants occurred along the outer coast May 13-20 between Newburyport and Boston. Little Gulls included two at Newburyport March 18-28 (v.o.), building up to a maximum of 8 adults there May 7 (RRV) with apparently no further influx later in May, one at Provincetown April 23 (MBO staff) and an immature at Monomoy May 11 (BN, CAG). An adult Sabine's Gull was seen from Sandy Neck during the NE storm May 15 (RFP). As has been the case for the last three years, 40 Black-legged Kittiwakes, predominantly sub-adults, were noted on the flats at Monomoy throughout May (v.o.); storm-blown migrants included 275 at Rockport May 15 (RHS). Terns at Monomoy numbered 1500 Common and 500 Roseate May 14 (RAF + ICTN), and 500 Commons with 300 Roseates comprised the breeding population at Bird Island, Marion, May 13 (RAF, ICTN). In addition, 8 Arctic Terns were seen at Monomoy May 28 (WRP). Twenty Common Terns were noted from Boylston on May 17 and 6-8 Roseate Terns were noted there--this being the 3rd Worcester County record. A Forster's Tern was at Chatham March 30 (BN, HCR), this being the third consecutive early spring Forster's Tern to appear; the 1976 and 1977 individuals were both in Newburyport Harbor. A Caspian Tern was at Newburyport April 22 (WRP#), one was at N. Scituate April 28 (RSH) and a third was at Newburyport May 13 (RRV#). Six wintering Black Guillemots were still at Provincetown March 11 (BN), and stragglers included one at N. Scituate May 6 (WRP) and one at P.I. May 17 (GLS). Single Common Murres appeared at Provincetown April 1 (BN, CAG) and at Nantucket in the "end of May" (EFA). Surprising were 7 Thickbilled Murres reported near Stellwagen Bank April 17 (R. Prescott). Single Black Terns were at Marion May 13 and Monomoy May 14 (RAF, ICTN).

CUCKOOS THROUGH WOODPECKERS

Yellow-billed Cuckoo:

May 7-31

9 localities

12 indiv. v.o.

Black-billed Cuckoo:

May 7-31

10 localities

16 indiv. v.o.

Only rarely discovered nesting due to their elusive and retiring nature, two Long-eared Owls were found at their nest once again in Barnstable where they were present throughout March (RFP). Furthermore, the four seen at Martha's Vineyard May 27-29 strongly suggest a nesting pair with 2 young (JFK#).

Barn Owl:			
3/18-5/29	Martha's Vineyard	1	V.O.
Great Horned Owl:			
4/17,5/7	Saugus, Peabody	2ad, & 2yg.,	CJ,RSH
]	ad.& 2 downies	
5/14	Melrose	l yg.	CJ,SZ
Snowy Owl:			
3/23,25	P.I., Squantum	1,1	MJK#,EAM
Barred Owl:			
thr.Mar.,4/18	Boston, E. Middleboro	1,1	v.o.,KSA
4/27,5/8	Boxford, Boston 2	prs.on nests,1	RAF,HC#
Long-eared Owl:			
3/1-21,thr.Mar.	E.Lexington, Barnstab	le 2,2	JMA, RFP
3/18,21	Martha's Vineyard, Ma	rblehead	
		1 decd., 1	HLJ#,MJK
4/12,5/7	MBO, Manchester	lb.,1	staff,HW
5/27-29	Martha's Vineyard	14	JFK#
Short-eared Owl:			
thr.Mar.,3/25	Bridgewater, P.I.	4,3	v.o.,BBC-WVC
4/11-12,13	N.Scituate	1,1	PT,GRF
5/27-29	Martha's Vineyard	1	JFK#
Saw-whet Owl:			
thr.Mar.	Eastham, Brewster, Bar	mstable 2-3,2,1	BN
4/8,12	MNWS	1	CB#
5/7	Rockport, Truro	lb.,1	ON,SZ#
Whip-poor-will:			
4/18	Eastham	1	CAG

Virtually inexplicable was the occurrence of an as of yet unidentified Selasphorus hummingbird in Newton April 15-17 (Alison McGowan). The observer, and owner of the yard in which it fed, was quite unfamiliar with the bird, but took several excellent photographs, from which a specific identification should be readily forthcoming. The bird is either a Rufous or an Allen's Hummingbird, the range of the former favoring it as the most likely of the two to occur in the east. The first Ruby-throated Hummingbird reported was in Mt.Auburn Cemetery April 28 (JG); peak numbers were noted late in the month with 14 and 10 in Mt.Auburn on May 22 and 23, respectively (RHS).

Pileated Woodpecker:

Pileated Wood	pecker:			
Mar.			5 in	dividuals reported
Apr.	10 locali	ties	11 i	ndividuals
May	7 localit	ies	8 in	dividuals
Red-bellied Wo	oodpecker:			
5/6,17	Natick	m. &	f. on nest,	EWT
		usurped b	y Starlings	
5/24-26	Eastham	,	1	Bartlett's fide BN

Red-headed Woodpecker;

thr, Mar, , 12-31 Gloucester, Weston 1,1 V.O. LJR 3/25, thr, Apr. Woburn 1,2 GWG & V, O, 5/3,7,14 Gloucester, Woburn, P.I. 1,1,1ad, JMacD, GWG, HLM 5/12,20 S, Easton, Lynnfield lad, ,lad, Trish Horwart, BK# Yellow-bellied Sapsucker: 3/18 Martha's Vineyard B.Klunk# 4/12-5/3 ll localities 15 individuals V. O. Black-backed Three-toed Woodpecker; Dennis 1 . H&D Baines

PASSERINES

The 1978 migration is perhaps best exemplified by the results obtained by the Manomet Bird Observatory; they banded a total of 2,098 birds of 96 species - fully 33% below the total for the same period in 1977. More or less pronounced wave-days occurred on May 5-6, 12-13, and 19-20, but the number of birds present at a given locality on each of those days, with the exception of the 20th, was decidedly below average. Overshooting warblers of a southern affinity were notably absent -- no Kentucky Warblers were observed, and the only Cerulean, as well as both of the Yellowthroated Warblers, occurred peculiarly during the very last days of May. Yet other southern vagrants, such as Blue Grosbeak and Summer Tanager, which typically occur earlier in the season, were recorded in near-normal numbers and at a typical season. Furthermore, a pronounced incursion of locally-breeding, later migrating species such as Indigo Bunting and Rosebreasted Grosbeak was obvious in the latter two weeks of April. The overall implication, if one may be extracted from such a seemingly voluminous assortment of records, is that meteorological conditions in late March and late April were particularly conducive to inciting migrating passerines in the southeastern United States to embark upon their flights and to continue moving north, whereas in May, they were not. Most species tended to either trickle through in small numbers throughout their typical migrating period, or bypass our region altogether.

FLYCATCHERS THROUGH THRUSHES

A Scissor-tailed Flycatcher appeared for one day only in Rochester May 3 (Jane Stair#). MBO banded 7 Acadian Flycatchers May 20-June 5, and one other was seen and heard at P.I. May 21 (PMR). There seems little room for doubt that this species will become firmly established as a breeder on the coastal plain within the foreseeable future. The distribution of Willow and Alder Flycatchers within the state continues to perplex, with few if any consistent patterns coming to light. Habitat separation does not seem sufficient as an isolating mechanism locally, unless more rigorous habitat analysis has more to reveal. Willows were recorded at GMNWR, Lynnfield, Milton, W. Newbury, Ipswich, and Newburyport May 20-31, while Alders were recorded from Ashburnham, W. Newbury, Lexington, Belmont and Cambridge May 27-31, Note the early Purple Martins on Cape Cod. Two separate Fish Crow nests were located in Mt. Auburn Cemetery during April and May (RAF, RSH). As wild food crops dwindled towards the end of the winter, previously undetected Varied Thrushes began appearing at feeders including one at Ayer throughout March until April 3 (Robin Yates#), one at Melrose throughout March (from Dec.) (JA#), one at Bridgewater Mar.1-19

(Mrs,McGlarnery #), one female at Swampscott March 4 (THA), one at Yarmouth-port April 1-2 (fide RAF), Reading April 2-4 (Edward Finnerty), 1 male at Berkely April 3 (F.Sweeney), Avon April 1-18 (M.Gormley) and Framingham April 13 (S.Tully), Hylocichla thrushes were generally scarce, or undetected. Following is a selective enumeration of the records:

Great Crested Fl	vestcher:			
5/11	Dover, Newburyport		1,1	FRH ,RPE
Yellow-bellied F			-,-	7 101 117 12
5/21,23,27	P.I.,Mt.Auburn,P.I		4,1,1	RHS, v.o.
Acadian Flycatch			7,11	1410, 7.0.
5/20-6/5	MBO		7b.	Staff
5/21	P.I.		1	
			Т	PMR
	: (entire reports)		2.0	-waa
5/9,10	Mt.Auburn		1,2	RHS,ESo
5/14,16	Middlesex Fells, Bo	xiora	1,4	GWG,RHS#
Eastern Wood Pew			151.6	
5/21,23	Scituate, E. Middleb		1,1	SSBC-RL,KSA
5/26-27		bulk of m	igrants	
Olive-sided Flyc				
5/20-27	5 localities	5-6 rep	orted	V.O.
Horned Lark:				
3/23	Newburyport-P.IS	alisbury	125	RSH,MJK
Tree Swallow:				
3/19,22,23	Eastham, Chatham, P.	I.	1,1,2	PWC,SAP,RSH
Purple Martin:			4.50	
3/22,26	Chatham, Centrevill	e	1,1	SAP,VL
5/15		in Worc.		HLM
Bank Swallow:			,	This is
4/16,17	W.Newbury, Wayland		1,1	RRV#,RAF
4/17,22	Westport, Concord		1,5	RRV#,RAF
5/14	Clinton		200	HLM
Rough-winged Swa			200	11184
4/13,15	Halifax, W. Newbury		2,1	WRP,WRP
4/17,21	Wayland, P.I.		2,4	RAF, RMB
Barn Swallow:	wayland, r. 1.		2,4	NAI, NMD
4/12		acres 1	ammi real	
		general	arrivar	
Cliff Swallow:				
4/11	Lynnfield		1	NC
5/12,13			-building,5	
5/27	Eastham, P.I.	, "nestir	ng colony"	WRP,PMR
Fish Crow:				100000000000000000000000000000000000000
3/11,12	A.A., Weston		4,4	RPD, LJR
4/10			sting mat'l)	
thr.Apr.,5/1+2			nest(seprte)	RHS, RAF
5/10,14,20	Abington, Jamaica H	Plain, Hand	over	
			2,1-2,6	WRP, CJ#, WRP
Common Crow:				20 120
5/11	W.Roxbury		1692	RMB
Boreal Chickadee				
4/2:29	W.Boylston; N.Scitu	ate Boxf	ord	
1-1-6			1,1,1	NEM#;WRP#,HTW#
5/3	Rockport		lb.	ON
111	no supor o			V-1

Red-breasted Nu	thatch;		
thr.Apr.	Mt.Auburn p	r.building nest	MJL#
5/29	Lakeville	pr. nesting	WRP
Brown Creeper;			
Mar,	birds on territ	ory by end of mor	nth
May	ll localities 1	2 individuals	v.o.
House Wren:			
4/19,21	Lexington, Winchester	1,1	MJL, GWG
4/28,29	Middlesex, Lancaster	1,1	NBK HLM
Winter Wren:			a di
4/12;13	Wayland, P.I., Salem	1,1,1	DL;JJC,RSH
4/13-14,16	MNWS,P,I,	1-2,1	MJK,PMR
5/1	P.I.	1	MLB DB
Carolina Wren:			Annual Cases
4/9,17	Whitman, Westport	1,3	SH,RRV#
5/6,27-29	Westport, Martha's Vine	eyard 3,20	RHS ,JFK#
Gray Catbird:			
3/8	Martha's Vineyard, Lexi	ington 1,1	G&H Champoux, PS
Wood Thrush:			
5/7	Mt.Auburn, MNWS	1-2,1	OK, CB
5/10-12	general arriva	al on breeding lo	calities
Swainson's Thru			
5/20,23	Thompson's Is., Mt. Aubi	ırn 16,9	BBC-JM,RHS
5/20	Mt.Auburn, Dover	4,6	HHD'E, FRH
Gray-cheeked Th	rush:		
5/20	Thompson's Is., Nahant,	Dover 1,5,1	JM#,HTW#,FRH#
5/22-23,27	Mt.Auburn, Ashburnham	1,1	JB, RHS, HLM
Veery:			
5/7-8	first an	rivals	
Eastern Bluebir	d:		
Mar.	4 localities 10	individuals	V.O.
Apr.	5 localities 12	individuals	V.O.

GNATCATCHERS THROUGH VIREOS

The multitude of Northern Shrikes lingering late into April this year amplified more than ever the difficulty in reviewing the reports of early spring Loggerhead Shrikes north of the southeast coastal plain. Of the five reports received, two were in Essex County, and none were accompanied by substantiated details or even acknowledgement of rarity. Please include details with reports of this rare and difficult to identify species.

Blue-gray Gnato	eatcher:			
4/15-29	9 localities	20 indi	viduals	V.O.
5/2-24	7 localities	15 indi	yiduals	V.O.
Golden-crowned	Kinglet:			
4/1	MNWS	12 (max	cimum count)	CB
5/27	Mt.Watatic	5 (bre	eders?)	HLM
5/29	Lakeville	1-3 prs.or	territory	WRP
Ruby-crowned Ki	inglet;			
4/13,16,25	P.I., Salem, MNWS		30,50,60	JJC,PW,CB
5/20	Newburyport		1	BBC-HW
Water Pipit:	-			
3/25,4/2	Provincetown, La	ncaster	1,15	JG#,NEM#

4/12,17	Bolton,S.Dartmouth	11,1	HLM, DB
5/19,21	Framingham	2,1	RAF
Northern Shrik	e;		
Mar4/13	10 localities	17+individuals	V.O.
4/13	P,I,	5	NBK#,MBO#
Loggerhead Shr	ike:		
3/25	Essex	1	PP
4/1+9,8	Wellfleet, Eastham	1+1,1	BN, CAG
4/9,5/3	P.I., Wellfleet	1,1	R.Prescott, CAG
White-eyed Vir	eo:		
4/30,5/13	MNWS, Newburyport+P.	I, 1,1+2	CB,WRP#+RCH#
5/21,27	Marshfield, W. Newbur	y 1,1	SSBC-RL,GLS
5/30,31	Framingham, Ipswich	1,1	RAF & KSH, JWB
Yellow-throate	d Vireo:		
5/12,27	Mt.Auburn,P.I.	1,2	BBC-JR,SJC#
5/28	Newton	1	MVS, Tenney Lehman
Solitary Vireo	:		
4/25-5/12	7 localities	45 individuals	V.O.
5/11,12	Newburyport, Mt. Aubi	ırn 12,10	RPE,PMR
Philadelphia V	ireo:		
5/20	P.I., Newbury	2,1	BBC-HW, HLM

WARBLERS

The only parulid apparently arriving early due to the weather patterns affecting so many other species was a Northern Parula found dead at Westport April 1 (Linda Liddy). An adult male Townsend's Warbler was discovered in Mt.Auburn Cemetery May 4 (MR,CJ,SZ & v.o.), where it was subsequently seen by many and identifiably photographed in color. This is the first documented state record, the only others being a sight record from Naushon Island Nov.26,1927, and of a bird purportedly banded on Nantucket in September circa 1966. A remarkable four Orange-crowned Warblers were reported from the Newburyport area May 20 (HW#).

Black-and-white	Warbler:		
4/29,30	Mt.Wachusett, E.Middle	boro 1,3	IG#,KSA
4/30	Newbury, Plymouth	1,4	HLM, RHS
Worm-eating Wart	oler:		
5/10,13	Dover, P.I.	1,1	J.Hallowell, RPE
5/23-on	Weston	1	LJR,EWT#
Golden-winged Wa	arbler:		
5/13-on,19-on	W.Newbury, Framingham	& Ashland,	
	Lancaster	1-4,1+1,1	RCH#,RAF#,HLM
5/20,25	Lynnfield, Dover	1,1	BK,FRH
5/29	Ipswich	1	BBC-IG
Blue-winged Wart	oler:		
5/12-21	5 localities 9	+ migrants	V.O.
5/27-29,28	Martha's Vineyard, W.N	ewbury 12,9	JFK#,RSH+MK
"Brewster's Wart	ler";		
5/28	Framingham	1 m,	RAF
Tennessee Warble	r:		
5/12-28	8 localities 1	8 individuals	V.O.
5/23	Mt.Auburn	35	RHS#

5/18,20 Mt.Auburn,P.I.		
	1,2	NW+RPE,PMR
5/20 Newburyport, Mt. Au	iburn 4,1	HW#,RHS#
Nashville Warbler:		
5/6-20 8 localities	15 individuals	V.O.
5/9 Mt.Auburn	5	ES
Northern Parula;		
4/1,27-30 Westport,Mt.Aubur	n 1 dead,1	L, Liddy, P, Spencer#
Yellow Warbler:	400 000	
5/13,21 W.Newbury,Saugus	40,20	RSH,CJ
Magnolia Warbler:		
5/11-28 12 localities	50-55 individuals	V,0,
Cape May Warbler:		
5/10-23 4 localities	12 individuals	V.O.
Black-throated Blue Warbler:	2.2	
5/7-23 12 localities	28 individuals	V, O,
Yellow-rumped Warbler:		
4/17,30 Saugus,Mt.Auburn	20,40	CJ,CCM
5/8,12 Wayland, Mt. Auburn	75,50+	RAF,JR#
Fownsend's Warbler:		
5/4 Mt.Auburn	l ad.m.	MR,CJ,SZ,& v.o.
Black-throated Green Warbler:		
4/29-30 Boxford	1-2	RHS#
5/6-29 12 localities	48+ migrants	V.O.
Cerulean Warbler:		
5/27 Mt.Auburn, Lancast	er 1,1	LJR+FRH#,HLM
Blackburnian Warbler:		
5/9-28 9 localities	21 migrants	v.o.
(ellow-throated Warbler:		
5/22,30 Mt.Auburn,MBO	1,1b.	LJR+EWT, staff
Chestnut-sided Warbler:		
5/9-28 9 localities	20 individuals	V.O.
Bay-breasted Warbler:		
5/13-27 7 localities	50+ individuals	V.O.
5/20,23 Mt.Auburn	10,30	RHS#
Blackpoll Warbler:		
5/11-on 16 localities	120+ individuals	V.O.
5/23,26 Mt.Auburn	35,20	RHS#
Pine Warbler:		
4/6-25 8 localities	28 migrants	V.O.
5/27-29 Martha's Vineyard	25	JFK#
Prairie Warbler:		
	nest w/2 eggs,	
	est w/4 eggs	RMB
Palm Warbler:		
4/11-5/3 6 localities	105+ individuals	V.O.
5/10,20 Mt.Auburn,Milton	1,1	RMB,JO'R
venbird:		
	25 individuals	v.o.
5/7-on		
5/7-on forthern Waterthrush:		
5/7-on forthern Waterthrush: 4/23,29 MNWS,Milton	1,1	MJK,MJL
5/7-on forthern Waterthrush:		MJK,MJL KSA,SPG
5/7-on forthern Waterthrush: 4/23,29 MNWS,Milton		
5/7-on forthern Waterthrush: 4/23,29 MNWS,Milton 4/30 E.Middleboro,Fall	River 3,1	KSA,SPG

4/25-31,29	Mt , Auburn , Lancast	er	2,1	KN#,HLM	
	g pairs in Ashland,			er,Lancaster	
Mourning Warbler	:				
5/21-31	6 localities	8 in	dividuals	y, o,	
Common Yellowthr	oat:				
5/9,13,21	Mt, Auburn, Milton,	Saugus	3,16,40	RHS, RCV, CJ	
Yellow-breasted					
5/13	Bolton		1	N, Sampson, fide H	LM
5/18	Mt.Auburn		1	fide CJ	
Hooded Warbler;					
4/22-30,5/11	MNWS,Mt,Auburn		l m., 1 m.	CJB#,SD#	
Wilson's Warbler	';				
5/11-28	14 localities	24 in	dividuals	V.O.	
Canada Warbler:					
5/12-on	12 localities	38 in	dividuals	V.O.	
American Redstar	t:				
5/10-on		70 rej	ported	v.o.	
5/12,20	Mt.Auburn, Newbury	port	12,17	PMR,HW#	

BOBOLINK THROUGH TOWHEE

Four hundred migrant Bobolinks at Plum Island May 13 was an exceptional total (PMR) and 280 were also counted in Framingham May 19 (RAF). Spring Yellow-headed Blackbirds are a comparative novelty in Massachusetts; the three adult males this spring were: one at Newburyport April 10 (R.McHale), one at Melrose April 11-12 (Beverly Stewart), and one at Medford Apr.14-23 (Mary Kelley). Of 10 spring Yellow-headed Blackbirds in Massachusetts since 1973, 2 have been adult males, 2 females, and 6 unspecified, in comparison to the vast preponderance of immature males that occurs here in the fall.

Orchard Oriole:			
5/7;11-20	Mt. Auburn, Waltham	;Nantucket 1 im.m.,	
		1 ad.m.; 1-2 im.m.	WRP RHS; EFA
5/13;19,22	Rowley; Woburn		
		1;1 im.m.,1 ad.m.	RCH#;GWG
5/20	Whitman, Nahant	1,1	WRP,BK
5/27-29,28	Martha's Vineyard	, Chatham	
28.12.0 - 21.50.0		1,3(1 im.m.,2 f.)	JFK#,WRP#

The larger flocks of migrating Rusty Blackbirds were 20 in Lancaster March 26 (HLM), 32 at P.I. April 9 (PMR), 50 at Saugus April 9 (CJ), 45 at Lancaster April 14 (HLM), 50 at Provincetown April 30 (CAG), and 35 at Wayland May 4 (RAF). A male Brewer's Blackbird at Nantucket April 3 was surprising as to date (EFA#). Four male Summer Tanagers were noted: one at Wellfleet April 13 (fide WWB), one at Yarmouth in mid-April (fide WWB), one at Melrose and one at Nahant, both May 20 (JMA,HC#). From April 20-31 at least 7 Rose-breasted Grosbeaks were found on Cape Cod; additional records were one at Nahant April 22, one at Manomet April 29 (RRV#), and one at Plymouth April 30 (WRP). Blue Grosbeaks numbered 11 during the period April 14-May 11, all along the immediate coast from Gloucester to Cape Cod. Similarly, no less than 20 Indigo Buntings arrived on Cape Cod from April 13 on (fide BN); 8 others were scattered along the coast north to P.I. during the period April 20-28 (v.o.). An adult male Painted

Bunting was present at a feeder in Hyannis until at least March 5 (Mr. Mycock#). Dickcissels included one at the Hyannis feeder March 1-19 (Mycock#), one in Walpole April 23-26 (Stein), and one at Nahant which was present until May 1 (William Crawford). Evening Grosbeaks were noted migrating from mid-April through mid-May, with maxima of 115 at Framingham May 6-10 (RAF), 47 at Lexington May 7 (JMA), and 30 at Westwood May 2 (Mrs. Mawn). The May total for migrant Purple Finches was 75 from 8 localities, with none reported from Cape Cod. Pine Grosbeaks remaining into March included approximately 140 individuals from 14 localities (v.o.). One to three Hoary Redpolls were reportedly present at Beverly March 5-7 (GLS), and 2-3 in Hyannis March 11 (JJC), although, remarkably, neither included substantiating details. Observers are urged to exercise particular caution in identifying this species. As the degree of hybridization between Hoary and Common Redpolls in their region of sympatry is high, intermediate individuals are frequent. Although a "pure" Hoary Redpoll is quite unmistakable upon close examination, other individuals not so strikingly marked quite muddle the picture.

Common Redpoll:

thr.Mar.	Woburn	100	GWG
3/2,7	DFWS, Beverly	105,20	RAF,GLS
3/16,4/14	Stoneham	140,100	MM, MM
4/19	Woburn	30	MM

Of the hundreds of Pine Siskins present through mid-April and the stragglers into May, 4 nests were found in Waltham and 3 in Cambridge April 9 (RHS), and a pair with 3 young was noted in Middleboro May 14 (KSA). Similarly, Red Crossbills persisted late into the season, and a flock of up to 12 birds in Framingham throughout May (RAF), and 2 birds, including a singing adult male, at P.I. May 24 (RRV#), were each suspected of breeding, although this supposition could never be proved. The largest single flock was of 50 in Lynn April 1 (RSH). White-winged Crossbills were noted from Mt.Auburn on April 9 and 23 (TMV). Rufous-sided Towhees arrived almost two weeks behind schedule on their nesting grounds in Middleboro on May 8 (KSA), but a general arrival of migrants was noted elsewhere April 17-30.

SPARROWS THROUGH SNOW BUNTING

Migrant Fox Sparrows were particularly numerous as spring migrants following a meager fall flight and winter populations, whereas Lincoln's Sparrows were particularly scarce, reflecting a pattern exhibited by many northerly breeding passerines in May.

Savannah (Ipswic	eh) Sparrow:		
3/25	P.I.	1	WRP#
Grasshopper Spar	row:		
5/27,27-29	Truro, Martha's Vineyard	1,10	WRP, JFK#
Sharp-tailed Spa	rrow:		
5/14	Monomoy	1	RAF, ICTN
Vesper Sparrow:			
3/21	Newburyport	1	JG#
4/11-on;4/16	P.I.; Framingham	2-6;3	NC#; RAF, KSH
4/17,18	Westport, Cambridge	4,1	RRV, FB

4/15,22	Woburn, S. Wellfleet	1,10	GWG, HHD'E
4/23,29	Marshfield, Lancaster	1,2	MFL HLM
Lark Sparrow;	**************************************		6,000
until 4/16	Needham 1	at feeder	D.Hottle
Tree Sparrow:			
4/22,27	MNWS, Wayland	1,1	MJK, RAF
5/9,10,17	Medfield (well describ	ed) 2,2,1	RMB
Chipping Sparrov			2.5.00
3/18		le winterer)	RFP
3/13;4/17,18	Lynn; Sudbury, S. Wayland		RSH; RAF
Dark-eyed Junco:		- 1 T - 1 T	25701 A. 2557
5/10	Mt.Auburn	2	BBC-E.Soja
White-crowned Sp			220 240 00 -
	Danvers	2	E. Pyburn
5/26,27	Stoneham	1,2	MM
5/11-23		ividuals	v.o.
Fox Sparrow:			7.0.
4/1	S.Peabody, Norwell	12,8ъ.	RSH, BAL+MFL
4/4,10	Stoneham, MBO	20,10+	MM.staff
4/13,20	Mt.Auburn,MNWS	40.1	LT,RSH
5/4	Mt.Auburn	1	D.Arvidson
Lincoln's Sparro	w:		
5/14,20	Boxford, Manchester	1,2	SSBC-BAL, G. Hotz#
5/20	P.I.,Boxford	1,1	IG,A.Scott
5/24	P.I.	1	RRV#
Lapland Longspur			
3/11,18	Spencer, P.I.	30,200	D.Dineen,IG
4/1,15	P.I.,Salisbury	50,26	BBC-Sid Wilson,
			DD+DB
Snow Bunting:		9	
3/13	P.I.	160	RMB
4/9	P.I.	20	PMR

LIST OF CONTRIBUTORS

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TIDE CHART

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

1.5 1.5	Morning		BOSTON	Afternoon	1	Morning	BOSTO	N Aft	ermoon	Mon	poing	BOSTON	Afte	moon		Morning	BOSTON	Afte	rhoon
1				High 6.1	6 H							SUNDAY	High		High		SUNDAY	High	11.49
12 1 1 1 1 1 1 1 1 1	- 11	1.58	12		_ 4	ow 6.0			6.30	Low	8.2	27	Low		Low	5.23	2	Low	5.39
1-24		0.5	12		19 N	eight!	1.0 AU	Reight Sunses	6.38	Height	5.03	41	Height Sauset		Height Sunrice	5.12	. •	Neight Suncet	6.13
1	. 6	5.49	MONDAY	High 7.1		igh 12.4				High	7.12				High		MONDAY	High	12.10
1.1. 1.1.		9,1	1/1	Low 12.5	9 4	ow 6.5	58 71	Low	7.22	Low	12.57	28	Low		Low		Δ	Low	6.19
1	. "	-0.1 4.48	7.2	Height C.	13 N	merice d	37	Height Sunset			5.04		Sunset.	- 6.26		5.13	-	Height Sunset	-0.3 6.12
1.1.2 1.5 Lea 1.50 Le	7	7.52	TUESDAY	High 8.1				High		High					High			High	12.49
1	1	1.42	15	low 1.5	9 4	on 7.4	47 7	Low	8.15	Low	1.52	29	Low	2.03	Low	6.39	5	Low	7.00
1		450	10	Height -C Sunse 6.4		leight - warise 4.	54			Sunting	5.06	A STATE OF STATE AS	Seeset	6.22	Sunrise	5.14			6.10
1			WEDNESDAY	High 9.1			0.3				8.55		High		High	1.10		High	1.29
1		2.40	16	Low 2.5	8 L	ow 8.3	35 77	Low	9.08	Low	2.40	30	Low	2.53	Low	7.19	6	Low	7.43
A		4.51	TO	Sunset 6	44 5	unrits 4	4.5	Suncet	6.34	Sentite			Sunset	6.21	Sanrine	5.15	_	Serset	6.03
1.3 1.5	-		THURSDAY										High Height		High Height	1.53		High Height	214
10.42 FIRDAY High 10.72 High 10.73 High 2.40 FIRDAY High 10.74 High 10.75 High 10		3.36	17	Low 3.5	4 t	ow 9.3	28 74	Low	10.03	Low	3.24	31	Low		Low	8.01	7	Low	8.30
10 10 10 10 10 10 10 10	110	4.52	4/	Suntet 6.	43 5	unrise 5			6.32	Sancine	5.08		Sunset	6.19	Sunrise		-	Suncet	6.0
1.1.24 2.5 2.5 1	10										9.1	PAGIDAY	Meight	9.9	Height	9.5		Height	3.01
1.1.24 SAURDAY High 1.1.5 High 5.13 SAURDAY High 1.0.5 High		4.28		Low 44	17 L	ow 10:2		Low	10.59	Low	4.05	1	Height			0.2	8	Low	9.21
1	164	-		Sunset 6	41 5	unrise 5	101 T LAST OU	Sungel	6.30	Seerise	5.10	CATHERDAY	Summet		Sporine	5.18		Suntet	6.0
1978 SEPTEMBER TIDES											9.4		Height	10.0	High Reight	9.2		High Height	3.54
1978 SEPTEMBER TIDES		5.20	19	Low 5	39 1	ow 11.	7 7	Low			4.44		Low Reight	0.1		0.4	9	Low	10.19
1978 SEPTEMBER TIDES	ise	4.55		Suntat 0	40 5	iantite 5	222	Sunset		Suneise	5.11	-					_		6.0
1	en Standa	od line		be Daylight Savings	T	Taylore Standard	Time - AM 11	lour for Deployal	Servings Time.	Tasters St	anderd Time				Eastern 5	itundard Time	SEPTEMBER LAND 1 Now 1	or Daylight S	evings Tie
1	19	78	S	EPTEA	A B E	R T	IDES	low for Buylight	978	16	78	SEPT		0СТ.	Eastern 5	DES		1	evings Tie
The content of the	19'	78	Sosto	EPTEA N Afternoo	A B E	R T	IDES	TON High	978 Afternoon	Testers St.	78 orning	SEPT BOSTON SUNDAY	A Ai	OCT.	T	DES Morning 10.21	BOSTON	1 High	978 termoon
MORDAY High 5.20 MORDAY High 5.54 High 1.04 Lew 5.56 May 5.54 High 1.04 Lew 5.56 May 5	19	78 ning 429 1037	BOSTO	EPTEA N Afternoo	A B E	R T Morn High 1 House Low	IDES ning 805 1.13 SUND 1.12 4.58	TON High	978 Afternoon 11.38 11.2 5.22	Testers St. 1 C M High Height Low	78 orning	SEPT BOSTON SUNDAY	4 Air	OCT.	T High Height Low	Morning 10.21 9.8 4.12	BOSTON	All High Regist Low	978 terreson
1.28	19'	78 ning 429 1037	BOSTO SUNDAY	EPTEA N Afternov High High High High High High	A B E	R T More	IDES ning 805 1.13 SUND 11.2 4.58	TON High	978 Afternoon 11.38 11.2 5.22 -16	Testers St. 1 (M High Regin Low	78 orning 4.38 10.40	SEPT BOSTON SUNDAY 24 T, LAST QUARTER	High Bright Low Height Sunser	OCT. ternoon 4.57 9.0 11.19 1.0 5.37	Festern S T High Hogh Low Neight	Morning 10.21 9.8 4.12 -0.1 5.42	BOSTON SUNDAY	All High Height Low	978 10.4
Table Tabl	Morr	78 ning 429 10.37 00 519	BOSTO SUNDAY 10	EPTEA N Afterno High Low 1 Is Saniet High	A B E	R T More High 1 Height Low Height Survive High	IDES ning 805 1.13 SUN0 1.12 4.58 -1.6 5.28 MONO	TON AY High heads Sen	978 Afternoon 1138 112 522 -16 547 1200	Migh High Heigh Low Heigh Low Heigh	78 orning 4.38 8.3 10.40 1.4 5.34	SEPT SUNDAY Q 4	High High House Low Height Sunser High	OCT. ternoon 4.57 9.0 11.19 1.0 5.37 5.54	High Hogh Low Neight Sunris	Morning 10.21 9.8 4.12 9.342 11.00	BOSTON SUNDAY	All High Hogh Low Hogh Sunsel High	978 hernoon 104 4.3 11.3
High 0.33 High 1.26	Morr	78 ning 429 90 1037 06 519 90 1138	BOSTO SUNDAY 10	EPTEA N Afterno High Low 1 September High Hought Low 2 High Hought Low	A B E	R T Morn High 1 Hegh Low Neight Survive Heigh Heigh Low	IDES ning 805 1.13 SUN0 1.12 4.58 -1.6 5.28 MONO	TON AY High heads Sen	Afternoon 11.38 11.2 5.22 1.6 12.00 11.30 11.30 11.30 11.30 11.30 11.30 11.30 11.30 11.30 11.30	M High Height Low High Height Low	78 orning 4.38 8.3 10.40 1.4 5.34 5.34	SEPT SUNDAY Q 4	High Breght Low Height Sunter High Height Low	OCT. ternoon 4.57 9.0 11.19 1.0 3.37 5.54	High Height Low Reight Suncis High Height Low	Morning 10.21 9.8 4.12 -0.1 5.42 11.00 10.1 4.49	SUNDAY MONDAY	All High Inspire Low	978 ternoon 104 4.1 5
	Morr	78 ning 429 1037 06 519 529 90 1138	BOSTO SUNDAY IO MONDAY II	EPTEA N Afterno High Low 1: Magair Low	A B E 4.53 10.0 1.19 00 601 5.54 10.1	Morn High 1 High 1 Hogh Low Height Low Height Low Height Substitute High Substitute High Height Low Height Substitute Hight Low Height Low Heig	IDES ainq 805 1.13 SUND 1.13 SUND 1.24 S.8 1.25 5.46 -1.5 3.38 MONI	TON AY High height hei	1978 Afternoon 11.38 11.2 5.22 -1.6 11.2 6.10 6.10 6.10 6.11 6.10 6.10 6.10 6.10	High Hegh Low Hesple Surres High Hesple Surres And Hesple Surres High Hesple Surres High Hesple Surres High Hesple Surres Hesple	978 978 orning 4.38 8.3 10.40 1.4 5.34 8.1 11.38 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5	SEPTOSTON SUNDAY 24 SUAST COMMENTS MONDAY 25	High Hogh Hought Low Sight Sight Hogh Hought Low Meight Sunset	OCT. ternoon 4.57 9.0 11.19 1.0 5.37 5.54 8.1	High Heght Low Neight Survival Heght Low Heght Survival Heght Low Height Survival Heght Survival Heght Survival Height Surviva	Morning 10.21 9.8 4.12 -0.1 5.42 11.00 10.1 4.49 -0.3 4.542	SUNDAY MONDAY NEW HOON	All High Height Low Height Low Height Low Height Sunst Low Height Sunst Low Height Low Height Sunst High Sunst High Height Sunst High High High Height Sunst High High High High High High High High	978 ternoon 10.4 4.3 11.3 5.1
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1.00 1.00	Morranda sphillippin sphillipp	78 ***********************************	SUNDAY SUNDAY NONDAY TUESDAY	EPTEA N Afternoo High Hoghe Low 1 Service High Hoghe	A B E 4.53 10.0 1.19 00 601 5.54 10.1 5.54 10.1 2.42	R T	IDES	TON High New Heads See BAY HIGH NEW	11.38 11.20	High High Mengle Low Heggle Sarries High Naught Low Heggle Hangle Hough Naught Low Heggle Hangle	78 078 orning 4.38 8.3 10.40 1.4 5.34 8.1 11.38 6.31 6.31 12.15	SEPTO SUNDAY 24 SUNDAY MONDAY 25	High Hoph Low Height Low Height Low Height Low Height Height Low Height Height Height Height Height Low Height Low Height Low Height Low Height Low Height Low Height Heig	OCT. ternoon 4.57 9.0 11.19 5.37 5.54 81 536 6.51 82 12.34	High Height Low Height Surviva High Height Low Height Surviva High Height Low Height Surviva High Height Low Height Low	Morning 10.21 9.8 4.12 11.00 10.1 4.49 -0.3 5.42 11.00 10.1 5.43 10.0	BOSTON SUNDAY MONDAY MONDAY TUESDAY	All High Height Sunset High Height Sunset High Height Low	978 htermoon 10.4 4.3 5.1 5.1 5.1 5.1
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10 10 10 10 10 10 10 10	Morror oph	78 ning 429 90 10.37 529 91 11.38 921 12.21 736 936	BOSTO SUNDAY ION MONDAY III III III III III III III III III I	EPTEA N Afternoo High Hought Low 1 Security High Hought Low High Hought Low Hought Low Hought Low Hought Low High Hough Low High	A B E 4.53 10.0 1.19 00 601 5.54 10.1 5.52 6.57 10.3 2.42 0.4 5.56 8.00	R T Market March 1 Mar	IDES ainq 805 1.13 5.458 5.28 MONI 5.28 MONI 2.26 1.13 1.13 1.13 1.13 1.13 1.13 1.14 WEDNE	TON High Steph Ton High Steph	978 Afternoon 1138 112 522 -16 112 610 610 619 619 624 1247 114 115 1247 1132	Hatter So If E M High Menghi Lear High Menghi Lear High Menghi Lear Menghi Me	978 orning 4.38 8.3 10.40 1.34 1.38 6.31 12.15 6.1 15.36 7.25	SEPT 105101 SUNDAY 2.4 TO MONDAY 2.5 TUESDAY 2.6	High Height Low Height Sware! High Hought Low Height Sware! High Height Low Height High Hought Low Height Sware! High Height Sware!	OCT. 4.57 9.0 11.19 10.0 5.54 8.8 5.36 6.51 8.8 12.34 1.6 5.34 7.43 9.0	High Height Low Neight Sunris High Height Low Height Sunris High Height Sunris High Sunris High Height Sunris High Height Sunris High Height Sunris High Height Hei	Morning 10.21 9.8 4.12 -0.1 9.542 11.00 10.1 4.49 -0.3 1.542 11.39 10.0 5.30 -0.4 5.43	BOSTON SUNDAY MONDAY MONDAY MONDAY TUESDAY WEDNESDAY	All High Heigh Low Heigh Hoph Heigh	978 hermoon 10.4 4.3 5.1 1.3 5.1 5.1 5.1 5.1 5.1 5.1
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Logs 9.10 (order 10.0) RIDAY (order 10.0) High (order 10.0) High (order 10.0) 1.5 (order 10.0) High (order 10.0) 1.7 (order 10.0) High (order 10.0)	Morrows Morrow Morrows Morrows Morrows Morrows Morrows Morrows Morrows Morrows	78 ninq 429 90 10.37 0.6 5.10 5.29 90 11.38 0.6 5.21 6.33 91 12.21 -0.2 5.22 7.36 9.3 1.23 -0.3 5.23	SUNDAY IO SUNDAY IO PIRST GUART MONDAY 11 TUESDAY 12 WEDNESDA	EPTEA N Afterno High Heigh Heigh Heigh Low 1 Month Lo	4.53 110.0 11.19 000 5.54 10.1 5.58 6.57 10.3 2.42 0.4 5.56 8.00 10.7 11.44 0.00	R T More Standard More Sta	IDES sinq 0.05 1.13 1.13 1.12 1.13 1.13 1.13 1.13 1.13	TON AY High Rech Sur	Afternoom 11.38 11.2 5.22 1.6 1.12 5.42 1.12 6.10 6.10 6.10 6.10 6.10 6.10 6.10 6.10	Migh High Moule Low High Hoph Hoph Hoph Hoph Hoph Hoph Low High Hoph Hoph Low High Hoph Low Hoph Hoph Low Hoph Hoph Low Hoph Hoph Hoph Low Hoph Hoph Hoph Low	978 0718 4.38 8.3 10.40 6.31 11.38 6.31 12.15 7.25 7.25 3.111 1.0 6.31 6.31 6.31 6.31 6.31 6.31 6.31 6.31	SEPT 105101 SUNDAY 24 15 JUST 0 JUST 10 JUST 1	High High Hinght Low Height Sunset High Hospit Low Height Sunset High Hospit Low Height Sunset High Hospit Sunset	OCT. ternoon 4.57 9.0 11.19 1.0 5.37 5.54 8.8 1.234 1.6 5.36 7.43 9.0 1.29 1.4 5.32	High Heigh Heigh Sunris High Sunris High Sunris High Sunris High Sunris High Sunris Low Height Sunris Low Height Sunris Low Heigh Sunris Low Height Sunris Low Height Sunris Low Height Sunris	Morning 10.21 9.8 4.12 11.00 10.1 4.49 10.0 10.1 4.49 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.	BOSTON SUNDAY 1 MONDAY 2 MONDAY 1 TUESDAY 3 WEDNESDAY 4	All High Heigh Heigh Low High Hosple Low High High Hosple Low	978 tternoon 104 4.3 5.5 5.5 5.6 12 11 6.6
Logs 9.10 (order 10.0) RIDAY (order 10.0) High (order 10.0) High (order 10.0) 1.5 (order 10.0) High (order 10.0) 1.7 (order 10.0) High (order 10.0)	Morra Morra Maria	78 ninq 429 10.37 00 519 11.38 00 521 6.33 12.21 7.36 0.3 12.22 7.36 0.3 1.23 0.3 1.23 0.3 1.23 0.3 1.23 0.3 1.23 0.3 1.23 0.3 1.23 0.3 1.23 0.3 1.23 0.3 1.23 0.3 1.23 0.3 1.23 0.3 1.23 0.3 1.23 0.3 1.23 0.3 1.23 0.3 1.23	SUNDAY IO SUNDAY IO SUNDAY IO SUNDAY IO SUNDAY II I I I I I I I I I I I I I I I I I	EPTEA N Afternoon High High Hogh	ABE 453 119.0 00 00 00 00 00 00 00 00 00 00 00 00 00	R T More Marce High 1 Hope More More Marce Hope More More More More More More More Mor	IDES 113 SUNC 113 112 113 112 113	TON	### 1247 ## 1.05 ## 1.	High High March Low Hogh Hogh Hogh Hogh Hogh Hogh Hogh Hogh	978 978 4.38 4.38 4.30 10.40 1.4 5.34 11.38 1.6 1.1 12.15 7.25 7.25 3.1 1.1 1.36 7.37	SEPT BOSTON SUNDAY 24 TO MAIN BONDAY 25 TUESDAY 26 WEDNESDAY THURSDAY 1 THURS	High High Health Low Health High Health Low High Health High High Health High High Health High High High High High High High Hig	OCT. ternoon 4.57 90 11.19 1.00 3.37 5.54 88 12.34 1.6 5.30 1.29 1.43 3.42 8.31 9.2	High Heigh Low Seight Surviva High Heigh Low Height Surviva High Heigh Surviva High Surviva High Heigh Heigh Surviva High Heigh Heigh Heigh Surviva High Heigh Heigh Surviva High Heigh Heigh Heigh Heigh Heigh Heigh Heigh	Moreing 10.21 9.8 412 9.8 412 9.8 412 11.000 101 14.49 -0.1 9.542 11.39 10.0 5.40 11.39 10.0 5.40 11.39 10.0 5.40 11.39 10.0 5.40 11.39 10.0 5.40 10.0 6.10 6.10 6.10 6.10 6.10 6.10 6.1	BOSTON SUNDAY 1 MONDAY 2 NEW MOON TUESDAY 3 WEDNESDAY 4	All High Height Survey High Heigh He	978 104 205 104 205 105 105 105 105 105 105 105 105 105 1
103 103 104 103 105	Morra Morra Maria	78 ninq 429 1037 00 519 529 1138 00 521 633 01 1221 022 736 522 736 523 835 622 835	SUNDAY IO SUNDAY IO SUNDAY IO SUNDAY IO SUNDAY II I I I I I I I I I I I I I I I I I	EPTEA N Afternoon High High Hogh	ABE MBE 10.0 1199 000 601 1199 559 101 103 104 104 105 105 105 105 105 105 105 105	R T Macro Standard	IDES 1.12 SUND 1.12 SUND 1.13 SUND 1.14 SUND 1.15 SUND 1.16 S	TON TON High Noult Property Ton Ton High Noult Property Noult Proper	### 132 ### 132 ### 132 ### 132 ### 132 ### 132 ### 132 ### 132 ### 132 ### 132 ### 132 ### 132 ### 132 ### 132 ### 133 ### 13	High High May High May Hope Some Hope Some High Hope Hope Hope High High High High High High High High	978 4.38 8.31 9.40 9.534 5.34 11.38 6.31 12.15 6.31 7.25 8.3 1.11 9.334 7.25 8.3	SEPT BOSTON SUNDAY 24 TO MAIN BONDAY 25 TUESDAY 26 WEDNESDAY THURSDAY 1 THURS	High High Health Low Health High Health Low High Health High High Health High High High High High High High Hig	OCT. ternoon 4.57 90 11.19 1.05 3.37 5.54 8.8 1.6 6.51 8.8 1.6 1.6 1.234 7.43 9.0 1.29 1.44 5.32 8.31 9.2 2.19	High Heigh Low Seeph Seeph High Heigh Seeph Seeph Seeph Seeph Seeph Seeph Seeph Seeph Low Heigh Seeph Low Heigh Low Heigh Low Heigh Low Heigh Low Heigh Seeph Low Heigh Seeph Seeph Low Heigh Seeph Se	Moreing 10.21 9.8 412 9.8 412 11.00 101 14.49 -0.1 15.42 11.39 10.0 5.42 11.39 10.0 5.43 12.03	BOSTON SUNDAY 1 MONDAY 2 NEW MOON TUESDAY 3 WEDNESDAY 4	High High Heigh Low Heigh Hosph Low Heigh Hosph Low Hosph Hosph Low Hosph Low Hosph Hosph Low Hosph Hosph Low Hosph Hosph Low Hosph Hosph Hosph Low Hosph Hosph Hosph Low Hosph Hosph Hosph Hosph Low Hosph Hosph Hosph Low Hosph	978 104 3 11.5 11.5 11.5 11.7 11.7 17.7
Special 526 Secret 531 Secret 532 Secret 532 Secret 539	Morr Morr Morr Morr Morr Morr Morr Morr	78 429 1037 006 519 529 1138 006 521 1221 01 522 736 006 521 221 007 835	BOSTO SUNDAY IO	EPTEAN N Afternoo High None of the term of	MBE 453 10.0 00 00 119 00 001 1101 558 06 57 10.1 2,42 04 556 8,00 107 1.44 8,58 8,58 8,58 8,58 8,58 8,58 8,58 8,	R T Macro Standard No. Macro Standard	IDES 112 113 114 115	TON AY Highly Feel Lew Headth Sur H. Highly Sur H. Highly Sur H. Highly Sur Highly Sur Highly Sur Highly Headth H	### 132 ### 132 ### 132 ### 132 ### 132 ### 132 ### 132 ### 132 ### 132 ### 132 ### 133 #### 133 ### 133 ### 133 ### 133 ### 133 ### 133 ### 133 ### 133 ### 133 ### 133 ### 133 ### 1	Marken So Migh Migh Meght Learn Santas High Meght Santas High Meght Lear Meght Santas High Meght Lear Meght Meght Santas High Meght Santas Meght Meght Santas	78 orning 4.38 4.38 10.40 5.34 5.34 6.31 11.38 6.31 12.15 7.25 7.25 8.36 1.11 5.37 8.16 8.0 2.02 2.03	BOSTOL SUNDAY 24 1, JAST GHARTIS MONDAY 25 THESDAY 26 WEDNESDAY 27 THURSDAY 28	High High lingst Low Hosph Hos	OCT. terhoon 4.57 9.0 11.19 1.0 5.37 5.54 81 5.36 6.51 8.31 1.6 5.34 7.43 9.0 1.29 1.29 1.29 1.39 1.31 9.10 1.31 9.10 1.31 9.10 1.31 9.10 1.31 9.10 1.31 9.10 1.31 9.10 1.31 9.10 1.31 9.10 1.31 9.31 9.31	High Hogh Low Reight Low Reight Suners High Reight Suners High Reight Suners High Reight Suners High Reight Low Reight Suners High Reight Suners High Reight Suners	Maceing 10.21 9.8 4.12 -0.1 11.00 11.39 1.39 1.39 1.39 1.30 1.01 6.10 -0.4 1.449 1.10 6.543 1.00 6.543 1.00 6.543	BOSTON SUNDAY 1 MONDAY SIEW MOON TUESDAY 3 WEDNESDAY THURSDAY THURSDAY	All High Invalid Sunser High Invalid I	978 ternoon 10.4 2.3 5.1 1.3 5.1 5.1 6.3 1.2 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3
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	Morralita Maria Ma	78 429 90 1037 519 529 91 11.38 93 11.32 11.221 93 8.35 100 93 8.35 100 93 93 93 93 93 93 93 93 93 93	BOSTO SUNDAY SUNDAY NONDAY NONDAY TUESDAY 12 WEDNESDAY 13 THURSDAY THURSDAY THURSDAY FRIDAY	EPTEA N Afternoon High Hough Low 1 Search Fright Hough Hough Low 1 Search Fright Hough Low Hough Ho	ABE 453 10.0 00 00 11.19 00 0554 10.1 10.3 10.3 10.3 10.3 10.3 10.3 10.3	March March 1 March	IDES sinq 805 1.13 2.52 4.56 2.12 4.56 2.12 4.56 1.13 1.13 4.56 1.13 1.13 1.13 1.13 1.13 1.13 1.13 1.1	TON High	Afternoon 11.38 1	Marker Sc. Migh High Hopk Hopk Hopk Hopk Hopk Hopk Hopk Hopk	material Two 78 4 38 8 33 10 40 10 40 11 534 8 11 11 38 15 16 31 12 15 13 13 15 15 15 11 15 11 15 11 15 17 25 20 20 20 20 24 70 05	SEPT BOSTON SUNDAY 24 TO JUST ON MONDAY 25 THE SDAY 26 WEDNESDAY 27 THURSDAY 28 FRIDAY 29	4 AF High High Height Lew Height Height Height Lew Height Height Height Lew Height Height Height Height Lew Height Lew Height Height Lew Height	OCT. ternoon 4.57 9.0 11.19 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	High Incoln Inco	Macring 10.21 9.8 412 11.00 10.0 10.0 10.0 10.0 10.0 10.0 1	BOSTON SUNDAY I MONDAY 2 NEW 2004 TUESDAY 4 HURSDAY THURSDAY FRIDAY	Al High Regist Low Regist Services Serv	978 10.4 13.1 13.1 15.1 15.1 16.6 16.7 17.7 18.8
109 16 Hight 113 Hight 21 22 Heat 92 North 94 10 Ion 3.49 Low 826 7 Hight 109 Ion 431 North 94 109 Ion 434 Low 826 7 Hight 109 Ion 109	Morra Morra Maria	78 ning 429 1037 6519 90 1138 90 1221 90 1221 90 90 1221 90 90 90 90 90 90 90 90 90 90 90 90 90	SOUTO SUNDAY SOUTO SUNDAY SOUTO SOUT	EPTEA N Afternoon High Incom I server High I server High H	ABE 453 10.0 11.0 001 10.	Macon Statement	IDES sinq 805 1.13 59NB 1.14 58 1.14 58 1.15 5.46 1.15 1.14 WEDNE 1.15 1.14 WEDNE 1.15 1.14 WEDNE 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15	TON AY High Ton By Hoph Hoph Hoph Hoph Hoph Hoph Hoph Hoph	### 138 1200 138 1	Marken Sc Migh High Keyle Leav Hoph Hoph Hoph Hoph Hoph Hoph Hoph Hoph	378 4 38 310 400 110 110 110 110 110 110 110 110 1	SEPT BOSTON SUNDAY 24 WINDOW 25 THESDAY 26 WEDNESDAY 27 THURSDAY 28 FRIDAY 29	High High House Low High House Sant et Low Higher Higher Sant et Low High High High Higher Sant et Low High High Higher Sant et Low High High High Higher Sant et Low High High High High High High High High	OCT. ternoon 4.57 9.119 100 3.37 5.54 8.8 12.34 1.536 6.51 8.8 12.34 1.534 9.00 1.29 1.00 1.29 1.00 1.00 1.00 9.17 9.530 9.17 9.530 9.17 9.530 9.17	Factors 1 High Hope Hope Hope Hope Hope Hope Hope Hope	Moreing 10.21 9.8 4.12 11.00 10.1 10.1 11.00 10.1 11.39 10.0 10.1 11.39 10.0 10.1 11.39 10.0 10.0 10.1 11.39 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.	BOSTON SUNDAY 1 MONDAY NEW BOOK TUESDAY 3 WEDNESDAY 4 THURSDAY 5 FRIDAY	All High Height Santa High Height Hei	978 10.4 2.3 5.1 5.1 5.1 6.6 6.7 7.7 7.7 7.7 7.7 7.7 7.7 7.7 7.7
tow 4.09 Low 4.31 Low 9.45 Low 10.22 Low 3.30 30 low 8.49 low 8.26 1 low 10.22 Low 3.30 30 low 8.26 1 low 10.22 Low 3.30 Low 1.50	Morra	78 ninq 429 1037 519 519 519 51138 633 633 736 736 736 736 736 736 736 736	BOSTO SUNDAY SUN	The Building Section of the Control	ABE 453 110.0 11.19 0.0 10.1 10.0 10.1 10.0 10.1 10.1	March	IDES sinq 805 1.13 5.44 1.13 5.24 1.13 5.24 1.14 1.15 1.15 1.15 1.15 1.15 1.15 1.1	TON AY High To Nat Hoph To Nat High Bank Bank Bank Bank Bank Bank Bank Bank	### 132 132 132 132 132 132 132 132 132 132 133 13	High May	materi Tee 778 438 438 10.40 11.40 534 51.11 11.38 631 631 12.15 530 1.11 10.33 11.10 530 900 900 900 947 959 900	SEPT BOSTON AVERAGE AND AVERAGE AVERAG	High High House Low High House Sant et Low Higher Higher Sant et Low High High High Higher Sant et Low High High Higher Sant et Low High High High Higher Sant et Low High High High High High High High High	OCT. 4.57 1.19 1.19 5.37 5.54 88 12.34 1.234 1.34 7.43 8.31 9.0 1.29 1.4 5.32 8.31 9.0 1.9 1.9 1.0 5.30 8.31 9.0 1.0 5.30 8.31 9.0 1.0 5.30 8.31 9.0 1.0 5.30 8.31 9.0 1.0 5.30 8.31 9.0 5.30 8.31 9.0 5.30 8.31 9.0 5.30 8.31 9.0 9.17	High meghi Lew Migh Meghi Megh	Macring 1021 0.21 0	BOSTON SUNDAY I MONDAY EVEN BOOK TUESDAY SUNDAY HER BOOK THURSDAY FRIDAY FRIDAY SATURDAY	All High Hoph Hoph Low Hoph Hoph Hoph Hoph Low Hoph Hoph Hoph Low Hoph Hoph Hoph Hoph Hoph Hoph Hoph Hoph	978 10.4 13.1 13.1 15.1 15.1 16.6 16.7 17.7 18.8

Tidal differences from Boston High Tide

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