# **Bird Observer**

#### VOLUME 33, NUMBER 6

DECEMBER 2005



## **HOT BIRDS**



On August 27, 2005, the Brookline Bird Club's pelagic trip yielded this **Bandrumped Storm-Petrel** (left), after the fact. This and other photographs by Glen Tepke resulted in an identification after the trip.

A much-anticipated first state record (pending MARC review), this **Bell's Vireo** (right) was netted at Manomet in Plymouth on October 24, 2005. Photograph courtesy of the Manomet Center for Conservation Sciences.





Al and Lois Richardson found and photographed this immature **Purple Gallinule** (left) at the Ashley Reservoir on November 3, 2005.

Blair Nikula and Peter Trull found two **Townsend's Solitaires** in North Truro on November 5, 2005. This stunning photograph of one of the birds (right) was taken by Blair.

There were so many recent Hot Birds in Massachusetts that a couple of them spilled over onto the inside back cover.



## **CONTENTS**

WHERE TO BIRD IN SCITUATE	Glenn d'Entremont	345
Take a Second Look: 25 Years and Counting Maury He	all and Soheil Zendeh	352
BUILDING A BIRD CLUB IN THE DIGITAL AGE	Marjorie Rines	366
DRIVING BIRDS AWAY	Christopher Reed	369
BIRD CONSERVATION AND THE IMPORTANT BIRD AREA PROGRAM: IT'S ALL ABOUT HABITAT	(IBA) Wayne R. Petersen	372
TEN TIPS FOR MAINTAINING YOUR BIRDING PARTNER		375
FIELD NOTE Food for Later	David Larson	378
About Books Tools	Mark Lynch	380
Bird Sightings July/August 2005		387
INDEX TO VOLUME 33, 2005		400
ABOUT THE COVER: Red-breasted Nuthatch	William E. Davis, Jr.	403
ABOUT THE COVER ARTIST: Barry Van Dusen		404
At a Glance	Wayne R. Petersen	405

#### **Editorial Announcement**

This December issue marks the last produced under my role as Managing Editor. I retire with mixed emotions: regret that it is time to change my focus, great pride in the caliber of the journal, and unbounded appreciation for the warm support I have found from both *Bird Observer* staff and readers. You have made my job most rewarding!

I am very pleased to let you know that Paul Fitzgerald and Mary Todd Glaser (Toddy) will be assuming the editorial duties as of our February issue, Paul as Editor and Toddy as Associate Editor. Both are highly experienced editors who are deeply involved in the birding community. They are bringing talent and enthusiasm to their new challenge, and I look forward with great anticipation to the results of their collaboration. New material and other communications can be addressed to Paul at paulf-1@comcast.net.

Carolyn Marsh



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## Where to Bird in Scituate

#### Glenn d'Entremont

Scituate is located along the coast of Massachusetts in an area commonly referred to as the South Shore. The northern end is a promontory jutting out into the Atlantic at the mouth of Cohasset harbor, and the southern end is bordered by the North River and Marshfield. To the northwest it is bordered by Wompatuck State Park (Picture Pond and the Mount Hope trail are in Scituate) and to the



west by Norwell. To the east, the Atlantic Ocean makes its presence known during nor'easters.

There is good birding in Scituate throughout the year with Harlequin Ducks, Purple Sandpipers, and Black Guillemots, along with the more common seabirds in the winter, staging Red-Necked Grebes in April, northbound migrants in May, diverse nesting species such as Piping Plovers and Louisiana Waterthrushes during the breeding season, southbound shorebirds in summer, and numerous landbird migrants during the prolonged southbound migration. Exploring the nooks and crannies of Scituate can produce a diverse and respectable list.

#### The Glades and Minot

Located on a northward-facing peninsula, the privately owned Glades perhaps offer the most annual bird diversity in the town. Visitors on foot are welcome to walk and go birding there. With a rocky coastline, proximity to both pelagic and inshore feeding areas, estuarine tidal flats, impenetrable coastal thickets, upland oak forest with scattered pine and cedar trees, planted garden plots, and feeders, the place offers any flying waif a number of habitat options. There is even lawn and a rocky washover section.

To get to the Glades, take Henry Turner Bailey Road east from Route 3A in north Scituate. Follow this road through two sets of lights (name changes to Gannett Road at first light) for 2.3 miles. Gannett Road ends at the ocean, and Glades Road begins on the left. Parking is problematic here; birders can live park along this road for short periods of time, but do not leave your vehicle unattended. An excellent view is obtained at the highest point along Glades Road. Look for seabirds here.

From late fall through mid-spring, perusal of the rocky islands and surrounding waters could result in locating Harlequin Duck, Great Cormorant, Purple Sandpiper, Red-necked Grebe, King Eider, and Barrow's Goldeneye as well as the more common seafowl. Red-necked Grebes begin staging here in late March before heading north; counts sometimes total over a hundred individuals.

Continue on Glades Road. During the winter, drive past Bailey's Causeway on the left and live-park at the end of the seawall to scan the water. Harlequin Ducks are usually found from here along the rocky islands and rocky coastline to the north.



Carefully check the same islands for Purple Sandpipers. Look for King Eider and Barrow's Goldeneye. Scanning beyond the rocks as well as toward Minot Light may reveal a Black Guillemot or two.

If you want to walk the Glades, turn left onto Bailey's Causeway. There is a restricted parking area on the right which may offer space. Walk north on Glades Road past the homes on the left. Pay attention to the swallows in spring, since a Cliff Swallow pair nested under the eaves of one of these houses in recent years. Just before the gated entrance to the Glades (many times open, but do not drive beyond this point), look over the rocky beach and outcroppings for shorebirds and terns. A Royal Tern was once seen cruising past this location.

Birding in the Glades is best during fall migration, with such sightings as Philadelphia Vireo, White-eyed Vireo (has nested in years past), Golden-winged Warbler, Hooded Warbler, and Yellow-breasted Chat. Under the right conditions, there can be occasional fallouts in the spring, particularly when a backdoor cold front abruptly stops northward migrants and puts them down along the coast.

Once beyond the gate, the paved road is a private right of way and remains Glades Road. The thickets begin immediately. Gray Catbirds are abundant in season. Walk the road carefully. There are no houses on the left (west) side of the road, and any trail can be taken. The houses on the right side are widely spaced, but do not take any trails since they invariably lead to someone's yard.

Flycatchers, vireos, kinglets, thrushes, warblers, and sparrows can be encountered anywhere. Remaining on the road, continue walking north. After passing several houses on the right, watch for a wider path on the left side (actually an old road) with a chain across the entrance. Take this trail, and carefully bird the area. Continue on this path to an old World War II cement lookout tower. From here there are several paths and trails. Most eventually return to the road, but one or two head toward the adjacent salt marsh. If you are encountering lots of birds to this point, continuing on these paths can be very rewarding. If birds are few or time short, turn back to Glades Road. The section between the road and tower is usually the birdiest.

After returning to Glades Road, continue north. Just beyond the chained road, Glades Road goes down a hill to a rocky, short causeway, or washover spot. At the bottom, but before the causeway, there is an old overgrown road that follows the contour of the hill to the left (west). Along with the chained road, this can be one of the birdiest parts of the Glades. Through the years I have seen two Yellow-breasted Chats at this locale as well as two Hooded Warblers and a Golden-winged Warbler.

Return to the causeway. Crossing the washover area to the west will allow scanning of the marsh and tidal flats which, depending on the tide, might reveal feeding shorebirds. Most will be common species, but there have been sightings of Stilt Sandpipers, Whimbrels, and a Marbled Godwit at the Glades. If one pushes through the thickets on the lower road described above, a closer view of the marsh area can be obtained. As you continue on the road, the short distance to the next hill can be interesting. The thickets and trees along the hill base can harbor migrants. Beyond these thickets out to the end of the Glades, the landscape has been cleared so that lawns dominate. However, ocean scanning in winter from this point toward Minot Light can reveal Black Guillemots and possibly other alcids. At lower tides, dozens of seals can be seen hauled out on the rocks below the bluff at the end.

#### Hatherly Road and Scituate Harbor

Return to your car, and turn right (west) out of the parking area onto Bailey's Causeway. At the stop sign, turn right into the golf club parking area. The edge of the road and golf course is marshland. At high tide, the discreet birder can drive the road and access road of the course to scan for birds. Little Blue Heron, egrets, and even a Bald Eagle have been seen from here.

Exit the golf club, and proceed south. This is Hatherly Road, which eventually takes one to Scituate Harbor. Go through the lights, and after a quarter-mile turn left on Musquashicut Avenue. This road borders the north end of Musquashicut Pond (pronounced mus-SQUASH-i-cut). This coastal pond has hosted some interesting birds over the years, including an Eared Grebe, a one-eyed American White Pelican, two American Avocets, Barrow's Goldeneye, and Caspian Tern. The pond freezes completely only during the harshest of winters, with the southern end remaining open longer. Large numbers of Mute Swans plus other common waterfowl can be expected. Be diligent; Belted Kingfishers can often be seen along the shores.

Return to Hatherly Road, and turn left (southeast). Turn left into the small dirt parking area just before crossing a small bridge. Scan the waterway in both directions. This is the southern section of Musquashicut Pond. Walk out on the grass to where a hidden cove can be viewed on the left. In season, look for masses of swallows, and check the rocks for resting Least Terns. This section is the last to freeze, so if the north section is frozen, still pull in here and check for waterfowl.

Continue southeast along Hatherly Road for about 0.8 mile. From late fall through early spring, turn in to the parking area for Egypt Beach. Take the paved path out of the north end of the parking area up the embankment to scan the ocean. Be cautious as you climb, looking left (west). The extreme south end of Musquashicut Pond is here, and ducks can be taking cover along the vegetation, or else will suddenly rise out of the pond.

Return to Hatherly Road, and continue south (left) for 0.1 mile and, if traffic permits, look at the small pond on the left (east). In season, there are often Snowy or Great egrets on the shore. Continue 0.4 mile to Sixth Avenue on the left. During the winter, the thickets along Hatherly and Sixth Avenue can be productive places to locate Northern Flicker, Carolina Wren, American Robin, Cedar Waxwing, and Yellow-rumped Warbler, with other winter sprites thrown in. Bohemian Waxwings have been found here mixed in with the Cedar Waxwings. Across Hatherly Road the property is part of the old Scituate Proving Grounds, where the thickets should also be checked for assorted land birds.

If you are looking for wintering ocean birds, continue on Sixth Avenue to the end. Turn right onto Oceanside Drive. After 0.3 mile, there will be a large gravel open area with no houses. Pull off the road on the right (west) side, grab a scope, and walk to the seawall to scan the ocean. One can be rewarded with loons, grebes, and other waterfowl. Western Grebe and King Eider have been seen here.

Return to your car, and continue on Oceanside, which becomes Jericho Road (it joins from the right) after 0.3 mile. At the split in the road, obey the signs, and stay right on Lighthouse Road. Follow to the parking area for Scituate Light. Scope the area around the lighthouse, which marks the entrance to Scituate Harbor. King Eiders have been found here, and in 1977 this was the location of a drake Steller's Eider, the sole record for Massachusetts and only the second for the Atlantic Coast of the United States.

Once back at your car, follow the one-way signs to return to Jericho Road. Stay on Jericho, taking care to turn left to follow the edge of Scituate Harbor. Pass Hatherly Road on the right, and continue up the hill to the traffic light. Turn left onto Front Street. Follow through Scituate center, and turn left into the parking area just south of the center before a small bridge.

Turn right at the first opening in the curb to park in the first parking area. This will offer a view of a creek which empties into Scituate harbor at this point. This section is tidal, but all tide situations should provide an opportunity to sample the birds using the area. Wintering Mallards are fed here, and the occasional Greenwinged Teal, American Wigeon, or Northern Pintail may drop in. Once in a while a "white-winged" gull is also found in winter. Other views from the parking area allow one to scan the harbor for Common Goldeneye and Bufflehead in season.

Return to Front Street, and turn left (south) and cross the bridge. Proceed to a busy intersection, and turn left (east) onto Edward Forster Road. Take this causeway over an inlet to the intersection beyond. Turn right onto Peggoty Beach Road, and after 0.1 mile turn right into a large parking area. At the far end of the parking lot, there is a pool known to local birders as Myron's Puddle (named for long-time South Shore birder Myron Litchfield). Even though the highest tides fill this pool, rain will influence its depth as well. In season, a number of interesting ducks and shorebirds have been seen here over the years, such as "Eurasian" Green-winged Teal, Ruff, and Curlew Sandpiper. Viewing is best at high tide when birds from the shore and the tidal creeks are forced into the pan.

#### The Driftway and Third Cliff

Retrace your steps to Edward Forster Road and the busy intersection. At the stop sign, carefully turn left onto Kent Street. Follow along the marsh, and turn left to remain on Kent Street; it is clearly marked but one can easily pass by if just following the traffic. Continue to a small brick pumping station on the left with a small area to park. From here to the intersection with Old Driftway Road, the thickets along the road and an old bean field on the right can produce a wide assortment of migrants during fall and early winter. A nice mix of warblers and vireos can be coaxed out of the thickets along with the occasional cuckoo, while the field can produce a nice variety of sparrows, including Field and White-crowned. A Black-throated Gray Warbler and several Clay-colored Sparrows have been found in this area. Across Old Driftway from the bean field is another "waste" area which can hold migrants.

Retrieve your car, and drive to the intersection just described. Turn left onto Old Driftway. One can then turn right into the Scituate Country Club driveway and follow to the clubhouse parking area. Check in at the clubhouse for permission to bird from this spot. From the back of this lot one has a commanding view of the North River marsh. At high tide, egrets and herons, including Little Blue and Tri-colored herons, can be found, plus the occasional American Bittern in fall. Just a short distance south, Yellow-crowned Night-Herons have been seen a few times on the Marshfield side of this marsh, so keep a watchful eye. Raptors can be seen roosting in the trees or soaring over the marsh.

Return to Old Driftway, and turn right (east). Follow the road to where it turns right. Third Cliff is a popular summer bathing beach, and if what few parking spots exist are taken, it is not recommended to park anywhere else unless one does not mind getting a parking ticket. Evenings during the week may offer the best chance to park for shorebirding after a day's work. If a spot is vacant, park, get the scope, and walk along Collier Road to where it meets with Moorland Road (Moorland and Collier form a circle). Locate the path right-of-way at the apex of the intersection, and walk between the houses. This path ends at the marsh edge and leads to a well-worn path and a boardwalk over the tidal creeks. This walkway ends at a barrier beach.

Third Cliff beach (known locally as the "Spit") might be the best shorebird spot between Point of Pines in Revere and Duxbury Beach. All commonly occurring Massachusetts shorebirds are present in season plus some localized species as Piping Plover (nesting), Red Knot, Whimbrel, Willet, and Purple Sandpiper. Rarities such as Red-necked Stint, Buff-breasted Sandpiper, Lesser Black-backed Gull, and Caspian Tern have been recorded here. High tide is best for viewing because the birds are closer and flocked, but even at low tide the birds are present, so a visit is worthwhile at any point in the tide cycle.

During low tide, there are areas with extensive stones and rocks. Scan these carefully since they could be crawling with shorebirds such as Semipalmated Plovers, Ruddy Turnstones, Red Knots, and peep. Check out the terns in the area; Least Terns nest on the beach, and their nests are monitored and cordoned off. Roseate and Common terns also roost here in late summer.

Once Third Cliff has been thoroughly birded, return to your vehicle. Proceed following the one-way signs around Collier and Moorland Roads, which returns one to Old Driftway. Turn left (west), and continue past the country club, around the bend and up the hill to the stop sign. Turn left onto the Driftway. Continue for about half a mile to a parking area on the left, noting the Purple Martin boxes at the Widow's Walk Golf Course on the right (north) side of the road. Pull into the parking area on the left.

This area is known as the "Driftway" to locals. The pathways and walkways here have recently been upgraded, and the immediate area has been designated the A. J. McEachern Trail. The paths and walkways that crisscross this area are regularly used by people walking dogs. Be alert for vireos, flycatchers, warblers, kinglets, thrushes, sparrows, and blackbirds. Check the sky for a passing raptor or two. A scan along the waterway may produce a Belted Kingfisher as well as more egrets and herons. There is a walkway along the water with thickets on the left. During fall migration these thickets can be especially productive. The path following the watercourse terminates at the marsh where Saltmarsh Sharp-tailed Sparrows can be found and occasionally a Virginia Rail or Sora.

#### **Other Areas**

Return to the parking lot, and turn left onto the Driftway. At the complex intersection with Route 3A, turn right (north) onto 3A for 0.8 mile until water appears on both sides of the road. There are spots to pull off. In season, this old reservoir can hold either ducks, such as Wood Duck or Hooded Merganser, or sandpipers and plovers, depending upon the level of the water, which seems to change dramatically from time to time. Baird's Sandpiper has been reported here several times in the past.

Return south to the complex intersection of Route 123, Route 3A, and the Driftway. Just after the light, turn right on Judge Cushing Road just before PJ's restaurant. Continue past the houses to where the road ends at a tidal pool surrounded by higher land covered with trees and thickets. This small area has produced some interesting birds in the past, such as Great Horned Owl, Baird's Sandpiper, and Rusty Blackbird.

**Glenn d'Entremont** has been birding the South Shore for over twenty years with a focus on bird distribution and abundance. He is a regular contributor of sightings to Bird Observer and is the current Vice-President of the South Shore Bird Club. He would like to thank Wayne Petersen for reviewing the first draft of this article and offering suggestions for clarity, along with additional bird sightings and records. David Clapp offered suggestions for parking in the Third Cliff area, and Steve Maguire assisted in the getting the proper name for the A. J. McEachern Trail.



HARLEQUIN DUCKS BY GEORGE C. WEST

### Take a Second Look: 25 Years and Counting

#### Maury Hall and Soheil Zendeh

Take a Second Look (TASL) Boston Harbor winter bird counts have been a fixture on the Greater Boston birding scene for a quarter century. The counts begin each year in November, when the masses of wintering seabirds arrive in the Harbor, and continue into March. Over the years, countless volunteers have braved frigid conditions to assemble what has become the definitive body of winter bird population data for Boston Harbor.

The year 2005 marks the 25th anniversary of this project, an impressive milestone and appropriate moment to summarize and report on the project and its findings to date. In this article, the first of a two-part TASL retrospective, Maury Hall, the TASL data compiler for the past 17 years, sketches a brief history of the project, explains the basic techniques of the counts, presents summary data for TASL's first quarter century, and provides brief accounts of winter waterfowl population trends.

Part 2, to be published in a subsequent issue of *Bird Observer*, will evaluate factors which explain some of the more obvious population trends.

#### History

The stimulus for the creation of TASL was "Black Sunday," December 15, 1976. This was the date the Argo Merchant, an aging Liberian tanker, went aground on Nantucket Shoals, southeast of Nantucket Island, spilling 7.6 million gallons of industrial heating oil into one of the most important waterbird wintering areas on the East Coast.

The extent of the impact of the spill on avifauna was unclear, however, due to an absence of reliable bird population data. Common Eider, Long-tailed Duck, alcids, and other species were known to winter in Nantucket Sound in large numbers, but precisely how large was not known: 50,000 birds? 500,000 birds? Complicating the damage assessment was the difficulty of estimating total mortality from the number of oiled birds actually found.

Several local birders became concerned that if a similar tragedy occurred in their own backyard, Boston Harbor, the damage could not be accurately assessed. They knew that many birds overwinter in the Harbor but not the numbers of each species or if these numbers stay the same from year to year. A search through *Bird Observer* records beginning with its first issues from 1973 found that, while rarities like King Eider were duly reported, the numbers for more common species like Common Eider were only sporadically reported. In some winters there were no reports of Common Eider in the Harbor at all even though it was widely known that many thousands could be seen every winter in the Inner Harbor and off Deer Island.

In 1978, at a party celebrating *Bird Observer*'s first "Where To Go Birding" book (*Where to Find Birds in Eastern Massachusetts*) the TASL project was conceived.



Boston Harbor and Lynn Harbor shown divided into TASL census sectors or routes. Winthrop and Boston sectors are further subdivided into 4 additional routes. Along each route birds are counted from specified census points. Map by Julie Roberts.

#### Table 1 A- Results from November TASL censuses.

_	R.T. Loon	C.Loon	H.Grebe	R.N.Grebe	D.C.Corm	G.Corm	Corm spp	G.B.Heron	B	C.Goose	M.Swan	B.D	Mallard	Scaup	т
Date	õ	ğ	ebe	ebe	ŝ	ŝ	spi	ř	Brant	ŌSe	Nar	.Duck	laro	au	Eider
11/23/80	7	<b>1</b> 4	340	1		1401	34	12	1237	85	<b>_</b> 0	1989	71	2356	9350
11/29/81	1	5	60	2	11	425	0	1	1697	0	0	1277	62	679	5908
11/13/82	13	13	184	0	153	3	0	2	378	17	1	789	16	48	2138
11/19/83	118	17	403	16	69	233	77	7	1756	5	0	1752	98	912	9129
11/13/88	2	2	68	0	170	0	5	29	1182	7	0	1174	119	326	295
12/10/89	0	4	58	6	31	39	1	4	1090	205	6	2871	404	796	3657
11/18/90 11/24/91	2 23	9 13	64 169	1 5	118 86	34 61	46 99	20 30	1417 1959	31 67	0 12	1430 1199	102 117	176 1059	2419 8723
11/22/92	11	6	253	28	57	36	9	29	1516	141	9	1297	154	448	5438
11/14/93	57	10	349	14	211	15	83	28	1467	44	4	1288	102	127	264
11/20/94	23	4	195	11	341	25	194	23	1454	332	2	1145	140	95	5908
11/19/95	69	36	189	20	188	10	81	7	1476	135	5	1311	248	54	5431
11/24/96	41	6	158	6	18	85	0	4	945	186	5	651	78	52	10825
11/16/97	75	24	279	16	89	10	30	24	868	422	12	796	199	76	7116
11/22/98	128	22	420	99	40	22	255	13	997	645	9	902	125	753	10802
11/21/99	118	35	619	71	339	25	433	30	1295	436	13	615	130	507	9748
11/12/00	123 77	43 17	324 357	31 89	1606 69	34 29	63 330	16 11	1219 833	432 332	8 7	462 342	147 64	307 504	13280 8025
11/18/01 11/23/03	41	22	357 287	102	69 127	29 26	330 49	16	833 2327	332 577	11	342 378	64 107	504 615	8025 9508
11/23/03	122	46	436	45	69	18	49 57	15	673	674	8	733	107	917	9508 8014
11/21/04	122	40	400	40	00	10	57	15	0/0	0/4	0	/00	100	517	0014
AVERAGE	53	17	261	28	191	127	92	16	1289	239	6	1120	129	540	6799
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Da	Scot	Gldne	Bufl	R.B.Me	L.T.Du	B.B.P	Sndrlir	P.Sar	Dunl	Bnparte	BI.Hd.Gu	Harb Se	otal Specie	Total Bird	Party Hou
Date	Scoter	Gldneye	Buflhd	R.B.Merg	L.T.Duck	B.B.Plo	Sndrling	P.Sand	Dunlin	Bnpartes	BI.Hd.Gull	Seal	Total Species	Birds	Party Hours
11/23/80	705	504	1612	2596	59	48	23	508	450	55	1	Seal 1	38	Birds 16920	25
11/23/80 11/29/81	705 904	504 157	1612 775	2596 997	59 0	48 25	23 5	508 87	450 527	55 253	1 1	<b>Seal</b> 1 0	38 33	Birds 16920 10128	25 25
11/23/80 11/29/81 11/13/82	705 904 444	504 157 39	1612 775 1233	2596 997 903	59 0 2	48 25 15	23 5 4	508 87 85	450 527 56	55 253 230	1 1 0	<b>Seal</b> 1 0 2	38 33 28	Birds 16920 10128 3755	25 25 22
11/23/80 11/29/81	705 904	504 157	1612 775	2596 997	59 0	48 25	23 5	508 87	450 527	55 253	1 1	<b>Seal</b> 1 0	38 33	Birds 16920 10128	25 25 22 25
11/23/80 11/29/81 11/13/82 11/19/83	705 904 444 1280	504 157 39 354	1612 775 1233 2775	2596 997 903 2846	59 0 2 261	48 25 15 309	23 5 4 33	508 87 85 80	450 527 56 657	55 253 230 765	1 1 0 1	Seal 1 0 2 2	38 33 28 39	<b>Birds</b> 16920 10128 3755 14592	25 25 22
11/23/80 11/29/81 11/13/82 11/19/83 11/13/88	705 904 444 1280 413	504 157 39 354 391	1612 775 1233 2775 2141	2596 997 903 2846 767	59 0 2 261 0	48 25 15 309 11	23 5 4 33 10	508 87 85 80 8	450 527 56 657 87	55 253 230 765 712	1 1 0 1 5	Seal 1 0 2 2 2	38 33 28 39 28	<b>Birds</b> 16920 10128 3755 14592 3379	25 25 22 25 22.75
11/23/80 11/29/81 11/13/82 11/19/83 11/13/88 12/10/89 11/18/90 11/24/91	705 904 444 1280 413 504 397 438	504 157 39 354 391 1316 321 611	1612 775 1233 2775 2141 2552 2866 1902	2596 997 903 2846 767 1235 2494 2345	59 0 261 0 18 35 23	48 25 15 309 11 2 45 27	23 5 4 33 10 153 206 100	508 87 85 80 8 68 1 25	450 527 56 657 87 45 95 304	55 253 230 765 712 26 861 1497	1 0 1 5 3 15 4	Seal 1 0 2 2 2 13 2 4	38 33 28 39 28 29 34 38	<b>Birds</b> 16920 10128 3755 14592 3379 9172 5869 13622	25 25 22 25 22.75 38.5 28.75 28.5
11/23/80 11/29/81 11/13/82 11/19/83 11/13/88 12/10/89 11/18/90 11/24/91 11/22/92	705 904 444 1280 413 504 397 438 1848	504 157 39 354 391 1316 321 611 1017	1612 775 1233 2775 2141 2552 2866 1902 3162	2596 997 903 2846 767 1235 2494 2345 3039	59 0 2 261 0 18 35 23 36	48 25 309 11 2 45 27 13	23 5 4 33 10 153 206 100 324	508 87 85 80 8 68 1 25 13	450 527 56 657 87 45 95 304 265	55 253 230 765 712 26 861 1497 863	1 1 5 3 15 4 4	<b>Seal</b> 1 2 2 2 13 2 4 11	38 33 28 39 28 29 34 38 30	Birds 16920 10128 3755 14592 3379 9172 5869 13622 9432	25 25 22 25 22.75 38.5 28.75 28.5 38.75
11/23/80 11/29/81 11/13/82 11/19/83 11/13/88 12/10/89 11/18/90 11/24/91 11/22/92 11/14/93	705 904 444 1280 413 504 397 438 1848 828	504 157 39 354 391 1316 321 611 1017 528	1612 775 1233 2775 2141 2552 2866 1902 3162 2077	2596 997 903 2846 767 1235 2494 2345 3039 2444	59 0 261 0 18 35 23 36 0	48 25 15 309 11 2 45 27 13 66	23 5 4 33 10 153 206 100 324 113	508 87 85 80 8 68 1 25 13 301	450 527 56 657 87 45 95 304 265 33	55 253 230 765 712 26 861 1497 863 394	1 1 5 3 15 4 4 3	Sea 1 0 2 2 13 2 4 11 18	38 33 28 39 28 29 34 38 30 33	Birds 16920 10128 3755 14592 3379 9172 5869 13622 9432 4063	25 25 22 25 22.75 38.5 28.75 28.5 38.75 34.75
11/23/80 11/29/81 11/13/82 11/19/83 11/13/88 12/10/89 11/18/90 11/24/91 11/22/92 11/14/93 11/20/94	705 904 444 1280 413 504 397 438 1848 828 789	504 157 39 354 391 1316 321 611 1017 528 325	1612 775 1233 2775 2141 2552 2866 1902 3162 2077 2093	2596 997 903 2846 767 1235 2494 2345 3039 2444 2050	59 0 2 261 0 18 35 23 36 0 0	48 25 309 11 2 45 27 13 66 2	23 5 4 33 10 153 206 100 324 113 4	508 87 85 80 8 68 1 25 13 301 4	450 527 56 657 87 45 95 304 265 33 37	55 253 230 765 712 26 861 1497 863 394 1112	1 1 5 3 15 4 3 1	Seal 1 0 2 2 2 13 2 4 11 18 15	38 33 28 39 28 29 34 38 30 33 33	<b>B</b> 16920 10128 3755 14592 3379 9172 5869 13622 9432 4063 9892	25 25 22 25 22.75 38.5 28.75 28.5 38.75 38.75 34.75 33
11/23/80 11/29/81 11/13/82 11/13/82 11/13/88 12/10/89 11/18/90 11/24/91 11/22/92 11/14/93 11/20/94 11/19/95	705 904 444 1280 413 504 397 438 1848 828 789 2266	504 157 39 354 391 1316 321 611 1017 528 325 263	1612 775 1233 2775 2141 2552 2866 1902 3162 2077 2093 1836	2596 997 903 2846 767 1235 2494 2345 3039 2444 2050 1899	59 0 261 0 18 35 23 36 0 0 16	48 25 309 11 2 45 27 13 66 2 58	23 5 4 33 10 153 206 100 324 113 4 525	508 87 85 80 8 68 1 25 13 301 4 29	450 527 56 657 87 45 95 304 265 33 37 221	55 253 230 765 712 26 861 1497 863 394 1112 1084	1 0 1 5 3 15 4 3 1 5	Seal 1 0 2 2 2 13 2 4 11 18 15 9	38 33 28 39 28 29 34 38 30 33 33 33	<b>B</b> rds 16920 10128 3755 14592 3379 9172 5869 9432 4063 9892 9260	25 25 22 25 22.75 38.5 28.75 28.5 38.75 34.75 33 34.5
11/23/80 11/29/81 11/13/82 11/19/83 11/13/88 12/10/89 11/18/90 11/24/91 11/22/92 11/14/93 11/20/94 11/19/95 11/24/96	705 904 444 1280 413 504 397 438 1848 828 789 2266 730	504 157 39 354 391 1316 321 611 1017 528 325 263 174	1612 775 1233 2775 2141 2552 2866 1902 3162 2077 2093 1836 1416	2596 997 903 2846 767 1235 2494 2345 3039 2444 2050 1899 966	59 0 261 0 18 35 23 36 0 0 16 41	48 25 309 11 2 45 27 13 66 2 58 31	23 5 4 33 10 153 206 100 324 113 4 525 63	508 87 85 80 8 68 1 25 13 301 4 29 0	450 527 56 657 87 45 95 304 265 33 37 221 2	55 253 230 765 712 26 861 1497 863 394 1112 1084 445	1 0 1 5 3 15 4 3 1 5 1 5	Seal 1 0 2 2 2 13 2 4 11 18 15 9 9	38 33 28 39 28 29 34 38 30 33 33 35 31	Birds 16920 10128 3755 14592 3379 9172 5869 13622 9432 9403 9892 9260 13060	25 25 22 25 22.75 38.5 28.75 28.5 38.75 38.75 34.75 33 34.5 37.75
11/23/80 11/29/81 11/13/82 11/19/83 11/13/88 12/10/89 11/18/90 11/24/91 11/22/92 11/14/93 11/20/94 11/19/95 11/24/96 11/16/97	705 904 444 1280 413 504 397 438 1848 828 789 2266 730 3922	504 157 39 354 391 1316 321 611 1017 528 325 263	1612 775 1233 2775 2141 2552 2866 1902 3162 2077 2093 1836	2596 997 903 2846 767 1235 2494 2345 3039 2444 2050 1899	59 0 261 0 18 35 23 36 0 0 16	48 25 309 11 2 45 27 13 66 2 58	23 5 4 33 10 153 206 100 324 113 4 525	508 87 85 80 8 68 1 25 13 301 4 29	450 527 56 657 87 45 95 304 265 33 37 221	55 253 230 765 712 26 861 1497 863 394 1112 1084 445 575	1 0 1 5 3 15 4 3 1 5	Seal 1 0 2 2 2 13 2 4 11 18 15 9	38 33 28 39 28 29 34 38 30 33 33 33	Birds 16920 10128 3755 14592 9172 5869 13622 9432 4063 9892 9260 13060 13060 10036	25 25 22 25 22.75 38.5 28.75 28.5 38.75 34.75 34.75 34.5 37.75 39.25
11/23/80 11/29/81 11/13/82 11/19/83 11/13/88 12/10/89 11/18/90 11/24/91 11/22/92 11/14/93 11/20/94 11/19/95 11/24/96	705 904 444 1280 413 504 397 438 1848 828 789 2266 730	504 157 39 354 391 1316 321 611 1017 528 325 263 174 188	1612 775 1233 2775 2141 2552 2866 1902 3162 2077 2093 1836 1416 1490	2596 997 903 2846 767 1235 2494 2345 3039 2444 2050 1899 966 1047	59 0 2 261 0 18 35 23 36 0 0 16 41 27	48 25 15 309 11 2 45 27 13 66 2 58 31 13	23 5 4 33 10 153 206 100 324 113 4 525 63 17	508 87 85 80 8 68 1 25 13 301 4 29 0 121	450 527 56 657 87 45 95 304 265 33 37 221 2 8	55 253 230 765 712 26 861 1497 863 394 1112 1084 445	1 1 5 3 15 4 4 3 1 5 1 0	Seal 1 0 2 2 2 13 2 4 11 18 15 9 9 4	38 33 28 39 28 29 34 38 30 33 33 35 31 38	Birds 16920 10128 3755 14592 3379 9172 5869 13622 9432 9403 9892 9260 13060	25 25 22 25 22.75 38.5 28.75 28.5 38.75 38.75 34.75 33 34.5 37.75
11/23/80 11/29/81 11/13/82 11/19/83 11/13/88 12/10/89 11/18/90 11/24/91 11/22/92 11/14/93 11/20/94 11/19/95 11/24/96 11/16/97 11/22/98	705 904 444 1280 413 504 397 438 1848 828 789 2266 730 3922 2725	504 157 39 354 391 1316 321 611 1017 528 325 263 174 188 516	1612 775 1233 2775 2141 2552 2866 1902 3162 2077 2093 1836 1416 1490 2400	2596 997 903 2846 767 1235 2494 2345 3039 2444 2050 1899 966 1047 2110	59 0 2 261 0 18 35 23 36 0 0 16 41 27 97	48 25 15 309 11 2 45 27 13 66 2 58 31 13 8	23 5 4 33 10 153 206 100 324 113 4 525 63 17 358	508 87 85 80 8 68 1 25 13 301 4 29 0 121 27	450 527 56 657 87 45 95 304 265 33 37 221 2 2 8 0	55 253 230 765 712 26 861 1497 863 394 1112 1084 445 575 1179	1 1 0 1 5 3 15 4 4 3 1 5 1 0 1	Seal 1 0 2 2 2 2 2 13 2 4 11 18 15 9 9 4 18	38 33 28 39 28 29 34 38 30 33 33 35 31 38 37	Birds 16920 10128 3755 14592 3379 9172 5869 13622 9432 4063 9892 9260 13060 10036 15232	25 25 22 25 22.75 38.5 28.75 38.75 34.75 34.75 34.5 37.75 39.25 38.25
11/23/80 11/29/81 11/13/82 11/13/82 11/13/83 12/10/89 11/18/90 11/24/91 11/22/92 11/14/93 11/20/94 11/19/95 11/24/96 11/16/97 11/22/98 11/22/98 11/12/199 11/12/100	705 904 444 1280 413 504 438 1848 828 789 2266 730 3922 2725 2362 2362 2008 715	504 157 39 354 391 1316 321 611 1017 528 325 263 174 188 516 461 53 147	1612 775 1233 2775 2141 2552 2866 1902 3162 2077 2093 1836 1416 1490 2400 3021 2177 1941	2596 997 903 2846 767 1235 2494 2345 3039 2444 2050 1899 966 1047 2110 2876 2285 1563	59 0 2 261 0 18 35 23 36 0 16 41 27 97 17 87 59	48 25 309 11 2 45 27 13 66 2 58 31 13 8 10 52 10	23 5 4 33 10 153 206 100 324 113 4 525 63 17 358 245 366 467	508 87 85 80 88 1 25 13 301 4 29 0 121 27 391 6 3	450 527 56 657 87 45 95 304 265 33 37 221 2 8 0 58 13 82	55 253 230 765 712 26 861 1497 863 394 1112 1084 445 575 1179 528	$ \begin{array}{c} 1 \\ 1 \\ 0 \\ 1 \\ 5 \\ 3 \\ 15 \\ 4 \\ 3 \\ 1 \\ 5 \\ 1 \\ 0 \\ 1 \\ 2 \\ 1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0$	Seal 1 0 2 2 2 3 2 4 13 2 4 11 18 15 9 9 4 18 3 14 8	38 33 28 39 28 29 34 38 30 33 33 35 31 38 37 37 40 35	Birds 16920 10128 3755 14592 3379 9172 5869 9432 4063 9892 9260 13060 13060 13060 13060 13060 13060 13060 14014 18095 11086	25 25 22 25 22.75 28.5 38.75 34.75 34.75 34.5 33.3 34.5 37.75 39.25 38.25 36.5 39.25 38.5
11/23/80 11/29/81 11/13/82 11/19/83 11/13/88 12/10/89 11/18/90 11/24/91 11/22/92 11/14/93 11/20/94 11/19/95 11/24/96 11/16/97 11/22/98 11/21/99 11/12/09 11/18/01 11/12/303	705 904 444 1280 413 504 438 1848 828 789 2266 730 3922 2725 2362 2362 2362 2008 715 1372	504 157 39 354 391 1316 321 611 1017 528 325 263 174 188 516 461 53 147 224	1612 775 1233 2775 2141 2552 2866 1902 2077 2093 1836 1416 1490 2400 3021 2177 1941 1560	2596 997 903 2846 767 1235 2494 2345 3039 2444 2050 1899 966 1047 2110 2876 1563 1358	59 0 2 261 0 18 35 23 36 0 16 41 27 97 17 87 59 67	48 25 309 11 2 45 27 13 66 2 58 31 13 8 10 52 10 25	23 5 4 33 10 153 206 100 324 113 4 525 63 17 358 245 366 467 90	508 87 85 80 8 68 1 25 13 301 4 29 0 121 27 391 6 3 178	450 527 56 657 87 45 95 304 265 333 7 221 2 8 0 58 8 0 58 33 221 2 8 0 58 33 221	55 253 230 765 712 26 861 1497 863 394 1112 1084 445 575 1179 528 202 169	$ \begin{array}{c} 1 \\ 1 \\ 0 \\ 1 \\ 5 \\ 3 \\ 15 \\ 4 \\ 4 \\ 3 \\ 1 \\ 5 \\ 1 \\ 0 \\ 1 \\ 2 \\ 1 \\ 0 \\ 0 \\ \end{array} $	Seal 1 0 2 2 2 13 2 4 11 18 15 9 9 4 18 53 14 8 4	38 33 28 39 28 29 34 38 30 33 33 35 31 38 37 37 40 35 29	Birds 16920 10128 3755 14592 3379 9172 5869 13622 9432 4063 9892 9260 13060 100366 15232 14414 18095 11086 14193	25 25 22 25 22.75 38.5 28.75 38.75 38.75 34.75 39.25 39.25 38.25 36.5 39.25 38.5 37.75
11/23/80 11/29/81 11/13/82 11/13/82 11/13/83 12/10/89 11/18/90 11/24/91 11/22/92 11/14/93 11/20/94 11/19/95 11/24/96 11/16/97 11/22/98 11/22/98 11/12/199 11/12/100	705 904 444 1280 413 504 438 1848 828 789 2266 730 3922 2725 2362 2362 2008 715	504 157 39 354 391 1316 321 611 1017 528 325 263 174 188 516 461 53 147	1612 775 1233 2775 2141 2552 2866 1902 3162 2077 2093 1836 1416 1490 2400 3021 2177 1941	2596 997 903 2846 767 1235 2494 2345 3039 2444 2050 1899 966 1047 2110 2876 2285 1563	59 0 2 261 0 18 35 23 36 0 16 41 27 97 17 87 59	48 25 309 11 2 45 27 13 66 2 58 31 13 8 10 52 10	23 5 4 33 10 153 206 100 324 113 4 525 63 17 358 245 366 467	508 87 85 80 88 1 25 13 301 4 29 0 121 27 391 6 3	450 527 56 657 87 45 95 304 265 33 37 221 2 8 0 58 13 82	55 253 230 765 712 26 861 1497 863 394 1112 1084 445 575 1179 528 208 208	$ \begin{array}{c} 1 \\ 1 \\ 0 \\ 1 \\ 5 \\ 3 \\ 15 \\ 4 \\ 3 \\ 1 \\ 5 \\ 1 \\ 0 \\ 1 \\ 2 \\ 1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0$	Seal 1 0 2 2 2 3 2 4 13 2 4 11 18 15 9 9 4 18 3 14 8	38 33 28 39 28 29 34 38 30 33 33 35 31 38 37 37 40 35	Birds 16920 10128 3755 14592 3379 9172 5869 9432 4063 9892 9260 13060 13060 13060 13060 13060 13060 13060 14014 18095 11086	25 25 22 25 22.75 28.5 38.75 34.75 34.75 34.5 33.3 34.5 37.75 39.25 38.25 36.5 39.25 38.5

Craig Jackson, Wayne Petersen, Leif Robinson, Bob Stymeist, Soheil Zendeh, and others agreed that a series of systematic censuses of the Harbor were needed. Robinson suggested the name Take A Second Look (TASL) and it stuck. The name implies that birding for many, although still a hobby, involves much more than simply listing species. TASLing means looking at birds more closely — studying them with the larger project goals in mind — and that means counting common species, observing behavior, and keeping track of seasonal variations.

Table 1B - Factors impacting November censuses.

Date	
11/23/80	Missing approximately 5% of currrent sites.
11/29/81	Missing approximately 5% of current sites; rough seas.
11/13/82	Missing approximately 5% of current sites; heavy rain; no data from Weymouth or Hull.
11/19/83	Missing approximately 5% of current sites.
11/13/88	No data from Nahant and 75% of Hull; rough seas.
12/10/89	No access to Deer I.
11/18/90	No access to Deer I., rough seas.
11/24/91	Drizzle, rough seas, no data from 85% of Hull.
11/22/92	
11/14/93	
11/20/94	Rough seas.
11/19/95	
11/24/96	
11/16/97	
11/22/98	
11/21/99	
11/12/00	Eastern Wollaston Bay not covered.
11/18/01	
11/23/03	
11/21/04	

Pilot surveys were conducted in 1978 and 1979, but 1980 marked the official beginning of the TASL Boston Harbor bird census project. For the first two years surveys were undertaken in November, February, March, and once in April. In 1982 a January count was added. After five years a decision was made to cut back to just one midwinter census in January. However, in 1988 the Massachusetts Audubon Society's Boston office, with a mandate to monitor the conditions of the Harbor prior to the Harbor cleanup provided an infusion of new volunteers to the TASL project. In subsequent years surveys were made in November, January, February, and sporadically in March.

#### The Counts

For TASL purposes, "Boston Harbor" extends from the eastern tip of Nahant, south to Allerton Point in Hull. The Harbor is divided into seven count areas: Nahant, Winthrop, Central, Squantum, Hough's Neck, Weymouth, and Hull. There are approximately 130 specific points within these seven areas from which observations are made. The surveys are conducted on Sundays and are typically scheduled to coincide with midmorning high tides so that birds will presumably be closer to the observers. To ensure the synchrony of observations, eight to ten teams, each made up of one to four people, work simultaneously in the seven count areas. Overall, the Harbor is fully covered during approximately a four-hour window. For consistency, teams have been kept together and cover the same areas as much as possible.

Participants count all waterbirds (i.e., ducks, geese, waders, shorebirds, alcids, and gulls (with the exception of Herring, Ring-billed, and Great Black-backed gulls). Raptors, seals, and relatively rare passerines and terrestrial mammals are also routinely reported. Participants are asked to record the time at each observation point and to note birds flying to or from another team's area or birds that may be observed from another area. This information is evaluated during the compilation in order to minimize obvious double counts.

#### Results

Results from the November, January, and February counts can be found in Tables 1A, 2A, and 3A respectively.

There are several factors that have complicated year-to-year comparisons of our data set, beginning with an increase in the number of censuses and participants resulting from the involvement of the Massachusetts Audubon Society. Several areas that had previously been covered by just one team were subsequently divided into two

Table 1C - Birds per party hour-Novmber.

Date 11/23/80 11/29/81 11/13/82 11/13/88 12/10/89 11/18/90 11/24/91 11/22/92 11/14/93 11/22/92 11/14/93 11/22/98 11/22/98 11/22/99 11/12/199 11/12/104	<b>R.T. Loon</b> 0.28 0.04 0.59 4.72 0.09 0.00 0.00 0.07 0.81 0.28 1.64 1.64 2.00 1.09 1.91 3.35 3.23 3.13 2.00 1.09 1.09	<b>C</b> 55 0.56 0.20 0.59 0.68 0.09 0.10 0.31 0.46 0.15 0.29 0.12 1.04 0.16 0.58 0.58 0.58 0.58 0.10 0.58 0.56 0.12 0.12 0.15 0.20 0.15 0.20 0.20 0.59 0.15 0.20 0.20 0.20 0.15 0.20 0.20 0.15 0.20 0.20 0.15 0.20 0.20 0.15 0.20 0.20 0.15 0.20 0.15 0.20 0.15 0.20 0.15 0.20 0.15 0.20 0.15 0.20 0.15 0.20 0.15 0.20 0.15 0.20 0.15 0.20 0.15 0.20 0.15 0.20 0.15 0.20 0.15 0.20 0.15 0.15 0.12 0.15 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12	H.Grebe 13.60 2.40 8.36 16.12 2.99 1.51 2.23 6.53 10.04 5.48 4.19 7.11 10.98 16.96 8.25 9.27 7.60 11.11	0.58 0.16 0.41 2.59 1.95	D.C.Com 0.92 2.76 7.47 0.81 3.02 1.47 6.07 3.04 8.2.27 1.05 9.29 40.92 1.79 3.36 1.76	G.Corm 56.04 17.00 0.14 9.32 0.00 1.01 1.18 2.14 0.93 0.43 0.76 0.29 2.25 0.25 0.25 0.25 0.25 0.58 0.68 0.87 0.75 0.69 0.46	Corm spp 1.36 0.00 0.00 3.08 0.22 0.03 3.47 0.23 2.39 0.76 6.67 11.86 6.67 1.1.86 1.61 8.57 1.30 1.45	<b>G.B.Heron</b> 0.48 0.09 0.28 1.27 0.10 0.70 0.70 0.70 0.70 0.70 0.70 0.7	Brant 49.48 67.88 17.18 70.24 28.31 49.29 68.74 42.22 44.06 42.78 22.11 26.03 22.11 26.03 22.11 26.03 31.06 21.64 61.64 61.64 61.64 61.64 61.715	<b>C.Googe</b> 3.40 0.00 0.77 0.20 0.31 5.32 1.08 2.35 3.64 1.27 10.06 3.91 4.93 10.75 16.86 11.95 11.01 8.62 15.28 17.17	M.Swan 0.00 0.05 0.00 0.42 0.23 0.12 0.06 0.14 0.31 0.31 0.24 0.36 0.20 0.18 0.20 0.20	<b>B. Duck</b> 79.56 51.08 35.86 70.08 51.60 74.57 49.74 42.07 33.47 33.47 33.47 33.47 33.47 33.47 33.58 10.25 20.28 23.58 16.85 11.77 8.88 10.68	Mallard 4 2.48 2.48 0.73 3.92 5.23 10.49 3.55 4.11 2.94 4.24 7.19 2.07 3.56 3.27 3.26 3.27 3.56 2.83 2.70	11.56 3.65 2.88 1.57 1.38 1.94 19.69 13.89 7.82 13.09 16.29	<b>Eide</b> 374.00 236.32 97.18 365.16 12.97 94.99 84.14 306.07 179.03 179.03 175.42 286.75 181.30 282.41 267.07 338.34 206.41 267.07 338.34 204.18
AVERAGE	1.51	0.51	7.83	0.76	5.54	4.79	2.64	0.30	40.57	6.44	0.15	36.25	3.83		203.78
AVENAGE	1.51	0.51	7.05	0.70	5.54	4.75	2.04	0.45	40.57	0.44	0.15	30.23		17.77	203.70
				_	_					_		-	Total	7	
Date	Scoter	Gldneye	Buflhd	R.B.Merg	L.T.Duck	B.B.Plo	Sndrling	P.Sand	Dunlin	Bnpartes	I.Hd.Gul	Harb Sea	Species	tal Birds	
Date 11/23/80	<b>Scoter</b> 28.20	Gidneye 20.16			L.T.Duck 6	<b>B.B.PIO</b> 1.92		P.Sand 20.32	<b>Dunlin</b> 18.00	Bnpartes 2.20	<b>BI.Hd.Gull</b> 0.04	<b>Seal</b> 0.04		Total Birds 939.24	
11/23/80 11/29/81	28.20 36.16	20.16 6.28	64.48 31.00	103.84 39.88	2.36 0.00	1.92 1.00	0.92 0.20	20.32 3.48	18.00 21.08	2.20 10.12	0.04 0.04	0.04 0.00	1.52 1.32	939.24 554.36	
11/23/80	28.20	20.16	64.48 31.00 56.05	103.84	2.36	1.92 1.00 0.68	0.92	20.32 3.48 3.86	18.00	2.20	0.04	<b>Seal</b> 0.04	1.52 1.32 1.27	939.24 554.36	
11/23/80 11/29/81 11/13/82	28.20 36.16 20.18	20.16 6.28 1.77	64.48 31.00 56.05	103.84 39.88 41.05	2.36 0.00 0.09	1.92 1.00	0.92 0.20 0.18	20.32 3.48	18.00 21.08 2.55	2.20 10.12 10.45	0.04 0.04 0.00	0.04 0.00 0.09	1.52 1.32 1.27 1.56	939.24 554.36 307.55	
11/23/80 11/29/81 11/13/82 11/19/83 11/13/88 12/10/89	28.20 36.16 20.18 51.20 18.15 13.09	20.16 6.28 1.77 14.16 17.19 34.18	64.48 31.00 56.05 111.00 94.11 66.29	103.84 39.88 41.05 113.84 33.71 32.08	2.36 0.00 0.09 10.44 0.00 0.47	1.92 1.00 0.68 12.36 0.48 0.05	0.92 0.20 0.18 1.32 0.44 3.97	20.32 3.48 3.86 3.20 0.35 1.77	18.00 21.08 2.55 26.28 3.82 1.17	2.20 10.12 10.45 30.60 31.30 0.68	0.04 0.04 0.00 0.04 0.22 0.08	<b>Sea</b> 0.04 0.09 0.08 0.09 0.34	1.52 1.32 1.27 1.56 1.23 0.75	939.24 554.36 307.55 958.12 348.31 392.05	
11/23/80 11/29/81 11/13/82 11/19/83 11/13/88 12/10/89 11/18/90	28.20 36.16 20.18 51.20 18.15 13.09 13.81	20.16 6.28 1.77 14.16 17.19 34.18 11.17	64.48 31.00 56.05 111.00 94.11 66.29 99.69	103.84 39.88 41.05 113.84 33.71 32.08 86.75	2.36 0.00 0.09 10.44 0.00 0.47 1.22	1.92 1.00 0.68 12.36 0.48 0.05 1.57	0.92 0.20 0.18 1.32 0.44 3.97 7.17	20.32 3.48 3.86 3.20 0.35 1.77 0.03	18.00 21.08 2.55 26.28 3.82 1.17 3.30	2.20 10.12 10.45 30.60 31.30 0.68 29.95	0.04 0.04 0.00 0.04 0.22 0.08 0.52	<b>Sea</b> 0.04 0.09 0.08 0.09 0.34 0.07	1.52 1.32 1.27 1.56 1.23 0.75 1.18	939.24 554.36 307.55 958.12 348.31 392.05 459.30	
11/23/80 11/29/81 11/13/82 11/19/83 11/13/88 12/10/89 11/18/90 11/24/91	28.20 36.16 20.18 51.20 18.15 13.09 13.81 15.37	20.16 6.28 1.77 14.16 17.19 34.18 11.17 21.44	64.48 31.00 56.05 111.00 94.11 66.29 99.69 66.74	103.84 39.88 41.05 113.84 33.71 32.08 86.75 82.28	2.36 0.00 0.09 10.44 0.00 0.47 1.22 0.81	1.92 1.00 0.68 12.36 0.48 0.05 1.57 0.95	0.92 0.20 0.18 1.32 0.44 3.97 7.17 3.51	20.32 3.48 3.86 3.20 0.35 1.77 0.03 0.88	18.00 21.08 2.55 26.28 3.82 1.17 3.30 10.67	2.20 10.12 10.45 30.60 31.30 0.68 29.95 52.53	0.04 0.04 0.00 0.04 0.22 0.08 0.52 0.14	Seal 0.04 0.09 0.08 0.09 0.34 0.07 0.14	1.52 1.32 1.27 1.56 1.23 0.75 1.18 1.33	939.24 554.36 307.55 958.12 348.31 392.05 459.30 733.26	
11/23/80 11/29/81 11/13/82 11/19/83 11/13/88 12/10/89 11/18/90 11/24/91 11/22/92	28.20 36.16 20.18 51.20 18.15 13.09 13.81 15.37 47.69	20.16 6.28 1.77 14.16 17.19 34.18 11.17 21.44 26.25	64.48 31.00 56.05 111.00 94.11 66.29 99.69 66.74 81.60	103.84 39.88 41.05 113.84 33.71 32.08 86.75 82.28 78.43	2.36 0.00 0.09 10.44 0.00 0.47 1.22 0.81 0.93	1.92 1.00 0.68 12.36 0.48 0.05 1.57 0.95 0.34	0.92 0.20 0.18 1.32 0.44 3.97 7.17 3.51 8.36	20.32 3.48 3.86 3.20 0.35 1.77 0.03 0.88 0.34	18.00 21.08 2.55 26.28 3.82 1.17 3.30 10.67 6.84	2.20 10.12 10.45 30.60 31.30 0.68 29.95 52.53 22.27	0.04 0.04 0.00 0.04 0.22 0.08 0.52 0.14 0.10	<b>Sen</b> 0.04 0.09 0.08 0.09 0.34 0.07 0.14 0.28	1.52 1.27 1.56 1.23 0.75 1.18 1.33 0.77	939.24 554.36 307.55 958.12 348.31 392.05 459.30 733.26 516.54	
11/23/80 11/29/81 11/13/82 11/19/83 11/13/88 12/10/89 11/18/90 11/24/91 11/22/92 11/14/93	28.20 36.16 20.18 51.20 18.15 13.09 13.81 15.37 47.69 23.83	20.16 6.28 1.77 14.16 17.19 34.18 11.17 21.44 26.25 15.19	64.48 31.00 56.05 111.00 94.11 66.29 99.69 66.74 81.60 59.77	103.84 39.88 41.05 113.84 33.71 32.08 86.75 82.28 78.43 70.33	2.36 0.00 10.44 0.00 0.47 1.22 0.81 0.93 0.00	1.92 1.00 0.68 12.36 0.48 0.05 1.57 0.95 0.34 1.90	0.92 0.20 0.18 1.32 0.44 3.97 7.17 3.51 8.36 3.25	20.32 3.48 3.86 3.20 0.35 1.77 0.03 0.88 0.34 8.66	18.00 21.08 2.55 26.28 3.82 1.17 3.30 10.67 6.84 0.95	2.20 10.12 10.45 30.60 31.30 0.68 29.95 52.53 22.27 11.34	0.04 0.04 0.00 0.04 0.22 0.08 0.52 0.14 0.10 0.09	Sea 0.04 0.09 0.08 0.09 0.34 0.07 0.14 0.28 0.52	1.52 1.32 1.27 1.56 1.23 0.75 1.18 1.33 0.77 0.95	939.24 554.36 307.55 958.12 348.31 392.05 459.30 733.26 516.54 312.23	
11/23/80 11/29/81 11/13/82 11/19/83 11/13/88 12/10/89 11/24/91 11/22/92 11/12/92	28.20 36.16 20.18 51.20 18.15 13.09 13.81 15.37 47.69 23.83 23.91	20.16 6.28 1.77 14.16 17.19 34.18 11.17 21.44 26.25 15.19 9.85	64.48 31.00 56.05 111.00 94.11 66.29 99.69 66.74 81.60 59.77 63.42	$\begin{array}{c} 103.84\\ 39.88\\ 41.05\\ 113.84\\ 33.71\\ 32.08\\ 86.75\\ 82.28\\ 78.43\\ 70.33\\ 62.12\\ \end{array}$	2.36 0.00 0.09 10.44 0.00 0.47 1.22 0.81 0.93 0.00 0.00	1.92 1.00 0.68 12.36 0.48 0.05 1.57 0.95 0.34 1.90 0.06	0.92 0.20 0.18 1.32 0.44 3.97 7.17 3.51 8.36 3.25 0.12	20.32 3.48 3.86 3.20 0.35 1.77 0.03 0.88 0.34 8.66 0.12	18.00 21.08 2.55 26.28 3.82 1.17 3.30 10.67 6.84 0.95 1.12	2.20 10.12 10.45 30.60 31.30 0.68 29.95 52.53 22.27 11.34 33.70	0.04 0.04 0.00 0.04 0.22 0.08 0.52 0.14 0.10 0.09 0.03	Seal 0.04 0.09 0.08 0.09 0.34 0.07 0.14 0.28 0.52 0.45	1.52 1.32 1.27 1.56 1.23 0.75 1.18 1.33 0.77 0.95 1.00	939.24 554.36 307.55 958.12 348.31 392.05 459.30 733.26 516.54 312.23 494.21	
11/23/80 11/29/81 11/13/82 11/19/83 11/13/88 12/10/89 11/18/90 11/24/91 11/22/92 11/14/93	28.20 36.16 20.18 51.20 18.15 13.09 13.81 15.37 47.69 23.83	20.16 6.28 1.77 14.16 17.19 34.18 11.17 21.44 26.25 15.19	64.48 31.00 56.05 111.00 94.11 66.29 99.69 66.74 81.60 59.77	103.84 39.88 41.05 113.84 33.71 32.08 86.75 82.28 78.43 70.33	2.36 0.00 10.44 0.00 0.47 1.22 0.81 0.93 0.00	1.92 1.00 0.68 12.36 0.48 0.05 1.57 0.95 0.34 1.90	0.92 0.20 0.18 1.32 0.44 3.97 7.17 3.51 8.36 3.25	20.32 3.48 3.86 3.20 0.35 1.77 0.03 0.88 0.34 8.66	18.00 21.08 2.55 26.28 3.82 1.17 3.30 10.67 6.84 0.95	2.20 10.12 10.45 30.60 31.30 0.68 29.95 52.53 22.27 11.34	0.04 0.04 0.00 0.04 0.22 0.08 0.52 0.14 0.10 0.09	Sea 0.04 0.09 0.08 0.09 0.34 0.07 0.14 0.28 0.52	1.52 1.32 1.27 1.56 1.23 0.75 1.18 1.33 0.77 0.95 1.00 1.01	939.24 554.36 307.55 958.12 348.31 392.05 459.30 733.26 516.54 312.23	
11/23/80 11/29/81 11/13/82 11/13/88 12/10/89 11/13/88 12/10/89 11/12/99 11/22/92 11/12/93 11/20/94 11/19/95	28.20 36.16 20.18 51.20 18.15 13.09 13.81 15.37 47.69 23.83 23.91 65.68	20.16 6.28 1.77 14.16 17.19 34.18 11.17 21.44 26.25 15.19 9.85 7.62	64.48 31.00 56.05 111.00 94.11 66.29 99.69 66.74 81.60 59.77 63.42 53.22	$\begin{array}{c} 103.84\\ 39.88\\ 41.05\\ 113.84\\ 33.71\\ 32.08\\ 86.75\\ 82.28\\ 78.43\\ 70.33\\ 62.12\\ 55.04 \end{array}$	2.36 0.00 0.09 10.44 0.00 0.47 1.22 0.81 0.93 0.00 0.00 0.46	$\begin{array}{c} 1.92 \\ 1.00 \\ 0.68 \\ 12.36 \\ 0.48 \\ 0.05 \\ 1.57 \\ 0.95 \\ 0.34 \\ 1.90 \\ 0.06 \\ 1.68 \end{array}$	0.92 0.20 0.18 1.32 0.44 3.97 7.17 3.51 8.36 3.25 0.12 15.22	20.32 3.48 3.86 3.20 0.35 1.77 0.03 0.88 0.34 8.66 0.12 0.84	18.00 21.08 2.55 26.28 3.82 1.17 3.30 10.67 6.84 0.95 1.12 6.41	2.20 10.12 10.45 30.60 31.30 0.68 29.95 52.53 22.27 11.34 33.70 31.42	0.04 0.04 0.00 0.04 0.22 0.08 0.52 0.14 0.09 0.03 0.14	Seal 0.04 0.09 0.08 0.09 0.34 0.07 0.14 0.28 0.52 0.45 0.26	1.52 1.32 1.27 1.56 1.23 0.75 1.18 1.33 0.77 0.95 1.00 1.01 0.82	939.24 554.36 307.55 958.12 348.31 392.05 459.30 733.26 516.54 312.23 494.21 506.14	
11/23/80 11/29/81 11/13/82 11/19/83 11/13/88 12/10/89 11/24/91 11/22/92 11/14/93 11/20/94 11/12/95 11/24/96	28.20 36.16 20.18 51.20 18.15 13.09 13.81 15.37 47.69 23.83 23.91 65.68 19.34	20.16 6.28 1.77 14.16 17.19 34.18 11.17 21.44 26.25 15.19 9.85 7.62 4.61	64.48 31.00 56.05 111.00 94.11 66.29 99.69 66.74 81.60 59.77 63.42 53.22 37.51	$\begin{array}{c} 103.84\\ 39.88\\ 41.05\\ 113.84\\ 33.71\\ 32.08\\ 86.75\\ 82.28\\ 78.43\\ 70.33\\ 62.12\\ 55.04\\ 25.59\end{array}$	$\begin{array}{c} 2.36 \\ 0.00 \\ 0.09 \\ 10.44 \\ 0.00 \\ 0.47 \\ 1.22 \\ 0.81 \\ 0.93 \\ 0.00 \\ 0.00 \\ 0.46 \\ 1.09 \end{array}$	$\begin{array}{c} 1.92 \\ 1.00 \\ 0.68 \\ 12.36 \\ 0.48 \\ 0.05 \\ 1.57 \\ 0.95 \\ 0.34 \\ 1.90 \\ 0.06 \\ 1.68 \\ 0.82 \end{array}$	$\begin{array}{c} 0.92\\ 0.20\\ 0.18\\ 1.32\\ 0.44\\ 3.97\\ 7.17\\ 3.51\\ 8.36\\ 3.25\\ 0.12\\ 15.22\\ 1.67\\ 0.43\\ 9.36\end{array}$	20.32 3.48 3.86 3.20 0.35 1.77 0.03 0.88 0.34 8.66 0.12 0.84 0.00	18.00 21.08 2.55 26.28 3.82 1.17 3.30 10.67 6.84 0.95 1.12 6.41 0.05	2.20 10.12 10.45 30.60 31.30 0.68 29.95 52.53 22.27 11.34 33.70 31.42 11.79	0.04 0.04 0.00 0.04 0.22 0.08 0.52 0.14 0.09 0.03 0.14 0.03	Sec. 24 0.04 0.09 0.09 0.34 0.07 0.14 0.28 0.52 0.45 0.26 0.24	1.52 1.32 1.27 1.56 1.23 0.75 1.18 1.33 0.77 0.95 1.00 1.01 0.82 0.97	939.24 554.36 307.55 958.12 348.31 392.05 459.30 733.26 516.54 312.23 494.21 506.14 448.45	
11/23/80 11/29/81 11/13/82 11/19/83 11/13/88 12/10/89 11/18/90 11/24/91 11/22/92 11/22/92 11/22/94 11/19/95 11/24/96 11/16/97 11/22/98 11/21/99	28.20 36.16 20.18 51.20 18.15 13.09 13.81 15.37 47.69 23.83 23.91 65.68 19.34 99.92 71.24 64.71	$\begin{array}{c} 20.16\\ 6.28\\ 1.77\\ 14.16\\ 17.19\\ 34.18\\ 11.17\\ 21.44\\ 26.25\\ 15.19\\ 9.85\\ 7.62\\ 4.61\\ 4.79\\ 13.49\\ 12.63\\ \end{array}$	64.48 31.00 56.05 111.00 94.11 66.29 99.69 66.74 81.60 59.77 63.42 53.22 37.51 37.96 62.75 82.77	$\begin{array}{c} 103.84\\ 39.88\\ 41.05\\ 113.84\\ 33.71\\ 32.08\\ 86.75\\ 82.28\\ 78.43\\ 70.33\\ 62.12\\ 55.04\\ 25.59\\ 26.68\\ 55.16\\ 78.79\\ \end{array}$	$\begin{array}{c} 2.36 \\ 0.00 \\ 0.09 \\ 10.44 \\ 0.00 \\ 0.47 \\ 1.22 \\ 0.81 \\ 0.93 \\ 0.00 \\ 0.46 \\ 1.09 \\ 0.69 \\ 2.54 \\ 0.47 \end{array}$	$\begin{array}{c} 1.92 \\ 1.00 \\ 0.68 \\ 12.36 \\ 0.48 \\ 0.05 \\ 1.57 \\ 0.95 \\ 0.34 \\ 1.90 \\ 0.06 \\ 1.68 \\ 0.82 \\ 0.33 \\ 0.21 \\ 0.27 \end{array}$	$\begin{array}{c} 0.92\\ 0.20\\ 0.18\\ 1.32\\ 0.44\\ 3.97\\ 7.17\\ 3.51\\ 8.365\\ 0.12\\ 15.22\\ 1.67\\ 0.43\\ 9.36\\ 6.71 \end{array}$	20.32 3.48 3.86 3.20 0.35 1.77 0.03 0.88 0.34 8.66 0.12 0.84 0.00 3.08 0.71 10.71	$\begin{array}{c} 18.00\\ 21.08\\ 2.55\\ 26.28\\ 3.82\\ 1.17\\ 3.30\\ 10.67\\ 6.84\\ 0.95\\ 1.12\\ 6.41\\ 0.05\\ 0.20\\ 0.00\\ 1.59\\ \end{array}$	2.20 10.12 10.45 30.60 31.30 0.68 29.95 52.53 22.27 11.34 33.70 31.42 11.79 14.65 30.82 14.47	0.04 0.04 0.00 0.04 0.22 0.08 0.52 0.14 0.09 0.03 0.14 0.03 0.00 0.03 0.05	Seal 0.04 0.09 0.08 0.09 0.34 0.07 0.14 0.28 0.52 0.26 0.25 0.26 0.24 0.10 0.47 1.45	1.52 1.32 1.27 1.56 1.23 0.75 1.18 1.33 0.77 0.95 1.00 1.01 0.82 0.97 0.97 1.01	939.24 554.36 307.55 958.12 348.31 392.05 459.30 733.26 516.54 312.23 494.21 506.14 448.45 444.43 644.52 668.08	
11/23/80 11/29/81 11/13/82 11/19/83 11/13/88 12/10/89 11/24/91 11/22/92 11/14/93 11/20/94 11/12/95 11/24/96 11/16/97 11/22/98 11/21/99 11/12/199	28.20 36.16 20.18 51.20 18.15 13.09 13.81 15.37 47.69 23.83 23.91 65.68 19.34 99.92 71.24 64.71 51.16	$\begin{array}{c} 20.16\\ 6.28\\ 1.77\\ 14.16\\ 17.19\\ 34.18\\ 11.17\\ 21.44\\ 26.25\\ 15.19\\ 9.85\\ 7.62\\ 4.61\\ 4.79\\ 13.49\\ 12.63\\ 1.35\\ \end{array}$	$\begin{array}{c} 64.48\\ 31.00\\ 56.05\\ 111.00\\ 94.11\\ 66.29\\ 99.69\\ 66.74\\ 81.60\\ 59.77\\ 63.42\\ 53.22\\ 37.51\\ 37.96\\ 62.75\\ 82.77\\ 55.46\end{array}$	$\begin{array}{c} 103.84\\ 39.88\\ 41.05\\ 113.84\\ 33.71\\ 32.08\\ 86.75\\ 82.28\\ 78.43\\ 70.33\\ 62.12\\ 55.04\\ 25.59\\ 26.68\\ 55.16\\ 78.79\\ 58.22\\ \end{array}$	$\begin{array}{c} 2.36\\ 0.00\\ 0.09\\ 10.44\\ 0.00\\ 0.47\\ 1.22\\ 0.81\\ 0.93\\ 0.00\\ 0.46\\ 1.09\\ 0.69\\ 2.54\\ 0.47\\ 2.22\end{array}$	$\begin{array}{c} 1.92 \\ 1.00 \\ 0.68 \\ 12.36 \\ 0.48 \\ 0.05 \\ 1.57 \\ 0.95 \\ 0.34 \\ 1.90 \\ 0.06 \\ 1.68 \\ 0.82 \\ 0.33 \\ 0.21 \\ 0.27 \\ 1.32 \end{array}$	$\begin{array}{c} 0.92\\ 0.20\\ 0.18\\ 1.32\\ 0.44\\ 3.97\\ 7.17\\ 3.51\\ 8.36\\ 3.25\\ 0.12\\ 15.22\\ 1.67\\ 0.43\\ 9.36\\ 6.71\\ 9.32 \end{array}$	20.32 3.48 3.86 3.20 0.35 1.77 0.03 0.88 0.34 8.66 0.12 0.84 0.00 3.08 0.71 10.71 0.15	$\begin{array}{c} 18.00\\ 21.08\\ 2.55\\ 26.28\\ 3.82\\ 1.17\\ 3.30\\ 10.67\\ 6.84\\ 0.95\\ 1.12\\ 6.41\\ 0.05\\ 0.20\\ 0.00\\ 1.59\\ 0.33\\ \end{array}$	2.20 10.12 10.45 30.60 31.30 0.68 29.95 52.53 22.27 11.34 33.70 31.42 11.79 14.65 30.82 14.47 5.30	0.04 0.04 0.00 0.04 0.22 0.08 0.52 0.14 0.09 0.03 0.03 0.03 0.03 0.03	Seal 0.04 0.09 0.08 0.09 0.34 0.07 0.14 0.28 0.52 0.45 0.26 0.24 0.10 0.47 1.45 0.36	1.52 1.32 1.27 1.56 1.23 0.75 1.18 1.33 0.77 0.95 1.00 1.01 0.82 0.97 0.97 1.01 1.02	939.24 554.36 307.55 958.12 348.31 392.05 459.30 733.26 516.54 312.23 494.21 506.14 448.45 444.43 644.52 668.08 645.89	
11/23/80 11/29/81 11/13/82 11/13/82 11/13/83 11/13/88 12/10/89 11/18/90 11/18/90 11/18/90 11/12/94 11/12/95 11/12/98 11/12/98 11/12/98 11/12/00 11/18/01	28.20 36.16 20.18 51.20 18.15 13.09 13.81 15.37 47.69 23.83 23.91 65.68 19.34 99.92 71.24 64.71 51.16 18.57	20.16 6.28 1.77 14.16 17.19 34.18 11.17 21.44 26.25 15.19 9.85 7.62 4.61 4.79 13.49 12.63 1.35 3.82	$\begin{array}{c} 64.48\\ 31.00\\ 56.05\\ 111.00\\ 94.11\\ 66.29\\ 99.69\\ 66.74\\ 81.60\\ 59.77\\ 63.42\\ 53.22\\ 37.51\\ 37.96\\ 62.75\\ 82.77\\ 55.46\\ 50.42\\ \end{array}$	$\begin{array}{c} 103.84\\ 39.88\\ 41.05\\ 113.84\\ 33.71\\ 32.08\\ 86.75\\ 82.28\\ 78.43\\ 70.33\\ 62.12\\ 55.04\\ 25.59\\ 26.68\\ 55.16\\ 78.79\\ 58.22\\ 40.60\\ \end{array}$	$\begin{array}{c} 2.36\\ 0.00\\ 0.09\\ 10.44\\ 0.00\\ 0.47\\ 1.22\\ 0.81\\ 0.93\\ 0.00\\ 0.46\\ 1.09\\ 0.69\\ 2.54\\ 0.47\\ 2.22\\ 1.53\\ \end{array}$	$\begin{array}{c} 1.92 \\ 1.00 \\ 0.68 \\ 12.36 \\ 0.48 \\ 0.05 \\ 1.57 \\ 0.95 \\ 0.34 \\ 1.90 \\ 0.06 \\ 1.68 \\ 0.82 \\ 0.33 \\ 0.21 \\ 0.27 \\ 1.32 \\ 0.26 \end{array}$	0.92 0.20 0.18 1.32 0.44 3.97 7.17 3.51 8.36 3.25 0.12 15.22 1.67 0.43 9.36 6.71 9.32 12.13	20.32 3.48 3.86 3.20 0.35 1.77 0.03 0.88 0.34 8.66 0.12 0.84 0.00 3.08 0.71 10.71 0.15 0.08	$\begin{array}{c} 18.00\\ 21.08\\ 2.55\\ 26.28\\ 3.82\\ 1.17\\ 3.30\\ 10.67\\ 6.84\\ 0.95\\ 1.12\\ 6.41\\ 0.05\\ 0.20\\ 0.00\\ 1.59\\ 0.33\\ 2.13\\ \end{array}$	$\begin{array}{c} 2.20\\ 10.12\\ 10.45\\ 30.60\\ 31.30\\ 0.68\\ 29.95\\ 52.53\\ 22.27\\ 11.34\\ 33.70\\ 31.42\\ 11.79\\ 14.65\\ 30.82\\ 14.47\\ 5.30\\ 6.81\\ \end{array}$	0.04 0.04 0.00 0.04 0.22 0.08 0.52 0.14 0.09 0.03	Seal 0.04 0.09 0.08 0.09 0.34 0.07 0.14 0.28 0.52 0.45 0.26 0.24 0.10 0.47 1.45 0.36 0.21	1.52 1.32 1.27 1.56 1.23 0.75 1.18 1.33 0.77 0.95 1.00 1.01 0.82 0.97 0.97 1.01 1.02 0.91	939.24 554.36 307.55 958.12 348.31 392.05 459.30 733.26 516.54 312.23 494.21 506.14 448.45 444.43 644.52 668.08 668.08 424.29	
11/23/80 11/29/81 11/13/82 11/19/83 11/13/88 12/10/89 11/24/91 11/22/92 11/14/93 11/20/94 11/12/95 11/24/96 11/16/97 11/22/98 11/21/99 11/12/199	$\begin{array}{c} 28.20\\ 36.16\\ 20.18\\ 51.20\\ 18.15\\ 13.09\\ 13.81\\ 15.37\\ 47.69\\ 23.83\\ 23.91\\ 65.68\\ 19.34\\ 99.92\\ 71.24\\ 64.71\\ 51.16\\ 18.57\\ 36.34 \end{array}$	$\begin{array}{c} 20.16\\ 6.28\\ 1.77\\ 14.16\\ 17.19\\ 34.18\\ 11.17\\ 21.44\\ 26.25\\ 15.19\\ 9.85\\ 7.62\\ 4.61\\ 4.79\\ 13.49\\ 12.63\\ 1.35\\ \end{array}$	$\begin{array}{c} 64.48\\ 31.00\\ 56.05\\ 111.00\\ 94.11\\ 66.29\\ 99.69\\ 66.74\\ 81.60\\ 59.77\\ 63.42\\ 53.22\\ 37.51\\ 37.96\\ 62.75\\ 82.77\\ 55.46\end{array}$	$\begin{array}{c} 103.84\\ 39.88\\ 41.05\\ 113.84\\ 33.71\\ 32.08\\ 86.75\\ 82.28\\ 78.43\\ 70.33\\ 62.12\\ 55.04\\ 25.59\\ 26.68\\ 55.16\\ 78.79\\ 58.22\\ \end{array}$	$\begin{array}{c} 2.36\\ 0.00\\ 0.09\\ 10.44\\ 0.00\\ 0.47\\ 1.22\\ 0.81\\ 0.93\\ 0.00\\ 0.46\\ 1.09\\ 0.69\\ 2.54\\ 0.47\\ 2.22\end{array}$	$\begin{array}{c} 1.92 \\ 1.00 \\ 0.68 \\ 12.36 \\ 0.48 \\ 0.05 \\ 1.57 \\ 0.95 \\ 0.34 \\ 1.90 \\ 0.06 \\ 1.68 \\ 0.82 \\ 0.33 \\ 0.21 \\ 0.27 \\ 1.32 \end{array}$	$\begin{array}{c} 0.92\\ 0.20\\ 0.18\\ 1.32\\ 0.44\\ 3.97\\ 7.17\\ 3.51\\ 8.36\\ 3.25\\ 0.12\\ 15.22\\ 1.67\\ 0.43\\ 9.36\\ 6.71\\ 9.32 \end{array}$	20.32 3.48 3.86 3.20 0.35 1.77 0.03 0.88 0.34 8.66 0.12 0.84 0.00 3.08 0.71 10.71 0.15	$\begin{array}{c} 18.00\\ 21.08\\ 2.55\\ 26.28\\ 3.82\\ 1.17\\ 3.30\\ 10.67\\ 6.84\\ 0.95\\ 1.12\\ 6.41\\ 0.05\\ 0.20\\ 0.00\\ 1.59\\ 0.33\\ \end{array}$	2.20 10.12 10.45 30.60 31.30 0.68 29.95 52.53 22.27 11.34 33.70 31.42 11.79 14.65 30.82 14.47 5.30	0.04 0.04 0.00 0.04 0.22 0.08 0.52 0.14 0.09 0.03 0.03 0.03 0.03 0.03	Seal 0.04 0.09 0.08 0.09 0.34 0.07 0.14 0.28 0.52 0.45 0.26 0.24 0.10 0.47 1.45 0.36	1.52 1.32 1.27 1.56 1.23 0.75 1.18 1.33 0.77 0.95 1.00 1.01 0.82 0.97 0.97 1.01 1.02 0.91 0.77	939.24 554.36 307.55 958.12 348.31 392.05 459.30 733.26 516.54 312.23 494.21 506.14 448.45 444.43 644.52 668.08 645.89	

Table 2A: Results from January TASL censuses.

Date 01/10/82 01/15/83 01/07/84 01/16/88 01/12/86 01/18/87 01/16/88 01/29/89 01/14/90 01/20/91 01/29/91 01/29/91 01/29/91 01/29/91 01/29/90 01/12/97 01/11/98 01/17/99 01/09/00 01/17/02 01/17/02 01/18/04 01/09/05	<b>R.T. Loon</b> 0 2 3 3 1 0 3 2 2 1 1 4 2 3 3 4 4 200 166 165 28 8 1 1 34	<b>C.Loon</b> 0 4 111 1 5 2 2 3 2 2 5 5 1 1 1 11 7 6 6 3 10 199 100 144 100 100 47	<b>H.Grebe</b> 13 31 65 6 12 171 74 47 115 300 184 47 19 400 231 197 3357 80 15 197	<b>R.N.Grebe</b> 0 0 0 2 0 0 0 111 3 0 0 12 0 0 0 111 3 0 4 133 0 122 7 97 7 833 211 125 9 1 8 8	<b>D.C.Corm</b> 0 0 27 17 25 10 32 34 37 65 2 38 0 0 1 1 3 1 8 1 1 0	<b>G.Corm</b> 420 506 555 40 14 13 17 8 7 0 4 16 7 25 5 52 7 15 6	<b>Corm spp</b> 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	<b>G.B.Heron</b> 0 1 2 1 3 7 4 2 0 2 2 1 6 0 2 7 1 6 1 5 2 0 1	Brant 1133 933 4427 2914 479 1108 2121 2914 479 2128 875 1369 1119 2128 875 1369 1119 2128 875 1369 1105 1404 1092 1105 423 191 335	C.Goose 1 1 53 65 0 161 349 159 46 121 448 232 567 722 547 722 580 830 778 1097 84 558 811 1205	<b>M.Swan</b> 0 0 0 0 0 0 5 0 1 3 2 13 6 2 5 4 9 5 7 15 10 5 6	<b>B.Duck</b> 1596 1952 2824 1309 1422 2416 1589 3462 1796 3378 1543 1422 1589 1171 11286 1386 1283 966 1283 920	Mallard 51 93 118 41 241 384 420 232 232 430 325 482 232 430 325 482 232 359 454 295 271 383 361 256 271 1217 383 466 187	<b>Scaup</b> 1350 3564 2668 1561 229 760 1682 1193 960 284 681 803 743 960 284 681 1031 728 961 1031 728 961 1223 2405 943 1038	Eide 3263 3577 8977 2848 3195 13357 4611 3437 7027 3482 10533 10533 10533 10533 10533 10533 10533 12494 8863 7300 7760 8829 6692 5523 5702
AVERAGE	7	8	96	24	16	78	8	3	1251	441	5	1600	273	1260	6678
												_	Total	5	Par
01/10/82 01/15/83 01/07/84 01/26/85 01/12/86 01/12/86 01/12/9/89 01/14/90 01/20/91 01/12/97 01/12/97 01/15/95 01/07/96 01/12/97 01/11/98 01/12/97 01/11/98 01/12/97 01/11/98 01/12/02 01/12/102 01/12/102	2204 270 2494 1143 524 892 932 2138 774	<b>Cidneye</b> 3266 5800 20600 7900 4744 1284 11066 1456 1393 1634 456 1028 861 6466 1028 873 874 874 8648 953 8699 774	<b>Butthd</b> 502 872 1380 872 1758 1315 3051 1758 2231 1168 1733 1083 1083 1083 1573 1726 1372 1372 1372 1488 1072 1133	<b>R.B.Merg</b> 564 1187 1662 778 840 1009 1467 644 1017 730 573 524 730 573 524 730 573 524 730 573 524 1031 635 368 541	<b>L.T.Duck</b> 1 1 6 0 0 6 6 25 0 0 0 0 1 3 4 19 7 13 5 73 37 19 83	<b>B</b> . <b>B</b> . <b>Pic</b> 0 0 0 0 0 0 0 0 0 0 0 0 0	<b>Sndrling</b> 0 0 0 0 778 6 1388 14 140 5 877 17 10 408 208 30 455 51 142 4 91 8 62	<b>P.Sand</b> 0 1766 777 48 0 3 200 78 207 47 8 237 2 12 299 119 53 0 8 8 142 137 111 56	<b>Dunlin</b> 400 22 76 144 23 0 25 7 0 0 25 5 0 0 184 125 50 0 8 6 26 0 0 0	Bnpartes 5555 430 151 2 3433 4 8 14 5 13 221 3322 420 0 0 1 150 3 2 420 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	BI.Hd.Gull 3 3 1 1 2 8 8 0 0 5 5 7 5 3 0 2 3 0 0 0 0 0 0	Harb Seal 0 0 3 2 1 6 9 1 3 9 0 4 3 3 6 6 5 6 9 1 6 2 1	29 25 36 31 28 24 33 29 25 33 22 26 32 32 36 30 34 32	Total Birds 7827 10716 19476 7390 9036 10790 16681 11649 8121 14183 7236 14283 12288 12288 12288 14283 14283 14283 14283 16327 13948 11812 12616 14186 14171 8682 9694	Party Hours 5 22 26.5 25.75 28.5 25 37 38.5 27.5 33.25 33.25 33.25 35.75 32.75 35.75

or three smaller sections, each with a separate team. This resulted in a substantial increase in party hours over those recorded in earlier surveys (see tables). The data impact should be most pronounced for birds like loons and grebes that are normally seen singly rather than in flocks.

Table 2B - Factors impacting January censuses

Date 01/10/82 Missing approximately 5% of currrent sites and Long I., rough seas. 01/15/83 Missing approximately 5% of currrent sites and Long I., rough seas, snow 01/07/84 Missing approximately 5% of currrent sites, drizzle 01/26/85 Missing approximately 5% of currrent sites and Winthrop shore 01/12/86 Missing approximately 5% of currrent sites, rough seas 01/18/87 Missing approximately 5% of currrent sites, Long I., and Deer I., snow 01/16/88 Missing approximately 5% of currrent sites and Long I., ice in southern harbor. 01/29/89 01/14/90 Missing Deer I. and some Winthrop shore sites. 01/20/91 Missing lower Hull Bay 01/19/92 Missing Hull, rough seas, ice in southern harbor 01/24/93 01/15/95 Missing Deer I., fog and drizzle. 01/07/96 Ice throughout harbor 01/12/97 01/11/98 01/17/99 01/09/00 01/07/01 01/27/02 01/19/03 Ice in southern harbor, Winthrop and Lynn Harbors 01/18/04 Ice in southern harbor, Winthrop and Lynn Harbors; light snow 01/09/05

Another complicating factor is weather. Some earlier surveys were undertaken during rain or snowstorms: less-than-optimal viewing conditions. In recent years, as our understanding of the best way to collect meaningful data evolved, surveys were postponed if inclement conditions were forecast.

Finally, during the 1980s and early 1990s access to Deer Island in Winthrop and Long Island off Quincy was not possible. Both locations offer extensive views of Boston's Outer Harbor where many birds can be found. While some of these same birds can be observed from other sites, access to these two locations is essential for a full accounting.

A list of weather and accessibility limitations that impact individual counts are provided in Tables 1B, 2B, and 3B.

These factors all contribute to a probable upward bias in the number of birds seen in more recent years. Therefore, apparent increases in species abundance over time must be evaluated closely to validate the increase. Conversely, observed decreases are most likely real and may even under-represent the extent of decline. In order to address this issue, Tables 1C, 2C, and 3C report the data as "per party hour."

#### **Intrawinter trends**

In order to investigate intrawinter (seasonal) trends, we have used data only from years when we conducted November, January, and February counts which were unbiased by weather and/or missing sites, or were all biased in the same way (e.g. Deer Island missed in all three censuses). Twelve winters met these criteria. The mean dates for these years were November 20, January 13, and February 9.

The average number of party hours decreased from 35 hours per count in November to 32 in both January and February (Table 4). Likewise, the average number of waterbird species and total number of birds seen each decreased from

#### Table 2C - Birds per party hour- January.

_	R.T. L	ĉ	H.Grebe	R.N.Greb	D.C.Co	G.C	Corm	G.B.H	œ	C.Go	M.Swan	B.D	Mal	Sc	m
Date	Loon	Loon	ebe	ireb	orm	.Corm	spp	.Heroi	Brant	Goose	Nan	Duck	llard	Scaup	ider
01/10/82	0.00	0.00	0.58	0.0 <b>0</b>	0.00	18.67	0.00	0.00	50.36	0.04	0.00	70.93	2.27	60.00	145.02
01/15/83	0.09	0.18	1.41	0.00	0.00	23.00	0.00	0.05	42.41	2.41	0.00	88.73	4.23	162.00	162.59
01/07/84	0.11	0.42	2.45	0.08	1.02	10.83	0.00	0.08	167.06	2.45	0.00	106.57	4.45	100.68	338.75
01/26/85 01/12/86	0.04 0.00	0.04 0.04	0.23 0.44	0.00 0.00	0.66 0.93	3.03 5.44	0.00 1.44	0.04 0.11	40.31 78.56	0.00 5.96	0.00 0.00	50.83 52.67	1.59 8.93	60.62 74.67	129.59 105.48
01/12/88	0.00	0.04	6.00	0.39	0.93	3.37	0.00	0.11	102.25	12.25	0.00	84.77	13.47	43.12	112.11
01/16/88	0.08	0.08	2.96	0.12	1.28	2.20	0.72	0.16	19.16	0.76	0.20	63.56	11.28	30.40	534.28
01/29/89	0.03	0.08	1.46	0.00	0.92	1.08	0.00	0.05	37.00	4.30	0.00	93.57	6.27	45.46	124.62
01/14/90	0.11	0.06	1.06	0.11	1.06	0.40	0.03	0.00	31.97	1.31	0.03	51.31	12.29	34.09	98.20
01/20/91	0.05	0.13	2.99	0.34	1.74	0.34	0.00	0.68	55.27	3.14	0.08	87.74	8.44	24.94	182.52
01/19/92	0.10	0.03	1.03	0.00	2.24	0.59	0.07	0.07	30.17	15.45	0.07	53.21	16.62	9.79	120.07
01/24/93	0.11	0.30	5.04	0.08	0.05	0.22	0.00	0.03	27.84	6.36	0.36	38.96	4.74	18.66	288.58
01/15/95	0.00	0.21	1.41	2.86	1.14	0.21	0.00	0.18	34.47	17.05	0.18	47.79	10.80	24.15	229.11
01/07/96 01/12/97	0.15 0.13	0.22 0.10	0.69 1.29	0.00 0.39	0.00	0.00 0.13	0.00 0.03	0.00 0.06	16.29 22.32	26.25 17.65	0.07 0.48	42.58 36.39	16.51 9.52	27.02 3.10	326.18 199.84
01/12/97	0.13	0.10	4.93	1.65	0.00	0.13	0.00	0.00	38.67	16.81	0.48	37.28	5.28	4.84	362.14
01/17/99	0.48	0.57	6.95	2.92	0.03	0.21	0.12	0.03	32.84	24.96	0.27	41.68	10.86	31.01	266.56
01/09/00	0.45	0.28	5.51	2.32	0.08	0.70	0.42	0.17	30.91	21.76	0.14	35.89	7.16	20.36	204.25
01/07/01	0.15	0.43	2.23	0.64	0.03	0.15	0.92	0.03	42.87	33.50	0.21	29.50	8.27	29.34	236.95
01/27/02	0.81	0.29	10.27	3.60	0.23	0.63	1.96	0.14	30.36	22.56	0.43	15.54	6.24	61.09	254.07
01/19/03	0.22	0.28	2.24	0.25	0.03	0.20	0.00	0.06	11.83	15.61	0.28	31.41	10.71	67.27	187.19
01/18/04	0.04	0.37	0.55	0.04	0.04	0.55	0.00	0.00	7.01	29.76	0.18	25.69	17.10	34.61	202.68
01/09/05	0.87	1.21	5.05	0.21	0.00	0.15	0.21	0.03	8.59	30.90	0.15	23.59	4.79	26.62	146.21
AVERAGE	0.20	0.25	2.90	0.69	0.51	3.15	0.26	0.10	41.67	13.53	0.14	52.62	8.77	43.21	215.52
													Total		
		G		<u></u> .	5		ŝ	_		B	8.7	Ha	tals	Tota	
	Sco	Gidn	Buf	R.B.M	L.T.D	B.B.	Sndrl	P.S	臣	Bnpar	BI.Hd.(	Harb S	tal Spec	Total Bi	
Date	Scoter	Gldneye	Buflhd	R.B.Merg	L.T.Duck		Sndrling	P.Sand	Dunlin	Bnpartes	BI.Hd.Gull	Harb Seal	tal Species	Total Birds	
01/10/82	<b>Scoter</b> 5.29	<b>dneye</b> 14.49	Bufihd 22.31	<b>R.B.Merg</b> 25.07	L.T.Duck 0.04	.8. P	Sndrling 0.00	<b>P.Sand</b> 0.00	Dunlin 1.78	Bnpartes 24.67	BI.Hd.Gull 0.13	Harb Seal 0.00	Spec	Total Birds 441.64	
01/10/82 01/15/83	5.29 6.14	<b>dneye</b> 14.49 26.36	22.31 39.64	25.07 53.95	0.04 0.05	. <b>B.Plo</b> 0.00 0.00	0.00 0.00	0.00 8.00	1.78 0.00	24.67 19.55	0.13 0.14	0.00 0.00	Species 0.98 1.09	Birds 441.64 640.91	
01/10/82 01/15/83 01/07/84	5.29 6.14 14.23	<b>dneye</b> 14.49 26.36 77.74	22.31 39.64 52.08	25.07 53.95 62.72	0.04 0.05 0.23		0.00 0.00 3.66	0.00 8.00 2.91	1.78 0.00 0.83	24.67 19.55 5.70	<b>ດຍ</b> 0.13 0.14 0.04	0.00 0.00 0.11	<b>Species</b> 0.98 1.09 1.25	<b>Birds</b> 441.64 640.91 955.17	
01/10/82 01/15/83 01/07/84 01/26/85	5.29 6.14 14.23 9.67	<b>dneye</b> 14.49 26.36 77.74 30.68	22.31 39.64 52.08 33.86	25.07 53.95 62.72 30.21	0.04 0.05 0.23 0.00	. <b>B.P.O</b> 0.00 0.00 0.11 0.16	0.00 0.00 3.66 3.03	0.00 8.00 2.91 1.86	1.78 0.00 0.83 2.95	24.67 19.55 5.70 0.08	<b>Gull</b> 0.13 0.14 0.04 0.04	8 0.00 0.00 0.11 0.08	0.98 1.09 1.25 1.13	<b>Birds</b> 441.64 640.91 955.17 399.53	
01/10/82 01/15/83 01/07/84 01/26/85 01/12/86	5.29 6.14 14.23 9.67 9.41	<b>dneye</b> 14.49 26.36 77.74 30.68 17.56	22.31 39.64 52.08 33.86 40.67	25.07 53.95 62.72 30.21 29.59	0.04 0.05 0.23 0.00 0.00	0.00 0.00 0.11 0.16 0.00	0.00 0.00 3.66 3.03 0.22	0.00 8.00 2.91 1.86 0.00	1.78 0.00 0.83 2.95 0.52	24.67 19.55 5.70 0.08 12.70	Gul 0.13 0.14 0.04 0.04 0.07	0.00 0.00 0.11 0.08 0.04	<b>Species</b> 0.98 1.09 1.25 1.13 0.93	<b>Birds</b> 441.64 640.91 955.17 399.53 445.41	
01/10/82 01/15/83 01/07/84 01/26/85 01/12/86 01/12/86	5.29 6.14 14.23 9.67 9.41 7.68	<b>dneye</b> 14.49 26.36 77.74 30.68 17.56 45.05	22.31 39.64 52.08 33.86 40.67 61.68	25.07 53.95 62.72 30.21 29.59 26.28	0.04 0.05 0.23 0.00 0.00 0.21	0.00 0.00 0.11 0.16 0.00 0.07	0.00 0.00 3.66 3.03 0.22 4.84	0.00 8.00 2.91 1.86 0.00 0.11	1.78 0.00 0.83 2.95 0.52 0.81	24.67 19.55 5.70 0.08 12.70 0.14	Gull 0.13 0.14 0.04 0.04 0.07 0.28	0.00 0.00 0.11 0.08 0.04 0.21	<b>Species</b> 0.98 1.09 1.25 1.13 0.93 1.26	<b>Birds</b> 441.64 640.91 955.17 399.53 445.41 525.75	
01/10/82 01/15/83 01/07/84 01/26/85 01/12/86	5.29 6.14 14.23 9.67 9.41	<b>dneye</b> 14.49 26.36 77.74 30.68 17.56	22.31 39.64 52.08 33.86 40.67	25.07 53.95 62.72 30.21 29.59	0.04 0.05 0.23 0.00 0.00	0.00 0.00 0.11 0.16 0.00	0.00 0.00 3.66 3.03 0.22	0.00 8.00 2.91 1.86 0.00	1.78 0.00 0.83 2.95 0.52	24.67 19.55 5.70 0.08 12.70	Gul 0.13 0.14 0.04 0.04 0.07	0.00 0.00 0.11 0.08 0.04	<b>Species</b> 0.98 1.09 1.25 1.13 0.93	<b>Birds</b> 441.64 640.91 955.17 399.53 445.41	
01/10/82 01/15/83 01/07/84 01/26/85 01/12/86 01/18/87 01/16/88	5.29 6.14 14.23 9.67 9.41 7.68 10.20	dneye 14.49 26.36 77.74 30.68 17.56 45.05 44.24	22.31 39.64 52.08 33.86 40.67 61.68 52.60	25.07 53.95 62.72 30.21 29.59 26.28 51.12	0.04 0.05 0.23 0.00 0.00 0.21 1.00	0.00 0.00 0.11 0.16 0.00 0.07 0.00	0.00 0.00 3.66 3.03 0.22 4.84 0.56	0.00 8.00 2.91 1.86 0.00 0.11 0.80	1.78 0.00 0.83 2.95 0.52 0.81 0.00	24.67 19.55 5.70 0.08 12.70 0.14 0.32	Gull 0.13 0.14 0.04 0.04 0.07 0.28 0.32	0.00 0.00 0.11 0.08 0.04 0.21 1.96	Species 0.98 1.09 1.25 1.13 0.93 1.26 1.24	Birds 441.64 640.91 955.17 399.53 445.41 525.75 828.40	
01/10/82 01/15/83 01/07/84 01/26/85 01/12/86 01/18/87 01/16/88 01/29/89	5.29 6.14 14.23 9.67 9.41 7.68 10.20 3.30	<b>dneye</b> 14.49 26.36 77.74 30.68 17.56 45.05 44.24 39.35	22.31 39.64 52.08 33.86 40.67 61.68 52.60 82.46	25.07 53.95 62.72 30.21 29.59 26.28 51.12 22.70	0.04 0.05 0.23 0.00 0.00 0.21 1.00 0.00	0.00 0.00 0.11 0.16 0.00 0.07 0.00 0.05	0.00 0.00 3.66 3.03 0.22 4.84 0.56 3.78	0.00 8.00 2.91 1.86 0.00 0.11 0.80 2.11	1.78 0.00 0.83 2.95 0.52 0.81 0.00 0.68	24.67 19.55 5.70 0.08 12.70 0.14 0.32 0.38	Gull 0.13 0.14 0.04 0.04 0.07 0.28 0.32 0.00	0.00 0.00 0.11 0.08 0.04 0.21 1.96 1.38	<b>Species</b> 0.98 1.09 1.25 1.13 0.93 1.26 1.24 0.76	Birds 441.64 640.91 955.17 399.53 445.41 525.75 828.40 469.65	
01/10/82 01/15/83 01/07/84 01/26/85 01/12/86 01/18/87 01/16/88 01/29/89 01/14/90 01/20/91 01/19/92	5.29 6.14 14.23 9.67 9.41 7.68 10.20 3.30 3.34 9.45 1.59	<b>d</b> 14.49 26.36 77.74 30.68 17.56 45.05 44.24 39.35 39.80 42.44 32.79	22.31 39.64 52.08 33.86 40.67 61.68 52.60 82.46 59.94 57.95 40.28	25.07 53.95 62.72 30.21 29.59 26.28 51.12 22.70 28.83 38.10 22.21	0.04 0.05 0.23 0.00 0.21 1.00 0.00 0.00 0.00 0.00 0.00	<b>B</b> 0.00 0.11 0.16 0.00 0.07 0.00 0.05 0.00 0.00 0.00	0.00 0.00 3.66 3.03 0.22 4.84 0.56 3.78 0.14 2.26 0.59	0.00 8.00 2.91 1.86 0.00 0.11 0.80 2.11 2.20 1.22 0.28	1.78 0.00 0.83 2.95 0.52 0.81 0.00 0.68 0.00 0.39 0.24	24.67 19.55 5.70 0.08 12.70 0.14 0.32 0.38 0.14 0.34 8.66	<b>G</b> 0.13 0.14 0.04 0.07 0.28 0.00 0.00 0.00 0.13 0.17	0.00 0.00 0.11 0.08 0.04 0.21 1.96 1.38 0.09	<b>Species</b> 0.98 1.09 1.25 1.13 0.93 1.26 1.24 0.76 0.69 0.86 1.00	Brdg 441.64 640.91 955.17 399.53 445.41 525.75 828.40 469.65 366.43 520.68 356.31	
01/10/82 01/15/83 01/07/84 01/26/85 01/12/86 01/12/86 01/18/87 01/16/88 01/29/89 01/14/90 01/20/91 01/19/92 01/12/93	5.29 6.14 14.23 9.67 9.41 7.68 10.20 3.30 3.34 9.45 1.59 15.26	<b>d</b> 14.49 26.36 77.74 30.68 17.56 45.05 44.24 39.35 39.80 42.44 32.79 23.59	22.31 39.64 52.08 33.86 40.67 61.68 52.60 82.46 59.94 57.95 40.28 47.48	25.07 53.95 62.72 30.21 29.59 26.28 51.12 22.70 28.83 38.10 22.21 27.86	0.04 0.05 0.23 0.00 0.21 1.00 0.00 0.00 0.00 0.00 0.00	B Plo 0.00 0.11 0.16 0.00 0.07 0.00 0.05 0.00 0.00 0.00 0.00	0.00 0.00 3.66 3.03 0.22 4.84 0.56 3.78 0.14 2.26 0.59 0.27	0.00 8.00 2.91 1.86 0.00 0.11 0.80 2.11 2.20 1.22 0.28 6.49	1.78 0.00 0.83 2.95 0.52 0.81 0.00 0.68 0.00 0.39 0.24 0.00	24.67 19.55 5.70 0.08 12.70 0.14 0.32 0.38 0.14 0.34 8.66 9.10	<b>G</b> 0.13 0.14 0.04 0.07 0.28 0.00 0.00 0.13 0.17 0.19	8 0.00 0.11 0.08 0.04 0.21 1.96 1.38 0.09 0.49 0.00 0.11	<b>Species</b> 0.98 1.09 1.25 1.13 0.93 1.26 1.24 0.76 0.69 0.86 1.00 0.68	Brdg 441.64 640.91 955.17 399.53 445.41 525.75 828.40 469.65 366.43 520.68 356.31 521.56	
01/10/82 01/15/83 01/07/84 01/26/85 01/12/86 01/12/86 01/12/86 01/12/9/89 01/16/88 01/29/89 01/14/90 01/20/91 01/19/92 01/24/93 01/15/95	5.29 6.14 14.23 9.67 9.41 7.68 10.20 3.30 3.34 9.45 1.59 15.26 32.54	<b>d</b> 14.49 26.36 77.74 30.68 17.56 45.05 44.24 39.35 39.80 42.44 32.79 23.59 19.43	22.31 39.64 52.08 33.86 40.67 61.68 52.60 82.46 59.94 57.95 40.28 47.48 32.57	25.07 53.95 62.72 30.21 29.59 26.28 51.12 22.70 28.83 38.10 22.21 27.86 21.95	0.04 0.05 0.23 0.00 0.21 1.00 0.00 0.00 0.00 0.00 0.00	B PB 0 0.00 0.11 0.16 0.00 0.07 0.00 0.05 0.00 0.00 0.00 0.00	0.00 0.00 3.66 3.03 0.22 4.84 0.56 3.78 0.14 2.26 0.59 0.27 12.27	0.00 8.00 2.91 1.86 0.00 0.11 0.80 2.11 2.20 1.22 0.28 6.49 0.06	1.78 0.00 0.83 2.95 0.52 0.81 0.00 0.68 0.00 0.39 0.24 0.00 3.19	24.67 19.55 5.70 0.08 12.70 0.14 0.32 0.38 0.14 0.34 8.66 9.10 3.04	<b>G</b> 0.13 0.14 0.04 0.07 0.28 0.32 0.00 0.00 0.13 0.17 0.19 0.15	8 0.00 0.11 0.08 0.04 0.21 1.96 1.38 0.09 0.49 0.00 0.11 0.09	<b>Species</b> 0.98 1.09 1.25 1.13 0.93 1.24 0.76 0.69 0.86 1.00 0.68 0.99	Brdg 441.64 640.91 955.17 399.53 445.41 525.75 828.40 469.65 366.43 520.68 356.31 521.56 495.52	
01/10/82 01/15/83 01/07/84 01/26/85 01/12/86 01/18/87 01/16/88 01/29/89 01/14/90 01/20/91 01/19/92 01/24/93 01/15/95 01/07/96	5.29 6.14 14.23 9.67 9.41 7.68 10.20 3.30 3.34 9.45 1.59 15.26 32.54 80.15	<b>dy</b> 14.49 26.36 77.74 30.68 17.56 45.05 44.24 39.35 39.80 42.44 32.79 23.59 19.43 37.38	22.31 39.64 52.08 33.86 40.67 61.68 52.60 82.46 59.94 57.95 40.28 47.48 32.57 36.55	25.07 53.95 62.72 30.21 29.59 26.28 51.12 22.70 28.83 38.10 22.21 27.86 21.95 20.84	0.04 0.05 0.23 0.00 0.21 1.00 0.00 0.00 0.00 0.00 0.00	B PB 0.00 0.00 0.11 0.16 0.00 0.07 0.00	0.00 0.00 3.66 3.03 0.22 4.84 0.56 3.78 0.14 2.26 0.59 0.27 12.27 0.73	0.00 8.00 2.91 1.86 0.00 0.11 0.80 2.11 2.20 1.22 0.28 6.49 0.06 0.44	1.78 0.00 0.83 2.95 0.52 0.81 0.00 0.68 0.00 0.39 0.24 0.00 3.19 0.00	24.67 19.55 5.70 0.08 12.70 0.14 0.32 0.38 0.14 0.34 8.66 9.10 3.04 5.45	<b>G</b> 0.13 0.14 0.04 0.07 0.28 0.32 0.00 0.13 0.17 0.19 0.15 0.11	∑ ∑ ∞ 0.00 0.01 0.08 0.04 0.21 1.96 1.38 0.09 0.49 0.09 0.49 0.00 0.11 0.09 0.11	<b>Species</b> 0.98 1.09 1.25 1.13 0.93 1.26 1.24 0.76 0.86 1.00 0.68 0.99 0.80	Bridg 441.64 640.91 955.17 399.53 445.41 525.75 828.40 469.65 366.43 520.56 356.31 521.56 495.52 637.71	
01/10/82 01/15/83 01/07/84 01/26/85 01/12/86 01/18/87 01/16/88 01/29/89 01/14/90 01/20/91 01/16/95 01/12/97	5.29 6.14 14.23 9.67 9.41 7.68 10.20 3.30 3.34 9.45 1.59 15.26 32.54 80.15 8.71	<b>dh</b> eye 14.49 26.36 77.74 30.68 17.56 45.05 44.24 39.35 39.35 39.30 42.44 32.79 23.59 19.43 37.38 10.87	22.31 39.64 52.08 33.86 40.67 61.68 52.60 82.46 59.94 57.95 40.28 47.48 32.57 36.55 30.74	25.07 53.95 62.72 30.21 29.59 26.28 51.12 22.70 28.83 38.10 22.21 27.86 21.95 20.84 16.90	0.04 0.05 0.23 0.00 0.21 1.00 0.00 0.00 0.00 0.00 0.00	B PB 0 0.00 0.11 0.16 0.00 0.07 0.00 0.05 0.00 0.00 0.00 0.00	0.00 0.00 3.66 3.03 0.22 4.84 0.56 3.78 0.14 2.26 0.59 0.27 12.27 0.73 6.71	0.00 8.00 2.91 1.86 0.00 0.11 0.80 2.11 2.20 1.22 0.28 6.49 0.06 0.44 0.94	1.78 0.00 0.83 2.95 0.52 0.81 0.00 0.68 0.00 0.39 0.24 0.00 3.19 0.00 5.94	24.67 19.55 5.70 0.08 12.70 0.14 0.32 0.38 0.14 0.34 8.66 9.10 3.04 5.45 1.03	<b>G</b> 0.13 0.14 0.04 0.07 0.28 0.32 0.00 0.00 0.13 0.17 0.19 0.15 0.11 0.00	∑	<b>Species</b> 0.98 1.09 1.25 1.13 0.93 1.26 1.24 0.76 0.69 0.86 1.00 0.68 0.99 0.80 0.84	Bridg 441.64 640.91 955.17 399.53 445.41 525.75 828.40 469.65 366.43 520.68 356.31 521.56 637.71 373.39	
01/10/82 01/15/83 01/07/84 01/26/85 01/12/86 01/18/87 01/16/88 01/29/89 01/20/91 01/20/91 01/120/91 01/15/95 01/07/96 01/12/97 01/11/98	5.29 6.14 14.23 9.67 9.41 7.68 10.20 3.30 3.34 9.45 1.59 15.26 32.54 80.15 8.71 72.29	<b>dh</b> eye 14.49 26.36 77.74 30.68 17.56 45.05 44.24 39.35 39.80 42.44 32.79 23.59 19.43 37.38 10.87 27.04	22.31 39.64 52.08 33.86 40.67 61.68 52.60 82.46 59.94 57.95 40.28 47.48 32.57 36.55 30.74 45.59	25.07 53.95 62.72 30.21 29.59 26.28 51.12 22.70 28.83 38.10 22.21 27.86 21.95 20.84 16.90 21.59	0.04 0.05 0.23 0.00 0.21 1.00 0.00 0.00 0.00 0.00 0.00	B Pio 0.00 0.11 0.16 0.00 0.07 0.00 0.05 0.00 0.00 0.00 0.00 0.72 0.00	0.00 0.00 3.66 3.03 0.22 4.84 0.56 3.78 0.56 0.59 0.27 12.27 0.73 6.71 0.87	0.00 8.00 2.91 1.86 0.00 0.11 0.80 2.11 2.20 1.22 0.28 6.49 0.06 0.44 0.94 3.45	1.78 0.00 0.83 2.95 0.52 0.81 0.00 0.68 0.00 0.39 0.24 0.00 3.19 0.00 5.94 3.62	24.67 19.55 5.70 0.08 12.70 0.14 0.32 0.38 0.14 0.34 8.66 9.10 3.04 5.45 1.03 12.17	<b>G</b> 0.13 0.14 0.04 0.07 0.28 0.32 0.00 0.13 0.17 0.19 0.15 0.11 0.00 0.06	€ 0.00 0.11 0.08 0.04 0.21 1.96 1.38 0.09 0.49 0.00 0.11 0.09 0.11 0.19 0.17	<b>Species</b> 0.98 1.09 1.25 1.13 0.93 1.26 1.24 0.76 0.69 0.86 1.00 0.68 0.99 0.80 0.84 0.93	Brds 441.64 640.91 955.17 399.53 445.41 525.75 828.40 469.65 366.43 520.68 356.31 521.56 495.52 637.71 373.39 660.49	
01/10/82 01/15/83 01/07/84 01/26/85 01/12/86 01/18/87 01/16/88 01/29/89 01/14/90 01/20/91 01/20/91 01/24/93 01/15/95 01/07/96 01/12/97 01/11/99	5.29 6.14 14.23 9.67 9.41 7.68 10.20 3.30 3.34 9.45 1.59 15.26 32.54 80.15 8.71 72.29 34.38	<b>dh</b> eye 14.49 26.36 77.74 30.68 17.56 45.05 44.24 39.35 39.35 39.30 42.44 32.79 23.59 19.43 37.38 10.87	22.31 39.64 52.08 33.86 40.67 61.68 52.60 82.46 59.94 57.95 40.28 47.48 32.57 36.55 30.74	25.07 53.95 62.72 30.21 29.59 26.28 51.12 22.70 28.83 38.10 22.21 27.86 21.95 20.84 16.90 21.59 27.04	0.04 0.05 0.23 0.00 0.21 1.00 0.00 0.00 0.00 0.00 0.00	B PB 0 0.00 0.11 0.16 0.00 0.07 0.00 0.05 0.00 0.00 0.00 0.00	0.00 0.00 3.66 3.03 0.22 4.84 0.56 3.78 0.14 2.26 0.59 0.27 12.27 0.73 6.71	0.00 8.00 2.91 1.86 0.00 0.11 0.80 2.11 2.20 1.22 0.28 6.49 0.06 0.44 0.94	1.78 0.00 0.83 2.95 0.52 0.81 0.00 0.68 0.00 0.39 0.24 0.00 3.19 0.00 5.94	24.67 19.55 5.70 0.08 12.70 0.14 0.32 0.38 0.14 0.34 8.66 9.10 3.04 5.45 1.03	<b>Q</b> 0.13 0.14 0.04 0.07 0.28 0.32 0.00 0.13 0.17 0.19 0.15 0.11 0.00 0.06 0.09	80 0.00 0.01 0.01 0.08 0.04 1.38 0.09 0.40 0.00 0.11 0.09 0.11 0.09 0.11 0.17 0.15	<b>Species</b> 0.98 1.09 1.25 1.13 0.93 1.26 1.24 0.76 0.69 0.86 1.00 0.68 0.99 0.80 0.84	Brdg 441.64 640.91 955.17 399.53 445.41 525.75 828.40 469.65 366.43 520.68 356.31 521.56 495.52 637.71 373.39 660.49 580.57	
01/10/82 01/15/83 01/07/84 01/26/85 01/12/86 01/18/87 01/16/88 01/29/89 01/20/91 01/20/91 01/120/91 01/15/95 01/07/96 01/12/97 01/11/98	5.29 6.14 14.23 9.67 9.41 7.68 10.20 3.30 3.34 9.45 1.59 15.26 32.54 80.15 8.71 72.29	dheye 14.49 26.36 77.74 30.68 17.56 44.24 39.35 39.80 42.44 32.79 23.59 19.43 37.38 10.87 27.04 42.92	22.31 39.64 52.08 33.86 40.67 61.68 52.60 82.46 59.94 57.95 40.28 47.48 32.57 36.55 30.74 45.59 51.91	25.07 53.95 62.72 30.21 29.59 26.28 51.12 22.70 28.83 38.10 22.21 27.86 21.95 20.84 16.90 21.59	0.04 0.05 0.23 0.00 0.21 1.00 0.00 0.00 0.00 0.00 0.00	B Pio 0.00 0.11 0.16 0.00 0.07 0.00 0.00 0.00 0.00 0.72 0.00	0.00 0.00 3.66 3.03 0.22 4.84 0.56 3.78 0.14 2.26 0.27 12.27 0.73 6.71 0.87 1.35	0.00 8.00 2.91 1.86 0.00 0.11 0.80 2.11 2.20 1.22 0.28 6.49 0.06 0.44 0.94 3.45 1.59	1.78 0.00 0.83 2.95 0.52 0.81 0.00 0.68 0.00 0.39 0.24 0.00 3.19 0.00 3.19 0.594 3.62 1.50	24.67 19.55 5.70 0.08 12.70 0.14 0.32 0.38 0.14 0.34 8.66 9.10 3.04 5.45 1.03 12.17 0.09	<b>G</b> 0.13 0.14 0.04 0.07 0.28 0.32 0.00 0.13 0.17 0.19 0.15 0.11 0.00 0.06	€ 0.00 0.11 0.08 0.04 0.21 1.96 1.38 0.09 0.49 0.00 0.11 0.09 0.11 0.19 0.17	<b>Sec</b> <b>0.98</b> 1.09 1.25 1.13 0.93 1.26 1.24 0.76 0.69 0.86 1.00 0.68 0.99 0.80 0.84 0.93 1.08	Brds 441.64 640.91 955.17 399.53 445.41 525.75 828.40 469.65 366.43 520.68 356.31 521.56 495.52 637.71 373.39 660.49	
01/10/82 01/15/83 01/07/84 01/26/85 01/12/86 01/18/87 01/16/88 01/29/89 01/14/90 01/20/91 01/19/92 01/24/93 01/15/95 01/07/96 01/12/97 01/11/99 01/09/00	5.29 6.14 14.23 9.67 9.41 7.68 10.20 3.30 3.34 9.45 1.59 15.26 32.54 80.15 8.71 72.29 34.38 14.66	<b>dheye</b> 14.49 26.36 77.74 30.68 45.05 44.24 39.35 39.80 42.44 32.79 23.59 19.43 37.38 10.87 27.04 42.92 24.45	22.31 39.64 52.08 33.86 40.67 61.68 52.60 82.46 59.94 57.95 40.28 47.48 32.57 36.55 30.74 45.59 51.91 47.97	25.07 53.95 62.72 30.21 29.59 26.28 51.12 22.70 28.83 38.10 22.21 27.86 21.95 20.84 16.90 21.59 27.04 28.90	0.04 0.05 0.23 0.00 0.21 1.00 0.00 0.00 0.00 0.00 0.00	B. Pio 0.00 0.11 0.16 0.00 0.07 0.00 0.05 0.00 0.00 0.00 0.00	0.00 0.00 3.66 3.03 0.22 4.84 0.56 3.78 0.14 2.26 0.59 0.27 12.27 0.73 6.71 0.87 1.35 1.43	0.00 8.00 2.91 1.86 0.00 0.11 0.80 1.22 0.28 6.49 0.06 0.44 0.94 3.45 1.59 0.00	$\begin{array}{c} 1.78\\ 0.00\\ 0.83\\ 2.95\\ 0.52\\ 0.81\\ 0.00\\ 0.68\\ 0.00\\ 0.39\\ 0.24\\ 0.00\\ 3.19\\ 0.00\\ 5.94\\ 3.62\\ 1.50\\ 0.00\\ \end{array}$	24.67 19.55 5.70 0.08 12.70 0.14 0.32 0.38 0.14 0.34 8.66 9.10 3.04 5.45 1.03 12.17 0.09 0.14	<b>Q</b> 0.13 0.14 0.04 0.07 0.28 0.32 0.00 0.13 0.17 0.19 0.15 0.11 0.00 0.06 0.09 0.00	80 0.00 0.11 0.08 0.21 1.96 1.38 0.09 0.49 0.00 0.11 0.09 0.11 0.19 0.17	<b>Species</b> 0.98 1.09 1.25 1.13 0.93 1.26 0.69 0.86 1.00 0.68 0.99 0.80 0.84 0.93 1.08 0.84	Brds 441.64 640.91 955.17 399.53 445.41 525.75 828.40 828.40 828.40 826.63 356.31 521.56 495.52 637.71 373.39 660.49 580.57 448.31	
01/10/82 01/15/83 01/07/84 01/26/85 01/12/86 01/12/86 01/18/87 01/16/88 01/29/89 01/14/90 01/20/91 01/19/92 01/24/93 01/15/95 01/07/96 01/12/97 01/11/98 01/17/96 01/12/97 01/03/00 01/07/01	5.29 6.14 14.23 9.67 9.41 7.68 10.20 3.30 3.34 9.45 1.59 15.26 32.54 80.15 8.71 72.29 34.38 14.66 27.24	<b>dheye</b> 14.49 26.36 77.74 30.68 45.05 44.24 39.35 39.80 42.44 32.79 23.59 19.43 37.38 10.87 27.04 42.92 24.45 26.38	22.31 39.64 52.08 33.86 40.67 61.68 52.60 82.46 59.94 57.95 40.28 47.48 32.57 36.55 30.74 45.59 51.91 47.97 41.89	25.07 53.95 62.72 30.21 29.59 26.28 51.12 22.70 28.83 38.10 22.21 27.86 21.95 20.84 16.90 21.95 27.04 28.90 27.04 28.90 20.67	0.04 0.05 0.23 0.00 0.21 1.00 0.00 0.00 0.00 0.00 0.00	B. Pio 0.00 0.11 0.16 0.00 0.07 0.00 0.05 0.00 0.00 0.00 0.00	0.00 0.00 3.66 3.03 0.22 4.84 0.56 3.78 0.14 2.26 0.59 0.27 12.27 0.73 6.71 0.87 1.35 1.43 4.34	0.00 8.00 2.91 1.86 0.00 0.11 0.80 2.11 2.20 1.22 0.28 6.49 0.06 0.44 0.94 3.45 1.59 0.00 0.24	$\begin{array}{c} 1.78\\ 0.00\\ 0.83\\ 2.95\\ 0.52\\ 0.81\\ 0.00\\ 0.68\\ 0.00\\ 0.39\\ 0.24\\ 0.00\\ 3.19\\ 0.00\\ 5.94\\ 3.62\\ 1.50\\ 0.00\\ 0.24 \end{array}$	24.67 19.55 5.70 0.08 12.70 0.14 0.32 0.38 0.14 0.34 8.66 9.10 3.04 5.45 1.03 12.17 0.09 0.14 2.11	<b>Gui</b> 0.13 0.14 0.04 0.07 0.28 0.00 0.00 0.13 0.17 0.19 0.15 0.11 0.00 0.00 0.00 0.00 0.00 0.00	<ul> <li>6</li> <li>0.00</li> <li>0.00</li> <li>0.11</li> <li>0.08</li> <li>0.04</li> <li>0.21</li> <li>1.96</li> <li>1.38</li> <li>0.09</li> <li>0.49</li> <li>0.00</li> <li>0.11</li> <li>0.19</li> <li>0.17</li> <li>0.17</li> <li>0.89</li> </ul>	<b>Species</b> 0.98 1.09 1.25 1.13 0.93 1.26 1.24 0.76 0.69 0.86 1.00 0.68 0.99 0.80 0.84 0.93 1.08 0.84 1.04	Brds 441.64 640.91 955.17 399.53 445.41 525.75 828.40 469.65 366.43 520.68 356.31 521.56 637.71 373.39 660.49 580.57 448.31 509.10	
01/10/82 01/15/83 01/07/84 01/26/85 01/12/86 01/12/86 01/18/87 01/16/88 01/29/89 01/14/90 01/20/91 01/20/91 01/19/92 01/24/93 01/15/95 01/07/96 01/12/97 01/11/89 01/07/01 01/07/01 01/27/02 01/18/04	5.29 6.14 14.23 9.61 7.68 10.20 3.30 3.34 9.45 1.59 15.26 32.54 80.15 8.71 72.29 34.38 14.66 27.24 26.80 259.80 28.40	cheve 14.49 26.36 77.74 30.68 45.05 44.24 39.35 39.80 42.44 32.79 19.43 37.38 10.87 27.04 42.92 24.45 26.38 33.61 25.28	22.31 39.64 52.08 33.86 61.68 52.60 82.46 57.95 40.28 47.48 32.57 36.55 30.74 45.59 51.91 47.97 41.89 45.79 51.91 47.97 41.89 45.73 23.9.34	25.07 53.95 62.72 30.21 29.59 26.28 51.12 22.70 28.83 38.10 22.21 27.86 21.95 20.84 16.90 21.59 27.04 28.90 20.67 31.40 17.76 13.50	0.04 0.05 0.23 0.00 0.00 0.00 0.00 0.00 0.00 0.00	<b>b</b> 0.000 0.011 0.16 0.00 0.07 0.000000	0.00 0.00 3.63 3.03 0.22 4.84 0.56 3.78 0.27 12.27 0.73 6.71 0.87 1.35 1.43 4.34 0.12 2.55 0.29	0.00 8.00 2.91 1.86 0.00 0.01 1.22 0.28 6.49 0.06 0.44 0.94 3.45 1.59 0.00 0.24 4.59 3.83 4.07	$\begin{array}{c} 1.78\\ 0.00\\ 0.83\\ 2.95\\ 0.52\\ 0.81\\ 0.00\\ 0.68\\ 0.00\\ 0.39\\ 0.24\\ 0.00\\ 5.94\\ 3.62\\ 1.50\\ 0.00\\ 0.24\\ 0.17\\ 0.73\\ 0.00\\ \end{array}$	24.67 19.55 5.70 0.08 12.70 0.14 0.32 0.38 0.14 0.34 8.66 9.10 3.04 5.45 1.03 12.17 0.09 0.14 2.11 0.00 0.00	<b>G</b> 0.13 0.14 0.04 0.07 0.07 0.28 0.00 0.00 0.13 0.17 0.19 0.15 0.11 0.00 0.00 0.00 0.00 0.00 0.00	6 0.00 0.00 0.00 0.01 0.08 0.04 0.21 1.96 0.38 0.09 0.43 0.17 0.17 0.17 0.89 0.43 0.43 0.43 0.43 0.43 0.43 0.43 0.43 0.43 0.45 0.47 0.45 0.47 0.45 0.47 0.45 0.47 0.45 0.47 0.45 0.47 0.45	Species           0.98           1.09           1.25           1.13           0.93           1.26           1.24           0.76           0.80           0.80           0.80           0.80           0.84           0.99           0.80           0.84           0.84           0.84           0.84           0.84           0.84           0.84           0.87           0.87	Br def def def def def def def def def def	
01/10/82 01/15/83 01/07/84 01/26/85 01/12/86 01/18/87 01/16/88 01/29/89 01/14/90 01/20/91 01/20/91 01/19/92 01/24/93 01/15/95 01/07/96 01/12/97 01/11/98 01/17/99 01/09/00 01/07/01 01/27/02 01/19/03	5.29 6.14 14.23 9.67 9.41 7.68 10.20 3.30 3.34 9.45 15.26 80.15 8.71 72.29 34.38 14.66 27.24 26.82 59.80	<b>chycy</b> 14.49 26.36 77.74 45.05 45.05 44.24 39.35 42.44 32.79 23.59 19.43 37.38 37.38 37.38 27.04 42.92 24.45 26.38 26.361 26.66	22.31 39.64 52.08 33.867 61.68 52.60 82.46 59.94 57.95 40.28 47.48 32.57 36.55 30.74 45.59 51.91 47.97 41.89 45.73 41.62	25.07 53.95 62.72 30.21 29.59 26.28 51.12 22.70 28.83 38.10 22.21 27.86 21.95 20.84 16.90 21.59 27.04 28.90 21.59 27.04 28.07 21.59 27.04 28.67 31.40 17.76	0.04 0.05 0.23 0.00 0.00 0.21 1.00 0.00 0.00 0.00 0.00	Image         Image <th< th=""><th>0.00 0.00 3.66 3.03 0.22 4.84 0.56 3.78 0.14 2.26 0.27 12.27 0.73 6.71 0.87 1.43 4.34 0.12 2.55</th><th>0.00 8.00 2.91 1.86 0.00 0.11 2.20 0.28 6.49 0.06 0.44 0.94 3.45 1.59 0.00 0.24 4.09 3.83</th><th>1.78 0.00 0.83 2.955 0.52 0.81 0.00 0.68 0.00 0.39 0.24 0.00 3.19 0.00 3.19 0.00 5.94 3.62 1.50 0.00 0.24 0.77</th><th>24.67 19.55 5.70 0.08 12.70 0.14 0.32 0.38 0.14 0.34 8.66 9.10 3.04 5.45 1.03 12.17 0.09 0.14 2.11 0.00 0.00</th><th><b>G</b> 0.13 0.14 0.04 0.07 0.28 0.02 0.00 0.13 0.15 0.15 0.11 0.00 0.00 0.00 0.00 0.00</th><th>Se 0.00 0.00 0.11 0.08 0.04 0.21 1.96 1.38 0.09 0.49 0.00 0.11 0.09 0.11 0.09 0.17 0.15 0.17 0.83 0.43 0.17</th><th><b>Sec</b> <b>5</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b></th><th>Br ds ds ds ds ds ds ds ds ds ds ds ds ds</th><th></th></th<>	0.00 0.00 3.66 3.03 0.22 4.84 0.56 3.78 0.14 2.26 0.27 12.27 0.73 6.71 0.87 1.43 4.34 0.12 2.55	0.00 8.00 2.91 1.86 0.00 0.11 2.20 0.28 6.49 0.06 0.44 0.94 3.45 1.59 0.00 0.24 4.09 3.83	1.78 0.00 0.83 2.955 0.52 0.81 0.00 0.68 0.00 0.39 0.24 0.00 3.19 0.00 3.19 0.00 5.94 3.62 1.50 0.00 0.24 0.77	24.67 19.55 5.70 0.08 12.70 0.14 0.32 0.38 0.14 0.34 8.66 9.10 3.04 5.45 1.03 12.17 0.09 0.14 2.11 0.00 0.00	<b>G</b> 0.13 0.14 0.04 0.07 0.28 0.02 0.00 0.13 0.15 0.15 0.11 0.00 0.00 0.00 0.00 0.00	Se 0.00 0.00 0.11 0.08 0.04 0.21 1.96 1.38 0.09 0.49 0.00 0.11 0.09 0.11 0.09 0.17 0.15 0.17 0.83 0.43 0.17	<b>Sec</b> <b>5</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b>	Br ds ds ds ds ds ds ds ds ds ds ds ds ds	

November to February. While there is a 9 percent drop in party hours between November and January, there is a 15 percent drop in species and an 11 percent drop in total birds. However, between January and February party hours were constant, but there was an additional 6 percent drop in species and 10 percent drop in bird

abundance. Very likely much of the decrease in species and abundance is real, accounting for — rather than caused by — the decrease in party hours (it takes less time to count fewer birds). On the other hand, since many of the January and February counts are conducted under frigid conditions, volunteers understandably spend less time at each of their sites than they might in milder temperatures, possibly missing a few birds in the process.

The intrawinter trends fall into three relatively distinct patterns. For most species (Red-throated and Common loons, Horned and Red-necked grebes, Double crested Cormorant, Great Blue Heron, the scoters, Bufflehead, Red-breasted Mergansers,

Table 3A- Results from February TASL censuses.

Date 02/17/80 02/08/81 02/05/84 02/05/89 02/17/91 02/02/92 02/27/94 02/12/95 02/04/96 02/04/96 02/08/98 02/06/00 02/04/01 02/10/02 02/16/03	<b>R.T. Loon</b> 0 0 0 0 0 1 1 5 0 0 0 11 7 6 0 20 22 13	<b>C.Loon</b> 0 0 1 1 2 3 11 3 0 1 4 8 2 13 7 4	H.Grebe 18 1 25 29 50 31 22 37 20 8 21 149 31 149 31 137	<b>R.N.Grebe</b> 0 0 0 1 0 1 2 3 2 19 2 13 21 12 27 7 87 0	<b>D.C.Corm</b> 0 1 2 8 10 21 10 4 0 2 0 0 1 2 0 0 1	<b>G.Corm</b> 434 110 725 346 20 9 1 2 1 7 1 3 111 3 111 3 1	Corm spp 0 0 0 0 0 0 3 0 1 0 0 0 1 56 0	G.B.Heron 0 0 3 1 1 1 0 0 0 1 1 0 0 0 1 4 0	Brant 4 1084 4900 1626 1580 1638 2772 1059 772 6305 772 873 1070 899 1437 930 72	<b>C.Goose</b> 0 0 4 10 195 288 142 243 3642 176 389 494 714 1004 1402	$\begin{array}{c} \text{M.Swan} & 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 1 \\ 2 \\ 20 \\ 16 \\ 4 \\ 17 \\ 18 \\ 8 \end{array}$	<b>B.Duck</b> 1440 526 1869 1567 3073 1896 1629 1148 474 1112 1299 1097 696 1630 1030 480	Mallard 88 1 148 157 269 358 133 160 170 339 316 255 320 216 383 401 363	Search 3007 6050 3804 3656 1750 1087 528 939 285 364 947 990 365 757 1304 657 806	Eicer 6859 2600 7917 5901 3839 4994 5739 7387 7387 7387 73625 5514 8606 9491 9199 5289 8903 6643 5535
02/08/04 02/06/05	13 0 10	4 1 26	37 8 64	2	0	2	0	0	328 261	402 184 157	8 16	480 387 889	250 357	57 1083	3835 5516
AVERAGE	5	20 5	64 52	ہ 10	3	4 96	7	1	201 996	<b>317</b>	6	1222	357 247	1497	6231
													5		σ
Da	Scot	Gldney	Buflh	R.B.Me	L.T.Du	B.B.P	Sndrlir	P.Sar	Duni	Bnparte	BI.Hd.Gu	Harb Se	tal Specie	Total Birc	arty Hou
<b>Date</b> 02/17/80	Scoter 3	Gldneye 628	Buflhd 814	<b>R.B.Merg</b> 702	L.T.Duck <sup>2</sup>	<b>B.B.Plo</b> <sup>O</sup>	Sndrling <sup>2</sup>	<b>P.Sand</b> 15	Dunlin 138	Bnpartes 7	BI.Hd.Gull 5	Harb Seal <sup>1</sup>	Total Species 25	Total Birds 12930	Party Hours 25
02/17/80 02/08/81	33 0	628 728	814 769	702 833	2 0	0 0	2 0	15 75	138 0	7 0	5 0	1 0	25 12	12930 9779	25 14.25
02/17/80 02/08/81 02/07/82 02/05/84	33 0 523 265	628 728 982 1632	814 769 1006 1497	702 833 1542 779	2 0 2 3	0 0 0 0	2 0 0 30	15 75 468 88	138 0 0 2	7 0 0 1	5 0 1 1	1 0 0 2	25 12 27 27	12930 9779 16124 13256	25 14.25 31.5 26.5
02/17/80 02/08/81 02/07/82 02/05/84 02/05/89	33 0 523 265 93	628 728 982 1632 1817	814 769 1006 1497 2605	702 833 1542 779 603	2 0 2 3 0	0 0 0 0	2 0 0 30 200	15 75 468 88 135	138 0 0 2 39	7 0 0 1 85	5 0 1 1 14	1 0 2 14	25 12 27 27 28	12930 9779 16124 13256 10849	25 14.25 31.5 26.5 31.75
02/17/80 02/08/81 02/07/82 02/05/84	33 0 523 265	628 728 982 1632	814 769 1006 1497	702 833 1542 779	2 0 2 3	0 0 0 0	2 0 0 30	15 75 468 88	138 0 0 2	7 0 0 1	5 0 1 1	1 0 0 2	25 12 27 27 28	12930 9779 16124 13256	25 14.25 31.5 26.5
02/17/80 02/08/81 02/07/82 02/05/84 02/05/89 02/17/91 02/02/92 02/21/93	33 0 523 265 93 256 171 345	628 728 982 1632 1817 1033 1017 751	814 769 1006 1497 2605 1654 1320 1105	702 833 1542 779 603 757 845 662	2 0 2 3 0 0 4	0 0 0 0 0 0 0	2 0 30 200 19 41 66	15 75 468 88 135 10 14 0	138 0 2 39 7 36 13	7 0 1 85 11 131 0	5 0 1 14 8 2 2	1 0 2 14 5 0 7	25 12 27 28 28 28 26 24	12930 9779 16124 13256 10849 11468 9296 10719	25 14.25 31.5 26.5 31.75 38 31.25 30.5
02/17/80 02/08/81 02/07/82 02/05/84 02/05/89 02/17/91 02/02/92 02/21/93 02/27/94	33 0 523 265 93 256 171 345 655	628 728 982 1632 1817 1033 1017 751 531	814 769 1006 1497 2605 1654 1320 1105 758	702 833 1542 779 603 757 845 662 460	2 0 2 3 0 0 0 4 0	0 0 0 0 0 0 0 0	2 0 30 200 19 41 66 2	15 75 468 88 135 10 14 0 23	138 0 2 39 7 36 13 125	7 0 1 85 11 131 0 0	5 0 1 14 8 2 2 5	1 0 2 14 5 0 7 3	25 12 27 28 28 28 26 24 22	12930 9779 16124 13256 10849 11468 9296 10719 5265	25 14.25 31.5 26.5 31.75 38 31.25 30.5 25.25
02/17/80 02/08/81 02/07/82 02/05/84 02/05/89 02/17/91 02/02/92 02/21/93 02/27/94 02/12/95 02/04/96	33 0 523 265 93 256 171 345 655 443 343	628 728 982 1632 1817 1033 1017 751 531 469 597	814 769 1006 1497 2605 1654 1320 1105 758 858 744	702 833 1542 779 603 757 845 662 460 341 388	2 0 2 3 0 0 0 4 0 2	0 0 0 0 0 0 0 0 0 0 0	2 0 30 200 19 41 66 2 133 44	15 75 468 88 135 10 14 0 23 2 0	138 0 2 39 7 36 13 125 1 0	7 0 1 85 11 131 0 0 1 58	5 0 1 14 2 2 5 7 6	1 0 2 14 5 0 7 3 1 2	25 12 27 28 28 26 24 22 27 26	12930 9779 16124 13256 10849 11468 9296 10719 5265 8640 12143	25 14.25 31.5 26.5 31.75 38 31.25 30.5 25.25 28 29.5
02/17/80 02/08/81 02/07/82 02/05/84 02/05/89 02/17/91 02/02/92 02/21/93 02/27/94 02/12/95 02/04/96 02/09/97	33 0 523 265 93 256 171 345 655 443 343 667	628 728 982 1632 1817 1033 1017 751 531 469 597 675	814 769 1006 1497 2605 1654 1320 1105 758 858 744 1484	702 833 1542 779 603 757 845 662 460 341 388 716	2 0 2 3 0 0 0 4 0 2 27	0 0 0 0 0 0 0 0 0 0 0 0 0	2 0 30 200 19 41 66 2 133 44 72	15 75 468 88 135 10 14 0 23 2 0 11	138 0 2 39 7 36 13 125 1 0 15	7 0 1 85 11 131 0 0 1 58 13	5 0 1 14 2 2 5 7 6 3	1 0 2 14 5 0 7 3 1 2 3	25 12 27 28 28 28 26 24 22 27 26 29	12930 9779 16124 13256 10849 11468 9296 10719 5265 8640 12143 13231	25 14.25 31.5 26.5 31.75 38 31.25 30.5 25.25 28 29.5 34.25
02/17/80 02/08/81 02/07/82 02/05/84 02/05/89 02/17/91 02/02/92 02/21/93 02/27/94 02/12/95 02/04/96	33 0 523 265 93 256 171 345 655 443 343	628 728 982 1632 1817 1033 1017 751 531 469 597	814 769 1006 1497 2605 1654 1320 1105 758 858 744	702 833 1542 779 603 757 845 662 460 341 388	2 0 2 3 0 0 0 4 0 2	0 0 0 0 0 0 0 0 0 0 0	2 0 30 200 19 41 66 2 133 44	15 75 468 88 135 10 14 0 23 2 0	138 0 2 39 7 36 13 125 1 0	7 0 1 85 11 131 0 0 1 58	5 0 1 14 2 2 5 7 6	1 0 2 14 5 0 7 3 1 2	25 12 27 28 28 26 24 22 27 26	12930 9779 16124 13256 10849 11468 9296 10719 5265 8640 12143	25 14.25 31.5 26.5 31.75 38 31.25 30.5 25.25 28 29.5
02/17/80 02/08/81 02/07/82 02/05/84 02/05/89 02/17/91 02/02/92 02/21/93 02/27/94 02/12/95 02/04/96 02/09/97 02/08/98 02/06/00 02/04/01	33 0 523 265 93 256 171 345 655 443 343 667 775 510 1045	628 728 982 1632 1817 1033 1017 751 531 469 597 675 627 573 1095	814 769 1006 1497 2605 1654 1320 1105 758 858 744 1484 1080 1225 1619	702 833 1542 779 603 757 845 662 460 341 388 716 662 331 782	2 0 2 3 0 0 0 4 0 2 27 34 23 43	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2 0 200 19 41 66 2 133 44 72 30 48 380	15 75 468 88 135 10 14 0 23 2 0 11 90 0 0	138 0 2 39 7 36 13 125 1 0 15 35 0 92	7 0 1 85 11 131 0 1 58 13 44 2 1	5 0 1 14 8 2 5 7 6 3 0 0 0	1 0 2 14 5 0 7 3 1 2 3 2 4 77	25 12 27 28 28 28 26 24 22 27 26 29 30 25 34	12930 9779 16124 13256 10849 11468 9296 10719 5265 8640 12143 13231 12618 8632 15140	25 14.25 31.5 26.5 31.25 30.5 25.25 28 29.5 34.25 36.25 29.75 35.75
02/17/80 02/08/81 02/07/82 02/05/84 02/05/89 02/17/91 02/02/92 02/21/93 02/27/94 02/12/95 02/04/96 02/09/97 02/08/98 02/06/00 02/04/01 02/10/02	33 0 523 265 93 256 171 345 655 443 343 667 775 510 1045 801	628 728 982 1632 1817 1033 1017 751 531 469 597 675 627 573 1095 775	814 769 1006 1497 2605 1654 1320 1105 758 858 744 1484 1080 1225 1619 1472	702 833 1542 779 603 757 845 662 460 341 388 716 662 331 782 749	2 0 2 3 0 0 0 4 0 2 27 34 23 43 12	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1	2 0 30 200 19 41 66 2 133 44 72 30 48 380 4	15 75 468 88 135 10 14 0 23 2 0 11 90 0 1	138 0 2 39 7 36 13 125 1 0 15 35 0 92 20	7 0 1 85 11 131 0 1 58 13 44 2 1 0	5 0 1 14 8 2 2 5 7 6 3 0 0 0 0 0	1 0 2 14 5 0 7 3 1 2 3 2 4 77 3	25 12 27 28 28 28 26 24 22 27 26 29 30 25 34 31	12930 9779 16124 13256 10849 11468 9296 10719 5265 8640 12143 13231 12618 8632 15140 10907	25 14.25 31.5 26.5 31.25 30.5 25.25 28 29.5 34.25 36.25 29.75 35.75 34.25
02/17/80 02/08/81 02/07/82 02/05/84 02/05/89 02/17/91 02/02/92 02/21/93 02/27/94 02/12/95 02/04/96 02/09/97 02/08/98 02/06/00 02/04/01	33 0 523 265 93 256 171 345 655 443 343 667 775 510 1045 801	628 728 982 1632 1817 1033 1017 751 531 469 597 675 627 573 1095	814 769 1006 1497 2605 1654 1320 1105 758 858 744 1484 1080 1225 1619	702 833 1542 779 603 757 845 662 460 341 388 716 662 331 782	2 0 2 3 0 0 0 4 0 2 27 34 23 43	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2 0 200 19 41 66 2 133 44 72 30 48 380	15 75 468 88 135 10 14 0 23 2 0 11 90 0 0	138 0 2 39 7 36 13 125 1 0 15 35 0 92	7 0 1 85 11 131 0 1 58 13 44 2 1	5 0 1 14 8 2 5 7 6 3 0 0 0	1 0 2 14 5 0 7 3 1 2 3 2 4 77	25 12 27 28 28 28 26 24 22 27 26 29 30 25 34	12930 9779 16124 13256 10849 11468 9296 10719 5265 8640 12143 13231 12618 8632 15140	25 14.25 31.5 26.5 31.25 30.5 25.25 28 29.5 34.25 36.25 29.75 35.75
02/17/80 02/08/81 02/07/82 02/05/84 02/05/89 02/17/91 02/02/92 02/21/93 02/27/94 02/12/95 02/04/96 02/09/97 02/08/98 02/06/00 02/08/98	33 0 523 265 93 256 171 345 655 443 343 667 775 510 1045 801 1497 441	628 728 982 1632 1817 1033 1017 751 531 469 597 675 627 573 1095 775 1209	814 769 1006 1497 2605 1654 1320 1105 758 858 748 1484 1080 1225 1619 1472 1433	702 833 1542 779 603 757 845 662 460 341 388 716 662 331 782 749 413	2 0 2 3 0 0 0 4 0 0 2 27 34 23 43 12 20	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0	2 0 30 200 19 41 66 2 133 44 72 30 48 380 4 4	$     15 \\     75 \\     468 \\     88 \\     135 \\     10 \\     14 \\     0 \\     23 \\     2 \\     0 \\     11 \\     90 \\     0 \\     1 \\     0 \\     1 \\     0   $	138 0 2 39 7 36 13 125 1 0 15 35 0 92 20 5	7 0 1 85 11 131 0 1 58 13 44 2 1 0 0	$5 \\ 0 \\ 1 \\ 14 \\ 8 \\ 2 \\ 2 \\ 5 \\ 7 \\ 6 \\ 3 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0$	1 0 2 14 5 0 7 3 1 2 3 2 4 77 3 1	25 12 27 28 28 28 24 22 27 26 29 30 25 34 31 26	12930 9779 16124 13256 10849 11468 9296 10719 5265 8640 12143 13231 12618 8632 15140 10907 8722	25 14.25 31.5 26.5 31.75 30.5 25.25 28 29.5 34.25 36.25 29.75 35.75 34.25 21.25

Table 3B - Factors impacting February censuses.

Date 02/17/80 Missing approximately 5% of currrent sites and Long I., rough seas, ice in southern harbor. 02/08/81 Missing approximately 5% of currrent sites and Long I., Nahant, Weymouth, Hull,; rough sea 02/07/82 Missing approximately 5% of currrent sites and Long I. 02/05/84 Missing approximately 5% of currrent sites and Long I.; drizzle and fog 02/05/89 02/17/91 02/02/92 Missing Deer I. 02/21/93 Intermittent snow in late am 02/27/94 Missing Long I., rough seas, ice in southern harbor 02/12/95 Missing Long I., rough seas, ice in southern harbor 02/04/96 02/09/97 02/08/98 Rough seas 02/06/00 Ice in southern harbor 02/04/01 02/10/02 02/16/03 Missing sites on Long I. and Nahant; ice in southern harbor. 02/08/04 Missing site on Long I., rough seas; ice in southern harbor 02/06/05 Missing site on Long I.; ice in southern harbor.

Long-tailed Duck, Black-bellied Plover, Sanderling, Dunlin, and Bonaparte's Gull) there is an approximate 50 percent drop in numbers between November and January and a further but more measured decrease from January to February. If we assume that most of the cormorant species reported are Greats (which is reasonable since most are counted as silhouettes on the Outer Harbor Islands where this species is known to winter), then Great Cormorant falls into this category as well. Seal sightings also are highest in November.

A second pattern, observed in Brant and Common Eider, shows smaller decreases of approximately 10 percent between November and January with a similar additional decrease into February. This decrease, however, may be a result of the comparable 9 percent decrease in party hours across the same period. Clearly, for these two species, abundance in November is a reasonably good predictor of abundance in February. This is also the case for Mute Swan and Purple Sandpiper, which show no particular trend from November to February.

The third pattern observed is for Canada Goose, American Black Duck, Mallard, Common Goldeneye, and Greater Scaup. For these species the highest abundance is in January or (in the case of Greater Scaup) in February. We assume that these birds stay as far north (or inland) as possible until ice covers the inland waters, forcing their flight south and east.



COMMON GOLDENEYES BY DENISE BRAUNHARDT CABRAL

Table 3C - Birds per party hour- February.

Date 02/17/80 02/08/81 02/05/84 02/05/89 02/17/91 02/02/92 02/27/94 02/12/95	R.T. Loon 0.00 0.00 0.00 0.00 0.00 0.03 0.16 0.00 0.00 0.00	C.Loon 0.00 0.03 0.03 0.03 0.05 0.10 0.36 0.12 0.00	H.Grebe 0.72 0.07 1.09 1.57 0.82 0.70 1.21 0.79 0.29	<b>R.N.Grebe</b> 0.00 0.00 0.00 0.04 0.00 0.03 0.06 0.10 0.08 0.68	0.07 0.06	<b>G.Corm</b> 17.36 7.72 23.02 13.06 0.72 0.42 0.64 0.30 0.04 0.07	Corm spp 0.00 0.00 0.00 0.00 0.00 0.00 0.10 0.00 0.04 0.00	<b>G.B.Heron</b> 0.00 0.10 0.04 0.03 0.03 0.00 0.00 0.00 0.00	Brant 43.36 34.39 51.62 59.62 51.59 72.95 33.89 25.31 24.95 22.68	C.Goose 0.00 0.13 0.13 6.14 7.58 4.54 7.97 2.10 22.93	<b>M.Swan</b> 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.20 0.04 0.07	<b>B.Duck</b> 57.60 36.91 59.33 59.13 96.79 49.89 52.13 37.64 18.77 39.71	Mallard 3.52 0.07 4.70 5.92 8.47 9.42 4.26 5.25 6.73 12.11	28.61 16.90 30.79 11.29	182.46 251.33
02/04/96 02/09/97 02/08/98 02/06/00 02/04/01 02/10/02 02/16/03 02/08/04 02/06/05	0.00 0.32 0.19 0.20 0.56 0.64 0.61 0.00 0.32	0.03 0.12 0.22 0.07 0.36 0.20 0.19 0.04 0.83	0.71 2.36 4.11 1.04 6.46 3.45 1.74 0.30 2.05	0.07 0.38 0.58 0.40 0.76 2.54 0.00 0.08 0.10	0.00 0.03 0.07 0.00 0.00 0.05 0.00 0.00	0.03 0.20 0.03 0.10 3.10 0.09 0.05 0.08 0.13	0.00 0.00 0.03 1.65 1.93 0.00 0.00 0.00	0.00 0.00 0.00 0.03 0.12 0.00 0.00 0.00	26.17 25.49 29.52 30.22 40.20 27.15 3.39 12.38 8.35	5.97 11.36 13.63 24.00 28.08 26.89 18.92 6.94 5.02	0.07 0.58 0.44 0.13 0.48 0.53 0.38 0.30 0.51	44.03 32.03 26.68 23.39 45.59 30.07 22.59 14.60 28.45	10.71 7.45 8.83 7.26 10.71 11.71 17.08 9.43 11.42	28.91 10.07 25.45 36.48 19.18 37.93 2.15	291.73 277.11 253.77 177.78 249.03 193.96 307.53 144.72 176.51
AVERAGE	0.16	0.15	1.59	0.31	0.10	3.53	0.20	0.02	32.80	10.14	0.20	40.81	8.16	62.43	211.67
		-		в	-		(0					Ŧ	<b>F</b> otal	Tot	
Date	Scoter	Gldneye	Buflhd	R.B.Merg	L.T.Duck	B.B.PIO	Sndrling	P.Sand	Dunlin	Bnpartes	BI.Hd.Gull	Harb Seal	Total Species	Total Birds	
02/17/80	1.32	25.12	32.56	.B.Merg 28.08	0.08	. <b>B.Pio</b> 0.00	0.08	0.60	5.52	0.28	<b>Gull</b> 0.20	<b>Sea</b> 0.04	1.00	Birds 611.04	
	1.32 0.00	25.12	32.56 53.96	<b>B.Merg</b> 28.08 58.46		.B.Plo					Gull	Seal	1.00 0.84	Birds	
02/17/80 02/08/81 02/07/82 02/05/84	1.32 0.00 16.60 10.00	25.12 51.09 31.17 61.58	32.56 53.96 31.94 56.49	<b>B.Merg</b> 28.08 58.46 48.95 29.40	0.08 0.00 0.06 0.11	.B.Plo 0.00 0.00 0.00 0.00	0.08 0.00 0.00 1.13	0.60 5.26 14.86 3.32	5.52 0.00 0.00 0.08	0.28 0.00 0.00 0.04	<b>Gui</b> 0.20 0.00 0.03 0.04	0.04 0.00 0.00 0.08	1.00 0.84 0.86 1.02	<b>Birds</b> 611.04 855.02 655.49 662.42	
02/17/80 02/08/81 02/07/82 02/05/84 02/05/89	1.32 0.00 16.60 10.00 2.93	25.12 51.09 31.17 61.58 57.23	32.56 53.96 31.94 56.49 82.05	<b>B.Merg</b> 28.08 58.46 48.95 29.40 18.99	0.08 0.00 0.06 0.11 0.00	. <b>B</b> . <b>P</b> . 0.00 0.00 0.00 0.00 0.00	0.08 0.00 0.00 1.13 6.30	0.60 5.26 14.86 3.32 4.25	5.52 0.00 0.00 0.08 1.23	0.28 0.00 0.00 0.04 2.68	<b>Gui</b> 0.20 0.00 0.03 0.04 0.44	0.04 0.00 0.00 0.08 0.44	1.00 0.84 0.86 1.02 0.88	<b>Birds</b> 611.04 855.02 655.49 662.42 517.80	
02/17/80 02/08/81 02/07/82 02/05/84 02/05/89 02/17/91	1.32 0.00 16.60 10.00 2.93 6.74	25.12 51.09 31.17 61.58 57.23 27.18	32.56 53.96 31.94 56.49 82.05 43.53	28.08 58.46 48.95 29.40 18.99 19.92	0.08 0.00 0.06 0.11 0.00 0.00		0.08 0.00 1.13 6.30 0.50	0.60 5.26 14.86 3.32 4.25 0.26	5.52 0.00 0.00 0.08 1.23 0.18	0.28 0.00 0.00 0.04 2.68 0.29	Gull 0.20 0.00 0.03 0.04 0.44 0.21	0.04 0.00 0.00 0.08 0.44 0.13	1.00 0.84 0.86 1.02 0.88 0.74	<b>Birds</b> 611.04 855.02 655.49 662.42 517.80 400.61	
02/17/80 02/08/81 02/07/82 02/05/84 02/05/89	1.32 0.00 16.60 10.00 2.93 6.74 5.47	25.12 51.09 31.17 61.58 57.23	32.56 53.96 31.94 56.49 82.05 43.53 42.24	.B.Merg 28.08 58.46 48.95 29.40 18.99 19.92 27.04	0.08 0.00 0.06 0.11 0.00	. <b>B</b> . <b>P</b> . 0.00 0.00 0.00 0.00 0.00	0.08 0.00 0.00 1.13 6.30	0.60 5.26 14.86 3.32 4.25	5.52 0.00 0.00 0.08 1.23	0.28 0.00 0.00 0.04 2.68	<b>Gui</b> 0.20 0.00 0.03 0.04 0.44	0.04 0.00 0.00 0.08 0.44	1.00 0.84 0.86 1.02 0.88 0.74 0.83	<b>Birds</b> 611.04 855.02 655.49 662.42 517.80	
02/17/80 02/08/81 02/07/82 02/05/84 02/05/89 02/17/91 02/02/92 02/21/93 02/27/94	1.32 0.00 16.60 10.00 2.93 6.74 5.47 11.31 25.94	25.12 51.09 31.17 61.58 57.23 27.18 32.54 24.62 21.03	32.56 53.96 31.94 56.49 82.05 43.53 42.24 36.23 30.02	<b>B.Merg</b> 28.08 58.46 48.95 29.40 18.99 19.92 27.04 21.70 18.22	0.08 0.00 0.11 0.00 0.00 0.00 0.13 0.00	.B.Plo 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	0.08 0.00 1.13 6.30 0.50 1.31 2.16 0.08	0.60 5.26 14.86 3.32 4.25 0.26 0.45 0.00 0.91	5.52 0.00 0.08 1.23 0.18 1.15 0.43 4.95	0.28 0.00 0.04 2.68 0.29 4.19 0.00 0.00	Gull 0.20 0.03 0.04 0.44 0.21 0.06 0.07 0.20	8 0.04 0.00 0.08 0.44 0.13 0.00 0.23 0.12	1.00 0.84 0.86 1.02 0.88 0.74 0.83 0.79 0.87	Birds 611.04 855.02 655.49 662.42 517.80 400.61 411.94 448.10 309.86	
02/17/80 02/08/81 02/07/82 02/05/84 02/05/89 02/17/91 02/02/92 02/21/93 02/27/94 02/12/95	1.32 0.00 16.60 10.00 2.93 6.74 5.47 11.31 25.94 15.82	25.12 51.09 31.17 61.58 57.23 27.18 32.54 24.62 21.03 16.75	32.56 53.96 31.94 56.49 82.05 43.53 42.24 36.23 30.02 30.64	<b>B.Merg</b> 28.08 58.46 48.95 29.40 18.99 19.92 27.04 21.70 18.22 12.18	0.08 0.00 0.06 0.11 0.00 0.00 0.00 0.13 0.00 0.00	<b>B</b> , <b>P</b> , <b>6</b> 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	0.08 0.00 1.13 6.30 0.50 1.31 2.16 0.08 4.75	0.60 5.26 14.86 3.32 4.25 0.26 0.45 0.00 0.91 0.07	5.52 0.00 0.08 1.23 0.18 1.15 0.43 4.95 0.04	0.28 0.00 0.04 2.68 0.29 4.19 0.00 0.00 0.04	Gull 0.20 0.03 0.04 0.44 0.21 0.06 0.07 0.20 0.25	Sel 0.04 0.00 0.08 0.44 0.13 0.00 0.23 0.12 0.04	1.00 0.84 0.86 1.02 0.88 0.74 0.83 0.79 0.87 0.96	<b>B</b> 611.04 855.02 655.49 662.42 517.80 400.61 411.94 448.10 309.86 389.11	
02/17/80 02/08/81 02/07/82 02/05/84 02/05/89 02/17/91 02/02/92 02/21/93 02/27/94 02/12/95 02/04/96	1.32 0.00 16.60 10.00 2.93 6.74 5.47 11.31 25.94 15.82 11.63	25.12 51.09 31.17 61.58 57.23 27.18 32.54 24.62 21.03 16.75 20.24	32.56 53.96 31.94 56.49 82.05 43.53 42.24 36.23 30.02 30.64 25.22	B.Merg 28.08 58.46 48.95 29.40 18.99 19.92 27.04 21.70 18.22 12.18 13.15	0.08 0.00 0.06 0.11 0.00 0.00 0.00 0.13 0.00 0.00 0.00	B.P. 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.08 0.00 1.13 6.30 0.50 1.31 2.16 0.08 4.75 1.49	0.60 5.26 14.86 3.32 4.25 0.26 0.45 0.00 0.91 0.07 0.00	5.52 0.00 0.08 1.23 0.18 1.15 0.43 4.95 0.04 0.00	0.28 0.00 0.04 2.68 0.29 4.19 0.00 0.00 0.00 0.04 1.97	<b>Gui</b> 0.20 0.00 0.03 0.04 0.21 0.06 0.07 0.20 0.25 0.20	Sel 0.04 0.00 0.08 0.44 0.13 0.00 0.23 0.12 0.04 0.07	1.00 0.84 0.86 1.02 0.88 0.74 0.83 0.79 0.87 0.96 0.88	<b>B</b> 611.04 855.02 655.49 662.42 517.80 400.61 411.94 448.10 309.86 389.11 485.59	
02/17/80 02/08/81 02/07/82 02/05/84 02/05/89 02/17/91 02/02/92 02/21/93 02/27/94 02/12/95 02/04/96 02/09/97	1.32 0.00 16.60 10.00 2.93 6.74 5.47 11.31 25.94 15.82 11.63 19.47	25.12 51.09 31.17 61.58 57.23 27.18 32.54 24.62 21.03 16.75 20.24 19.71	32.56 53.96 31.94 56.49 82.05 43.53 42.24 36.23 30.02 30.64 25.22 43.33	B.Merg 28.08 58.46 48.95 29.40 18.99 19.92 27.04 21.70 18.22 12.18 13.15 20.91	0.08 0.00 0.06 0.11 0.00 0.00 0.00 0.00 0.00	B.Plo 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	0.08 0.00 1.13 6.30 0.50 1.31 2.16 0.08 4.75 1.49 2.10	0.60 5.26 14.86 3.32 4.25 0.26 0.45 0.00 0.91 0.07 0.00 0.32	5.52 0.00 0.08 1.23 0.18 1.15 0.43 4.95 0.04 0.00 0.44	0.28 0.00 0.04 2.68 0.29 4.19 0.00 0.00 0.00 0.04 1.97 0.38	<b>Gu</b> 0.20 0.00 0.03 0.04 0.21 0.06 0.07 0.20 0.25 0.20 0.09	Sec. 10.04 0.04 0.00 0.08 0.44 0.13 0.00 0.23 0.12 0.04 0.07 0.09	1.00 0.84 0.86 1.02 0.88 0.74 0.83 0.79 0.87 0.96 0.88 0.85	<b>Br</b> <b>d</b> 611.04 855.02 655.49 662.42 517.80 400.61 411.94 448.10 309.86 309.86 389.11 485.59 493.84	
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02/17/80 02/08/81 02/07/82 02/05/84 02/05/89 02/17/91 02/02/92 02/21/93 02/27/94 02/12/95 02/04/96 02/09/97	1.32 0.00 16.60 10.00 2.93 6.74 5.47 11.31 25.94 15.82 11.63 19.47 21.38 17.14	25.12 51.09 31.17 61.58 57.23 27.18 32.54 24.62 21.03 16.75 20.24 19.71	32.56 53.96 31.94 56.49 82.05 43.53 42.24 36.23 30.02 30.64 25.22 43.33 29.79 41.18	B.Merg 28.08 58.46 48.95 29.40 19.99 27.04 21.70 18.22 12.18 13.15 20.91 18.26 11.13	0.08 0.00 0.06 0.11 0.00 0.00 0.00 0.00 0.00	BPC 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	0.08 0.00 1.13 6.30 0.50 1.31 2.16 0.08 4.75 1.49 2.10	0.60 5.26 14.86 3.32 4.25 0.26 0.45 0.00 0.91 0.07 0.00 0.32	5.52 0.00 0.08 1.23 0.18 1.15 0.43 4.95 0.04 0.00 0.44	0.28 0.00 0.04 2.68 0.29 4.19 0.00 0.00 0.00 0.04 1.97 0.38	<b>Gu</b> 0.20 0.00 0.03 0.04 0.21 0.06 0.07 0.20 0.25 0.20 0.09	Sec. 10.04 0.04 0.00 0.08 0.44 0.13 0.00 0.23 0.12 0.04 0.07 0.09	1.00 0.84 0.86 1.02 0.88 0.74 0.83 0.79 0.87 0.96 0.88 0.85 0.83 0.84	<b>Br</b> <b>d</b> 611.04 855.02 655.49 662.42 517.80 400.61 411.94 448.10 309.86 309.86 389.11 485.59 493.84	
02/17/80 02/08/81 02/07/82 02/05/84 02/05/89 02/17/91 02/02/92 02/21/93 02/27/94 02/12/95 02/04/96 02/09/97 02/08/98 02/06/00 02/04/01 02/10/02	$\begin{array}{c} 1.32\\ 0.00\\ 16.60\\ 10.00\\ 2.93\\ 6.74\\ 5.47\\ 11.31\\ 25.94\\ 15.82\\ 11.63\\ 19.47\\ 21.38\\ 17.14\\ 29.23\\ 23.39\end{array}$	25.12 51.09 31.17 61.58 57.23 27.18 32.54 24.62 21.03 16.75 20.24 19.71 17.30 19.26 30.63 22.63	32.56 53.96 31.94 56.49 82.05 43.53 42.24 36.23 30.02 30.64 25.22 43.33 29.79 41.18 45.29 42.98	B.Merg 28.08 58.46 48.95 29.40 19.92 27.04 21.70 18.22 12.18 13.15 20.91 18.26 11.13 21.87 21.87	0.08 0.00 0.06 0.11 0.00 0.00 0.00 0.00 0.00	B.Plo 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	$\begin{array}{c} 0.08\\ 0.00\\ 0.00\\ 1.13\\ 6.30\\ 0.50\\ 1.31\\ 2.16\\ 0.08\\ 4.75\\ 1.49\\ 2.10\\ 0.83\\ 1.61\\ 10.63\\ 0.12 \end{array}$	0.60 5.26 14.86 3.32 4.25 0.26 0.45 0.00 0.91 0.07 0.00 0.32 2.48 0.00 0.00 0.00 0.03	5.52 0.00 0.08 1.23 0.18 1.15 0.43 4.95 0.04 0.00 0.44 0.97 0.00 2.57 0.58	0.28 0.00 0.04 2.68 0.29 4.19 0.00 0.00 0.00 1.97 0.38 1.21 0.07 0.03 0.00	Gui 0.20 0.00 0.03 0.04 0.21 0.20 0.20 0.25 0.20 0.09 0.00 0.00 0.00 0.00	Sec. 2014 0.04 0.00 0.08 0.44 0.13 0.00 0.23 0.12 0.04 0.07 0.09 0.06 0.13 2.15 0.09	1.00 0.84 0.86 1.02 0.88 0.74 0.83 0.79 0.86 0.88 0.85 0.83 0.84 0.95 0.91	Br df1.04 855.02 655.49 662.42 517.80 400.61 411.94 448.10 309.86 389.11 485.59 493.84 441.24 381.31 564.95 430.42	
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#### **Interannual trends**

Since January TASL counts have been undertaken continuously since 1982, and since by January the wintering waterfowl population is generally established, we use the January counts as the best indicator of interannual trends. Data from the November and February counts can be used to provide support for observed January trends.

A number of species show no indication of long-term change. Great Blue Heron, Black-bellied Plover, Sanderling, and Purple Sandpiper are not common in the Harbor Table 4 - Monthly average results of selected TASL counts.

Month November January February	<b>R.T. Loon</b> 41 4 2	<b>C.Loon</b> 12 5 3	<b>H.Grebe</b> 183 67 30	<b>R.N.Grebe</b> 17 26 5	<b>D.C.Corm</b> 85 22 4	<b>G.Corm</b> 78 24 101	Corm spp 66 7 0	<b>G.B.Heron</b> 13 4 0	Brant 1174 934 943	<b>C.Goose</b> 164 353 230	<b>M.Swan</b> 5 4 3	<b>B.Duck</b> 980 1357 1044	<b>Mallard</b> 110 290 187	<b>Scaup</b> 359 718 1007	<b>Eider</b> 5975 5758 5427
Month November January February	<b>Scoter</b> 1275 522 338	<b>Gidneye</b> 327 823 601	<b>Bufihd</b> 1726 1199 880	<b>R.B.Merg</b> 1649 746 558	L.T.Duck 45 4 6	<b>B.B.Plo</b> 44 2 0	<b>Sndrling</b> 136 72 32	<b>P.Sand</b> 32 21 52	<b>Dunlin</b> 176 31 30	<b>Bnpartes</b> 720 76 21	Bl.Hd.Gull <sup>ຕ</sup> ິດິດ	Harb Seal <sup>6 ® 2</sup>	<b>Total Species</b> 29 24 22	<b>Total Birds</b> 15394 13072 11506	<b>Party Hours</b> 27 26 25

in January but show much year-to-year fluctuation. In contrast, Common Eider and Bufflehead are two of the most abundant wintering species in the area. Bufflehead populations have always been relatively constant whereas Eider populations appear to be much more variable. This variability appears due in part to observer access (or lack thereof) to Deer and Long Islands, as well as to weather conditions. Since many Harbor birds are found in and around the islands at the mouth of the Harbor, lack of access or poor visibility limits the accuracy of Eider counts.

For Dunlin, Red-breasted Merganser, and Common Goldeneye, the only observed population change appears over the past several years, possibly as a result of the comparatively severe winters. Winter conditions may also be responsible for the recent very low numbers of American Black Duck and Brant. However, our data and observations from other areas in the region suggest that these species may be in a longer-term downward trend.

The numbers for Bonaparte's and Black-headed gulls also show a decrease over the past several years. The decrease of both is linked to the recently completed (2000) pipeline that now transfers Boston's wastewater effluent discharge from Deer Island nine miles eastward into Massachusetts Bay. Both species were commonly observed feeding in the effluent plume at the tip of Deer Island or at the treatment facility itself but have not been seen at these locations since 2000.

The population of Great Cormorants (identified Great Cormorants as well as birds recorded as "cormorant sp.") has decreased markedly since the early 1980s. While November counts of Double-crested Cormorants have been highly variable, the number overwintering in the harbor has been very low over the past decade as compared to the 1984-1995 period.

Lastly, Greater Scaup decreased dramatically from the early 1980s to the late 1990s. Over the past several winters the population has been variable but possibly showing an increase.

Not everything has been decreasing. Mallard, Canada Goose, and Mute Swan all are displaying long-term increases. Red-throated Loon, Red-necked Grebe, Long-



LINE ART BY DENISE BRAUNHARDT CABRAL

tailed Duck, White-winged Scoter, and Surf Scoter have been more common in the Harbor since the late 1990s. To some extent the same can be said of Common Loon and Horned Grebe. Harbor Seals also have increased in the harbor since the late 1980s as they have throughout the region. The increase is thought to be a population rebound after a distemper epidemic wiped out many seals in the Gulf of Maine region a decade earlier.

#### Conclusion

Part one of this report is intended to provide an overview of the history, goals, and methods of the TASL project and a summary of its Boston Harbor waterbird data from 1980 to 2005. In addition, we have identified several possible species population trends.

The TASL Boston Harbor project began as a means of collecting baseline bird abundance data in the event of environmental tragedy. What was unforeseen in 1980 was that the project would bracket the "before" and the "after" of the Harbor cleanup. We now realize, as we enter our next quarter century of monitoring, that our database represents a valuable tool in assessing population changes that may be due to local conditions such as the Harbor clean-up or year-to-year weather conditions, or to global conditions like climate change or other environmental factors. Part two of this report will cover some of the more conjectural aspects of our analysis. The success of this project is entirely due to the enthusiasm and perseverance of innumerable volunteers counting birds under often inhospitable conditions. Our thanks once again to all the route leaders and participants.  $\checkmark$ 

Maury Hall, Project Manager / Environmental Scientist at Massachusetts Water Resources Authority (MWRA), has been a lifelong birder. He was on the staff of Massachusetts Audubon Society in 1988 when MAS founded its Boston center and became involved in Boston Harbor monitoring. Maury at that time became involved with TASL data gathering and has been project coordinator ever since. Maury lives in South Boston with his wife Kathleen and teen-age daughter Sarah, and is often seen birding along the South Boston shore or along the Charles River in Watertown. Soheil Zendeh, born in Tehran, grew up in Tehran and Tangier, Morocco, arrived in Cambridge in 1961 as a college freshman, and in 1970 started an auto repair shop in Cambridge, later moved to Watertown. He began birding in 1973, never got a good look at the Newburyport Ross's Gull, got sick of driving to the north shore for birds, and began checking out local Boston spots in 1975, finding the "old puddle in East Boston" in 1976. He founded the Friends of Belle Isle Marsh with Craig Jackson in 1978, then co-founded TASL with Craig Jackson, Dave Lange, Wayne Petersen, Leif Robinson, Bob Stymeist, and many others in 1979. He edited and published Belle Isle News until 2004 and published TASL News from 1980 to 1992. In 1996 he started TASL OnLine. He has also assisted Dick Veit and Ian Nisbet with Muskeget Island tern restoration. Soheil lives in Lexington with his wife Christine and teen-age son Alex.

The authors acknowledge the many people whose support and advice helped them carry out the censuses, among them: Janet Heywood and the Bird Observer staff; H Heusman of Massachusetts Fisheries and Wildlife; Ralph Andrews, formerly with US Fish & Wildlife; Brian Taylor and Brian Dineen, former and current director of Long Island Hospital; and, above all, Wayne Petersen, known as the Godfather of TASL.



## Building a Bird Club in the Digital Age

#### Marjorie Rines

This is the story of a club that just happened, an offshoot of technology that wasn't available when other clubs started. Electronic communication is sometimes criticized for putting distance between people by substituting e-mail for personal contact. This is the story of how it brought people together.



In April of 1998 I got an e-mail message from a woman I didn't know named Renee LaFontaine. She had seen a Long-tailed Duck (then Oldsquaw) near her home, but did not want to post it to the Massbird e-mail Listserv because she was afraid it wouldn't be interesting to all 600 to 700 Massbird subscribers across the state. She knew I lived on Mystic Lake, however, and suggested I might be interested because the bird was in front of my house.

I was interested! I bolted out the door with my binoculars — and there it was. My first (and only) Arlington Long-tailed Duck, and a yard bird to boot.

That night I got thinking about the duck. If Renee hadn't known I lived nearby, I wouldn't have seen it. I knew there were people who felt shy about posting to Massbird when it was only a bird of local interest. I did a bit of research on the web and discovered a server offering free Listservs and created the ArlingtonBirds Listserv. It was incredibly easy. I invited birder friends who lived nearby and posted an invitation to subscribers to the Massbird list to join ArlingtonBirds. The idea, I explained, was to talk about birds in and around the Arlington area. By the end of the week there were thirty subscribers.

People told their friends, friends who were not hard-core birders but were interested in what was seen locally. Backyard birders joined because here was an unthreatening way to ask questions about their feeder birds. Most surprising was discovering how many serious birders whom I had never met lived in the area.

In December 2002 "the" eagle arrived, a fourth-winter female Bald Eagle. After a few days, the eagle settled into a perch in a tree between the Upper and Lower Mystic Lakes on the Arlington/Medford line. She could easily be seen with the naked eye from a large public parking lot between the two lakes. Just before the New Year a second eagle showed up, a fourth-year male. Until the end of February they were almost always seen together — perched in a tree, or feeding on the ice.

All of a sudden e-mail activity picked up enormously. Here there were birds that everyone could identify, with the emotional association of patriotism, as birds you didn't need \$1000 binoculars to view, or birds you could bring your children to see. On weekends birders came almost all day. People mingled and started associating



A Bald Eagle that wintered on the Mystic Lakes was a daily source of discussion and generated a lot of new interest in the club. Photograph by the author.

faces with names. People shared their optics with passersby, and more people discovered the list. By January there were well over 200 list members.

In February of 2003 one of our subscribers, Oakes Plimpton, proposed a social event. Oakes lined up a speaker, arranged for us to use the Community Room of the local library, and promised cookies and cider. To be honest, I was a skeptic. Why would people want to get together with a bunch of strangers they knew only through e-mail? I was sure the audience would be Oakes, myself, and

at best a small handful of others. The poor speaker would face an empty room.

I arrived fifteen minutes early for the 7:30 p.m. meeting and was surprised to see there were already a dozen people there. Oakes had put out about twenty chairs, but as more people streamed in we had to add more. By starting time we had over thirty attendees who were having so much fun chatting that the program didn't start until 8:00. Oakes had each person introduce himself. The group included someone who had bought his first Peterson in 1954 and a woman who had been birding for sixty days (that created a round of applause). At the end of the evening, everyone was excited, and I may have been the most excited one there. This wasn't just an e-mail list, it was a community.

The chat on the list focused on the excitement about the meeting. It felt like a club; why not form a club? Things happened pretty quickly from there. With the infrastructure of the Listserv already in place, we could communicate instantly. The name Arlington Bird Club was rejected when someone suggested the Menotomy Bird Club. Menotomy is the native American name for the Arlington area. It was local without being exclusively Arlington.

An ad hoc Steering Committee met and started putting together a set of goals and a club structure. Ideas swirled as excitement built. We'll give classes in identification of sparrows and warblers and hawks. We'll have dinner meetings, and a newsletter, and a library of reference books for everyone to borrow. We'll have trips to Plum Island and the Berkshires and the Cape; better yet, trips to Vermont and Cape May and beyond! We'll have meetings the third Wednesday of every month. We were going to be the best bird club ever created.

Eventually reality and common sense set in. The more ambitious we tried to be, the more the likelihood of self-immolation, so we set modest goals. We decided on monthly meetings from September to May, but not on a fixed schedule. This policy gave us more flexibility in finding speakers and did not commit us to a schedule that could result in failure. Our field trips would be local, but if someone volunteered to run a trip outside the surrounding area, so much the better. And we would eliminate mailing costs by using the Listserv as the way to communicate.

We decided not to elect officers or charge dues. Realizing that a more formal structure could lead to failure, we agreed to continue as a Steering Committee, with committees of three to four people to spearhead trips, meetings, and refreshments for the meetings. At meetings we would ask for donations to defray the cost of room rental and to start building a club treasury. Later, we created club T-shirts as another way to raise money.

The first official meeting took place about a month after Oakes's social event, and the forty-plus new members who attended were told about upcoming field trips, informed about the meeting scheduled for the following month, and shown our new web site. For a club logo we decided on a stylized eagle based loosely on Native American drawings, to combine the Native American name of the club with the bird that had generated so much excitement at the time of the club's formation.

More than two years later our "little" club continues to thrive. Forty to seventy people typically attend our meetings, and trips can draw over twenty participants. The Listserv has well over 200 subscribers, with many more reading web archives. In 2005 when the club was asked by Mass Audubon to cosponsor the statewide Birders' Meeting, we realized we had become a "real" club.



At the Mass Audubon Birders' Meeting, club volunteers wearing their Menotomy T-shirts were easily identified by attendees searching for information. Photograph by the author.

And, every winter "the" eagle has returned. On a cold February 5, 2005, in a heavy snow cover, Paul Roberts led a trip to the Mystic Lakes cosponsored by the Friends of the Mystic River, and fifty-five participants enjoyed views not only of the eagle, but of three Merlins perching and bathing.

While the group was there, people in the local area, who had heard about the eagle, dropped by. They shared telescopes and binoculars with the trip participants, and — perhaps — a few new birders were born.  $\checkmark$ 

**Marjorie Rines** is the editor of Bird Sightings for Bird Observer and a part-time naturalist at Mass Audubon. For more information on the ArlingtonBirds Listserv and the Menotomy Bird Club, visit <a href="http://mrines.com/birds/Arlington/">http://mrines.com/birds/Arlington/</a>>.

## Driving Birds Away

#### Christopher Reed

[Editor's note: This article originally appeared in Harvard Magazine and is reprinted here with permission.]

If you were a bobolink thinking about breeding, you would avoid laying your eggs within three-quarters of a mile of either side of a busy four-lane highway that runs by Thoreau's Walden Pond in Concord, Massachusetts, or within a quarter mile of the through street connecting Lincoln to Concord. The 30,000-plus cars, trucks, and motorcycles speeding along Route 2 each weekday, and the 8,000 to 15,000 vehicles on the through street, make noise. That noise — not exhaust stink or the *sight* of speeding machines — apparently creates the broad avoidance zone on either side of the road, a wide swath of degraded habitat invisible to passing motorists, where certain birds don't go or don't breed.



GRAPH BY STEPHEN ANDERSON

Richard T.T. Forman and colleagues studied the impact of different-sized roads on the behavior of grassland birds in a 150-square-mile area along a 15-mile stretch of Route 2, just to the west-northwest of Cambridge, where Forman is professor of advanced environmental studies in the field of landscape ecology at the Harvard Graduate School of Design. This is a middle- to outer-suburban landscape with expanding residential areas in a landscape of forest, wetlands, ponds, streams, and open agricultural fields. Many species of birds that thrive in open grasslands are now rare in Massachusetts, and some species — the northern harrier and the horned lark — no longer breed in any of the 84 patches of grassland in Forman's study area. Using data that a team of birdwatchers gathered over five years, he concentrated on the bobolink and the eastern meadowlark. Though still present, these two species have been declining as breeders for decades — the same decades in which vehicular traffic has increased at a rate of 3 percent a year.

A quiet road traversed by no more than 8,000 vehicles a day had no effect on the presence or the regular breeding of his birds (see graph). But the greater traffic of a through street discouraged breeding, and the multilane highway drove the birds away entirely.

The edge species, our common backyard birds — the chickadee, let's say — aren't bothered by the racket of cars unless it is brutally loud; nor are egrets and herons, which one may spot in Cambridge intently fishing along the banks of the Charles River.

Forman doesn't know *why* noise bothers grassland birds, but he hypothesizes that it places them in added danger. "When there are eggs on the nest and a cat shows up, or a snake or a hawk, the adult male or female makes an alarm click or call, and the adults freeze and so are not seen," says Forman. "Those alarms are similarly critical when baby birds are fledged and on the ground. If the traffic noise is loud enough, the birds can't hear the alarms." Species with lower-pitched calls are hit the worst because traffic noise is low-pitched. (Work in progress reported to Forman suggests that where there is traffic noise, birds raise their voices and sing louder.)

Mitigating steps can lessen the roar: pave with a moresound-absorbing surface; redesign tires, engines, and exhaust systems; reduce the proportion of trucks; build low, shrub-covered berms by the roadside; sink the road.

Forman is a pioneering landscape ecologist who became interested in what has recently come to be called road ecology when he realized that, although people knew a lot about the effect of nature on roads (potholes, for instance), they were largely blind to the effect of roads on nature. He is one of two lead authors of a field-establishing book, *Road* 



Road ecologists such as Richard Forman advocate making passages for animals, over and under highways, that can help restore connectivity. This one has just been constructed under Route 2 near Walden Pond for the use of the fox, the coyote, the mink, the fisher, the raccoon, and other inconvenienced suburbanites. It is, says Forman, the first such underpass built in Massachusetts, the first of four planned, and one of very few in North America. Phtotograph courtesy of Richard Forman.

*Ecology: Science and Solutions*, written by 14 transportation specialists, hydrologists, and ecologists, half from academia and half from government. "It's a solution-oriented book," says Forman. "We tried to make it unavoidable by members of the transportation community."

The network of public roads in the United States is a huge structure: four million miles of it, carrying a quarter of a billion vehicles. When one considers the avoidance zones surrounding many roads, Forman points out, the road network has an environmental impact on 20 percent of the total land surface of the country. Roads also create barriers to the movement of creatures great and small, from bears to salamanders. This reduction of landscape connectivity is the second big impact of the road system on wildlife. We have superimposed on our waving fields of grain and purple mountains a grid of interlocking roads that connect points for people but subdivide nature. We have built what Forman characterizes as a "megazoo."

Richard Forman's e-mail address is rforman@gsd.harvard.edu. Copyright © 2005 Harvard Magazine Inc. Reprinted, with permission, from the May-June 2005 issue. All rights reserved.

#### FROM MASSWILDLIFE

#### MUTE SWAN POPULATION EXPANDING INLAND

MassWildlife recently compiled the results of the [August, 2005] mute swan survey in the Bay State as part of a biological project conducted every three years by eastern seaboard states and the US Fish & Wildlife Service. There were 1046 mute swans counted, consisting of 787 adults and 259 cygnets (young swans). A total of 100 broods (families) were counted, with an average of 2.6 cygnets per brood. The current survey shows a 10 percent increase in population from the last survey period and that the population is significantly expanding its range inland.

Mute swans are an exotic species first introduced to the eastern United States by collectors and estate owners in the early 1900s. Over time, some birds escaped and began nesting on their own. The first record of swans in Massachusetts occurred in 1922 with a flock of 11 birds sighted on Martha's Vineyard. The majority of swans were originally found in southeastern Massachusetts in coastal areas. Over the years the Mute swan population grew and in the past three decades expanded its numbers and range both north and west in the state to the Berkshires.

Of particular interest was information which showed a 10 percent decrease in the number of birds on the mainland coast, Cape Cod and the Islands. However, more mute swans continue to expand inland with a 44 percent increase in birds in inland areas from the 2002 survey. In their native European habitat, mute swans prefer inland areas. Swans are territorial birds and their decreasing numbers along the coast could be due to territoriality and habitat saturation by established swans; thus swans are moving inland to find more suitable habitat. Swan surveys first began in 1986 with a total count of 585 birds. Numbers of swans counted during surveys from 1986 – 1996 increased 57 percent. From 1996-2005, the number of birds counted during the survey increased by 14 percent.

## Bird Conservation and the Important Bird Area (IBA) Program: It's All About Habitat

Wayne R. Petersen

Editor's Note: As Important Bird Areas are rapidly becoming the currency for international bird conservation, Bird Observer is committed to the notion that our readers should be encouraged to become familiar with the IBA program. In 2006 we plan to feature several Massachusetts IBAs, their habitats, their special birds, and their conservation needs.

It has been well established that the single greatest global threat to bird populations, as well as biodiversity in general, is the destruction or degradation of habitat. Although it is true that competition from exotic and invasive species, as well as pollution of the environment, are significant factors, their impact pales when compared to the effect of habitat loss. While this should not come as a surprise to thoughtful readers, sometimes even the obvious proves to be elusive. In this case, however, it is clear that the mandate for effective habitat protection and preservation is imperative for bird conservation.

Not all areas are created equal when it comes to birds. Birders hardly need to be convinced that some places are apparently better for birds than others. Otherwise, why would thousands of birders annually trek to Parker River National Wildlife Refuge (i.e., Plum Island), visit Mount Auburn Cemetery in Cambridge practically every morning in May, or pilgrimage to Cape Cod to spend a day shorebirding at South Beach in Chatham or Monomoy National Wildlife Refuge at least once every summer? These are well-known regional birding hot spots — areas that apparently provide just what many birds seem to require in terms of habitat characteristics, geographical location, food resources, and protection. They represent locations that by any accounting are important to birds. But they are not the only areas in Massachusetts that are important to birds. There are tiny offshore islands that harbor hundreds of pairs of nesting cormorants, herons, or terns; ponds and reservoirs that serve as resting spots for flocks of migrating waterfowl every autumn; and wildlife management areas that support interesting assemblages of breeding birds. In addition, many of us birders probably know of a certain little woodlot, secluded pond, or overgrown pasture that we call our "patch," that little corner of the planet that we feel we know better than anyone else does. These examples all represent areas important to birds.

Building upon the reality of these various examples, BirdLife International (BirdLife), a British-based bird conservation organization with avian conservation partners all over the world, initiated a program in 1985 called the Important Bird Area (IBA) program. Using established habitat criteria, BirdLife set out to catalogue as many of the areas important to birds in the United Kingdom and Europe as possible. By 2000, BirdLife and its partner organizations had identified 3400 IBAs throughout Europe. In the mid-1990s BirdLife established a partnership with the National

Audubon Society (NAS), with the understanding that the NAS would coordinate a state-based IBA program. In 1995 NAS launched the Pennsylvania IBA program, followed by a similar effort in New York in 1996. Currently forty-six states have IBA programs in various stages of progress in the United States. Globally IBA programs exist in 130 countries, including twenty-one countries in the Americas.

Beginning in 2001 Mass Audubon, working in cooperation with the NAS, launched the IBA program in Massachusetts. By 2002, a technical committee comprised of knowledgeable birders, representatives from state and federal agencies, NGO organizations, and avian scientists successfully worked together with the birding community and the public to identify, nominate, and officially recognize seventy-nine IBAs throughout the Commonwealth. Using internationally recognized criteria established by BirdLife (with slight modifications to accommodate regional differences), Bay State IBA sites were selected "that provide essential habitat for one or more species of breeding, wintering, and/or migrating birds." In order for a site to qualify as an IBA, a site:

- Must regularly hold significant numbers of an endangered, threatened, vulnerable, or declining species;
- Must regularly hold significant numbers of species of high conservation priority in Massachusetts;
- Must be one where birds concentrate in significant numbers in the breeding season, in winter, or during migration;
- Must contain assemblages of species characteristic of a representative, rare, threatened, or unique habitat with the state or region;
- Must be important for long-term research and/or monitoring projects that contribute substantially to ornithology, bird conservation, and/or education.

Each designated IBA must also conform to various other qualifying attributes, but the essence of the criteria for each site is provided by the definitions above. A site that meets any one of the five criteria may qualify as an IBA, and some sites meet more than one.

It is important to point out that IBAs may be sites that are protected or unprotected, and may exist on public or private land. They may vary considerably in size (e.g., Bird Island vs. Mount Greylock Reservation), but they are usually discrete and distinguishable in character, habitat, or ornithological importance from surrounding areas. In general an IBA should exist as an actual or potential protected area or should have the potential to be specifically managed for bird conservation.

In addition to having value as a way to approach the protection of birds and their habitats in Massachusetts, the IBA program also offers birders a number of opportunities for becoming actively involved in local bird conservation efforts. Now that Mass Audubon has identified seventy-nine key IBAs, the real business of on-the-ground bird conservation can begin.



MAP OF CURRENT IBA SITES, FROM <HTTP://WWW.MASSAUDUBON.ORG/BIRDS\_&\_BEYOND/IBAS/SITES.PHP>.

For readers wishing to obtain more information about the IBA program, IBA site criteria, or other aspects of the Massachusetts IBA program, you are encouraged to visit: <a href="http://www.massaudubon.org/Birds\_&\_Beyond/IBAs/index.php">http://www.massaudubon.org/Birds\_&\_Beyond/IBAs/index.php</a>.

*Wayne Petersen* is Director of Mass Audubon's Massachusetts Important Bird Areas (IBA) Program. He can be contacted directly at iba@massaudubon.org.

## SAVE THE DATE 14th Massachusetts Birders Meeting

#### March 4, 2006

**Bentley College, Waltham** 

Please join us in March for a day of presentations, workshops and exhibits.

Our keynote address will be "Hot on the Trail of the Ivory-billed Woodpecker" by Tim Gallagher, editor-in-chief of *Living Bird* magazine and author of *The Grail Bird*. Other highlights of the day will include workshops, additional presentations, vendors, and lunch.

Information and registration forms are available online at <a href="http://www.massaudubon.org/">http://www.massaudubon.org/</a>> or send an e-mail to birdersmeeting@massaudubon.org.



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## Ten Tips For Maintaining Your Birding Partner

#### John Nelson

It's a common dilemma when you're a serious birder and your beloved spouse or partner is not: you think of travel in terms of birding. You dream of vacationing in the Patagonian outback (ahh...Long-tailed Meadowlark) or a Malaysian swamp (Cinnamon Bittern). Your partner, on the other hand, would rather golf (Canada Goose), tan and tango on a cruise ship (gulls, terns, and a few pelagics), or drink Pinot Grigio in Tuscany (the locals have shot down anything that flies). Compromises like separate or alternating vacations are unappealing. You want more birds but you also desire your partner's enthusiastic company.

At home in Massachusetts my wife Mary rarely goes birding. Locally she's content to enjoy our yard birds, but she is willing to go on birding vacations. Together we've looked for birds from the Everglades to the Pribilofs, from the slopes of Ecuador to the reefs of Australia. I'm a lucky man, I know; just ask my envious birding friends who don't have such accommodating traveling companions.

In fact I'm more than lucky, for Mary is more than an agreeable birding partner, she can really get into it sometimes, and like the spouses of many birders I know, she's got sharper eyes than mine. She's spotted all sorts of birds I would never have seen on my own: Vaux's Swifts high above us on the California coast, a skulking — noiseless — Noisy Pitta in an Australian rain forest. The words: "Honey, isn't this the bird you're looking for?" are music to my ears. She's found birds for other hard-core birders too. On a guided trip to Belize, we were in a group with two experienced birders, one of them a woman with a life list topping 6500. Mary confessed that life lists were alien to her; then we all spent a day in the field during which she often referred to the birds we saw as "little guys." I could see this woman thinking, "My god, what have I gotten myself into?" By trip's end however, Mary had found for us numerous distant raptors and secretive forest birds, and the woman confided that my wife was not only a delightful person but also a "useful" birding companion.

Yes, my spouse is very useful, and I want to keep it that way. I want to keep her happy on our birding vacations — for love, for marriage, and for finding as many birds as possible. Toward that end I've formulated a list of rules for maintaining her good spirits and birding focus. These rules have all been field-tested and refined through trial-and-error. They've served me well; my useful wife is still willing to go on birding vacations. I recommend these rules to other birders with nonbirding spouses or partners. Follow them and you may find birding bliss together. Ignore them at your own risk.

**RULE #1: Don't pressure her to study before a birding trip.** Yes, you can acquire a field guide for the area and encourage some browsing. You can stir up enthusiasm by pointing out a few of the flashier species you might see, but don't turn to a page of South American woodcreepers, or baffling *Phylloscopus* warblers, and ask her to contemplate the minutia of distinguishing field marks. Playing "Where's Waldo?"

with thirty look-alike species may not be her idea of pretravel fun. You're going on vacation: don't assign homework. It's *your* hobby, so it's your job to know what you're looking at in the field.

**RULE #2: Don't get hung up on birding terminology.** If she refers to almost all birds, short of condors and swans, as "pretty little things," you might gently point out, yet again, that such endearing phrases aren't very helpful in field identification. Tease her about birding bloopers, and you'll find yourself birding alone.

**RULE #3: There will be times when you feel you must offer corrections and explanations in the field. That's fine, just don't expect her to remember any of it:** neither the rarity of a bird you both saw two years ago nor the identity of a bird you both saw two minutes ago. "What's that?" she will ask about the eight-hundredth Tropical Kingbird of your trip. Suck it up.

**RULE #4: Birding is one thing; talking about birding is another.** Don't try to engage your partner in birding chat before the third cup of coffee in the morning or after the second glass of wine at night. Also, she may not accept a list of the next day's target birds as a suitable substitute for foreplay. A more stimulating alternative is gossip about the other birders in your group. Remember, your partner is a social animal who's been forced to spend days, perhaps weeks on end trapped in a jungle with fanatics. At the end of a long day in the field, nothing will provide more mutual entertainment than the chance to itemize all the ways in which these companions have whined, obsessed, bragged, malingered, badmouthed others behind their backs, hogged the scope or the food, and made birding fools of themselves.

RULE #5: Never try to arouse her interest in the identification of New World sparrows, Old World warblers, female ducks, gulls of any kind, *Empidonax* flycatchers, Xantus' vs. Craveri's murrelets, petrels, peeps, or any bird whose name begins with "ant." A Ross's Gull will not thrill her unless it's a really pink one. Refrain from lectures about the irrationality of her prejudice against whole families of birds. You're not the Lord of Reason; we all have our likes and dislikes. If she ever asks you about the molting patterns of three-year gulls, cherish the moment. It won't last.

**RULE #6: If your partner finds a rarity and you miss it, curb your outrage and envy.** Even if you have to identify a species you didn't actually see, even when she says it was "a boring little brown guy," don't succumb to the overwhelming urge to scream, "Why God? Why her and not me?" Eat your heart out in silence. Blame yourself. It's not her fault you lingered on that hilltop with those Spanish birders who found absolutely nothing, while she got bored and walked back to the blind where she saw the impossible-to-see Common Quail and flushed a Red-necked Nightjar. Show some generosity of spirit, and add the birds to her life list, even if she doesn't keep one.

**RULE #7: Never push your luck.** If your partner is gracious enough to suffer the heat and stench of the Brownsville, Texas, Dump just so you can see a life crow, don't ask her to hang around for another hour so you can sift through ten thousand gulls. If
your partner is loving enough to join you on birding vacations, don't expect her to go birding with you at home as well. Find somebody else to brave the greenheads of Plum Island with you in July.

**RULE #8: Give her some space (or enough is enough).** This rule is a logical extension of Rule #7. After hours in the field, your partner may lose intensity, become impatient with the antbird stakeout, and wander off to look at flowers. Do NOT say, "We're birding! Snap out of it!" Your partner may reach a point where an hour of liberation from birding just won't cut it. She might want a whole day off. She might suspect that Thailand offers other attractions: she may have read something in the brochures about temples, hill tribes, beaches, and Thai food. She might not mind some time alone without you or any other birder in sight. Tell her you'll miss her, wish her a good time, and for God's sake don't try a guilt trip or B.S. her about how much you'll miss her. She's not deserting you for life, and besides, you've got birds to look for.

**RULE #9: Fair is fair.** If your partner can feign enthusiasm for a Peg-billed Finch, you can stand to go shopping for a few hours. When you travel, allow a few days for other activities and give these activities your full attention. Do not look for, listen for, talk, think, or dream about birds without her expressed written consent. If you're wandering through the Louvre and she fails to comment on a goldfinch clenched in the fat fist of baby Jesus, keep your mouth shut. If you exit the museum and a Blue Rock Thrush flies by, observe it surreptitiously. A good birder — like a skilled voyeur — can watch without anyone knowing.

**RULE #10: If your partner feels like going birding, and you don't, go anyway.** This eventuality may seem unlikely. After all, *you're* the fanatic. Supposedly, she's just along for the ride. Nevertheless, there may come a day when you're feeling birded out, and your partner says, "Honey, aren't we going birding today?" The answer to this question is always "yes!" Her impulse to bird may be a passing whim, but a whim can be nurtured into habit and with luck into full-fledged addiction. Ten years ago, my wife would envision us on holiday, lounging romantically with margaritas on a tropical beach. Now she's puzzled if we travel somewhere without birding the local dump or waste treatment facility. In fact, she researches dump locations before a trip. I call that progress.

John Nelson has recently retired after more than three decades as an English professor at North Shore Community college. He now dedicates himself to writing fiction and going birding, not necessarily in that order. He has published a book on teaching, Cultivating Judgment: Teaching Critical Thinking Across the Curriculum, and volunteers as a property monitor for Essex County Greenbelt. He makes his home in Gloucester.

## FIELD NOTE

## Food for Later

### David Larson

Sometimes I lose things. I'm always forgetting my coffee in the microwave at work. I forget to pick things up at the store; I lose track of time; I still can't find that half-donut from two weeks ago. So I'm amazed by the reports of birds caching seeds or nuts only to unerringly retrieve them months later. Clark's Nutcrackers, for instance, routinely cache tens of thousands of food items and can recover them up to nine months later. (Tomback 1998).

I'm going to be watching carefully in the upcoming year, to see if one of our White-breasted Nuthatches ever retrieves the sunflower seeds he cached today. We had just put out our feeders for the season and, within hours, they were hopping with several species of birds. Two male nuthatches were feeding from the sunflower feeder. One took his seeds to a nearby tree and shelled and ate them; the other bird cached his seeds. We watched him land on the back of our house and probe around between and under the white cedar shingles. He was very picky, rejecting several locations before hammering in a seed. He cached more seeds with shells than without, but only just. He planted his hoard there, around the gutters, and even up by the chimney. If you look carefully in the accompanying photographs, you can see where he hammered an unshelled black oil sunflower seed into a seam in the lead flashing.



PHOTOGRAPH BY THE AUTHOR

Nuthatches scatterhoard individual food items throughout their territories in the fall and winter (Pravosudov and Grubb 1993). They usually choose crevices in tree bark, and males are more likely to use tree trunks, while females choose limbs and other locations. While I can see the cedar shingles as a tree trunk-equivalent, the gutter and chimney seem a bit of a stretch.

If this nuthatch's memory is no better than mine, perhaps I'll have sunflowers growing on my house next summer.  $\checkmark$ 

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Pravosudov, V. V. and T. C. Grubb, Jr. 1993. White-breasted Nuthatch (*Sitta carolinensis*). In *The Birds of North America*, No. 54 (A. Poole and F. Gill, Eds.). Philadelphia: The Birds of North America, Inc.



WHITE-BREASTED NUTHATCH BY WILLIAM E. DAVIS , JR.

### FROM MASSWILDLIFE

#### 2005 PIPING PLOVER NUMBERS DOWN

MassWildlife has compiled figures for piping plovers with data gathered through the cooperation of nearly 70 biologists and beach managers from state and federal agencies, local municipalities, and private conservation groups. A total of 475 pairs of Piping Plovers nested at 109 sites on Massachusetts coastal beaches. This represents a 3 percent decline from last year's 490 pairs. Dr. Scott Melvin, Senior Zoologist for MassWildlife, noted that the average number of chicks fledged per pair was only 1.0, below the minimum reproductive success needed to sustain Massachusetts' breeding population of Piping Plovers. "This year's low reproductive success is due in part to two spring coastal storms that destroyed many nests," said Melvin. He also said that loss of eggs and unfledged chicks to a variety of avian and mammalian predators continues to be a primary factor limiting productivity. Beach management practices to safeguard beach-nesting birds from disturbance, mortality, and habitat degradation still remain effective conservation tools. Piping plovers are classified as "Threatened" on both the federal and state endangered species lists.

## ABOUT BOOKS

## Tools

### Mark Lynch

**A Field Guide To Sprawl.** Dolores Hayden. 2004. W.W. Norton & Company. New York.

**Birding Cape Cod.** Cape Cod Bird Club and the Massachusetts Audubon Society. 2005. On Cape Publications, Inc. Yarmouthport, MA.

**Identify Yourself: The 50 Most Common Birding Identification Challenges.** Bill Thompson III and the editors of *Bird Watcher's Digest*. 2005. Houghton Mifflin Company. Boston, MA.

Handbook Of The Birds Of The World: Volume 10 Cuckoo-Shrikes To Thrushes. Josep del Hoyo, Andrew Elliott, and David Christie. 2005. Lynx Edicions. Barcelona, Spain.

**Shorebirds Of North America: The Photographic Guide.** Dennis Paulson. 2005. Princeton, University Press. Princeton, NJ.

**Bird Guide: The Most Complete Field Guide To The Birds Of Britain And Europe.** Lars Svensson and Peter Grant. 1999. HarperCollins Publishers. London, United Kingdom.

So many bird books! So little time — and money! Although most birders are also rabid bibliophiles, it is tough to keep up with all that's published. Bird books for me typically fall into one of two broad types. There are the books I really look forward to reading, and then there are the books I feel I should own regardless. I have to confess that 90% of the bird titles I own are not books I would curl up with in a big comfy chair and savor, not in the same way I enjoyed reading, say, the new biography of John James Audubon by Richard Rhodes. Most books I buy about birds are not written nearly as well as that one, and they have no pretensions at literary greatness. Most of the bird books I buy are more like tools to me: devices to help me do something better: specifically, to better identify and understand birds. They may not read like Proust or Pynchon but they get the job done.

With that in mind I've come up with a few random issues or problems that different birders might have to contend with and some recently published tools that can help address them.

**"I am a beginner birder and I want to be a better one."** Solution: *Identify Yourself* by Bill Thompson III. Many new birders immediately feel the pressure to be an expert as quickly as possible, and therein lies trouble. Bill Thompson III is the Editor of *Bird Watcher's Digest*. He has an easygoing, conversational writing style that makes this a perfect book for



neophyte birders wishing to ditch that epithet. This book takes the beginner beyond the cut-and-dried presentation of a field guide by dealing with many common field identification problems at length. These include many well-known and documented challenges such as: female ducks, hawks in flight, the basics of aging and identifying gulls, and confusing spring and fall warblers. Other chapters address problems less commonly discussed: like telling cuckoo species apart in flight, ID'ing female blackbirds, and separating Black-capped and Carolina chickadees.

Our goal is to provide beginning and intermediate-level bird watchers with a clear and logical path by which to navigate each identification challenge. (p. 15).

Although Thompson likes a corny joke and bad pun (just look at the book's title), he is always on message: encouraging the beginner to take time to really look at the bird and thereby slowly and steadily improve field identification skills. This guide is illustrated by Julie Zickefoose, an artist well known to long-time *Bird Observer* readers. In this book she focuses on illustrating similar species, showing the basic differences discussed in the text. However, *Identify Yourself* could have used more of Zickefoose's work to illustrate many identification points that are now only described in the text. Her paintings are clear and simple, capturing the essence of each species, although I was far less impressed with her few illustrations of *Calidris* sandpipers — which remain many an artist's downfall.

*Identify Yourself* is crammed with useful birding tips and information for beginning and medium-level birders. To any advanced birders who may turn their nose up at a book perceived as beneath their skill level, I can only say, "Get over yourself! We all find ourselves at some point not sure of what we are looking at. Even you."

#### "How do I tell a Least Sandpiper from a Long-toed Stint?"

Solution: *Shorebirds of North America* by Dennis Paulson (in part). I say "in part" because no single portable book will ever contain all you need to know about identifying shorebirds. That book has yet to be written, but *Shorebirds of North America* is a good step in that direction. It's an improvement over the earlier *Facts on File Field Guide to North Atlantic Shorebirds* by Richard Chandler, which became a minor classic for shorebird mavens when it was published in 1989. The photographs are of far better quality in Paulson's book, and his text contains many more identification details and tips for telling similar species apart. Paulson is probably best known to New England birders for his



Shorebirds of the Pacific Northwest, a voluminous and authoritative identification guide that uses both photographs and illustrations of species. Shorebirds of North America boils down the extensive plumage details of Shorebirds of the Pacific Northwest to the essentials. Even so, it still contains more plumage details than you will find in any general field guide. A suite of fine photographs illustrating a variety of plumages accompanies each written species account. In addition to the expected

species, the book includes and gives full treatment to exotics, some with only a single North American record like Slender-billed Curlew. The debate over photographs vs. illustrations aside (I like to look at both), this book is the best photographic shorebird guide to the species of our area currently in print. The sturdy paperback edition is almost compact enough to consider it a "field guide." *Shorebirds of North America* is certainly a book to keep in the car during shorebird season.

### "So, where can I go to see some of those shorebirds mentioned above?"

Solution: *Birding Cape Cod* by the Cape Cod Bird Club and Massachusetts Audubon Society.

This is the revised and updated version of the wonderful "where to go" guide that was originally published in 1990 but has been out of print for years. Much of this edition contains the same locations and information as the original. I am happy to report that this means *Birding Cape Cod* still includes Janet Heywood's sublimely clear and easy-to-understand maps, as well a smattering of delightful illustrations by Barry van Dusen. That said, Cape Cod is an area under constant attack from the relentless onslaught of developers as well as numerous natural forces, so minor

changes in the status of certain locations was inevitable. Also included now is a 317species checklist noting breeding status and abundance on a month-by-month basis. If you want to bird the Cape, this slim volume will get you to where you need to go and tell you what to expect when you get there. It is always in the back of my car. This book is a fine example of a locally written and published regional guide and should be in the possession of anyone who has ever birded the windblown and wave-ravaged coast of the long arm of the Cape.

### "Is that a Fieldfare out there among that big flock of robins?"

Solution: Bird Guide: The Most Complete Field Guide To The Birds Of Britian And Europe.

North America gets a surprising number and diversity of European birds annually, and it is always handy to have a decent European field guide in your arsenal for that special moment when someone calls, "Garganey!" Although many North American guides cover at least the most regular European vagrants, you should also own a guide from where those species are seen regularly for additional information on field marks and behavior clues. There are many European guides to choose from, all of them light-years ahead of the original version of the European guide by Peterson, Mountfort,

and Hollum. (Oddly, I own a very old Dutch-language version of that guide, and not so oddly, I don't use it much). I am still partial to Lars Jonsson's *Birds of Europe* because I like his large painterly artwork that features birds in positions not typically found in most field guides. I also refer to Beaman and Madge's more scholarly *Handbook* often, though its large size prevents it from being used in the field with any ease. This brings us to the handy Collins *Bird Guide*. The paperback is perfect to keep in the car and bring out into the field at that next stakeout of a Red-footed Falcon or





Eurasian Kestrel. The illustrations are crisp, clean, and show all the pertinent field marks. The text has a wealth of information on identification, almost too much for a typical field guide. Some folks have recommended buying the large-type version because everything is expanded and easier to read, even the illustrations. But I find the paperback fits the bill perfectly.

# "What exactly are the differences between Prigogine's and Falkenstein's Greenbul?"

Solution: *Handbook of the Birds of the World Volume 10.* On a cold, gray Massachusetts day, when you're counting starlings flying into an evening roost for your local CBC, it may seem hard to believe that somewhere in the world people can have such a concern...but they do, and this is one of the few books that can answer that question as well as about a googolplex more. This "handbook" is nothing less than the most ambitious natural history publishing project ever. Its goal is to illustrate and give all the particulars, including range maps, for every single species of bird in the world. But this series is much, much more



# "Never mind Prigogine's Greenbul, what happened to my favorite local birding spot?"

Solution: *A Field Guide To Sprawl* by Dolores Hayden. The phenomenon of suburban sprawl is why we are losing so much wild habitat every year in southern New England. It is one of the leading causes for the steady decrease in bird variety and the numbers of so many species. A housing development here, a shopping mall there, and before you know it, what was once a great place to bird is now the parking lot of a Bob's Superstore. Conservation-minded birders often feel



HANDBOOK OF THE BIRDS OF THE WORLD

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Volume 10

overwhelmed by the pace of this development, but Dolores Hayden, architectural critic and poet, has written this simple guide to help us grasp the big picture of what exactly is going on. Using the outstanding aerial photography of Jim Wark, Hayden shows us the effects of what happens when short-term greed meets a lack of regional planning.

It's all alphabetically categorized using developers' own terminology: from "Alligator," a sprawling development with far too many subdivisions, to an explosively growing "Zoomburb" like Sun City, Arizona. Hayden's goal is to rattle us out of our complacency in accepting the ugly as inevitable and to provoke us into taking an active part in the discussion of how our larger living spaces will be created, how they will look and function, and how much open space will be left for our children and grandchildren. The alternative to reading this book may ultimately be to have nothing to look at but starlings, Rock Pigeons, and House Sparrows. (Nota bene: if you want to better understand how sprawl came to be our modus operandi, read *Twentieth-Century Sprawl* by Owen Gutfreund).

Stay tuned: In the next issue of *Bird Observer*, I will review what I consider to be THE most essential informational birding tool for Massachusetts birders to own. And it's not exactly a book!

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## **BIRD SIGHTINGS**

### July/August 2005

#### Seth Kellogg, Robert Stymeist, and Marjorie Rines

July had near-normal temperatures, with an average of  $73.3^{\circ}$  in Boston,  $0.6^{\circ}$  below average. The high for the month was 94° on July 26 and 27, and there were an additional five days with temperatures reaching 90° or higher on July 10, 11, 19, 20, and 22. Oppressive humidity levels, averaging 70 percent or higher, accompanied these warm days. The low for the month was 56° on July 8 and 9. Two low daily maximum temperature records were set. The peak temperature for July 7 reached only 63°, tying with 1935, and the 61° on July 8 was well below the 68° of 1946. Rainfall totaled 3.37 inches in Boston, just 0.31" above average. Measurable amounts fell on just five days, avoiding all weekend days except Saturday, July 9. The Blue Hill Observatory in Milton recorded 61 percent of possible sunshine.

August was hot, wet, and sunny. The temperature averaged  $74.3^{\circ}$ ,  $2.0^{\circ}$  above normal for Boston. This August tied for the ninth hottest in 134 years, though no records were broken. Just three days recorded temperatures above 90°. The high was 97° on August 5, and the low of 60° was recorded on August 16 and 25. Precipitation totaled 2.88 inches, about a half inch below average, with twelve days of measurable rain. Thunder was heard on seven days, four more than normal. Just south of Boston, very heavy thunderstorms on July 14 produced locally severe winds which downed many trees, along with damaging lightning strikes and flooding rains. In Hingham, for example, 5.35 inches of rain fell in just three hours, a new daily record! *R. Stymeist* 

#### WATERFOWL THROUGH ALCIDS

In 2004 the American Ornithologists' Union split Canada Goose (*Branta canadensis*) into two species: Canada Goose (*B. canadensis*) and Cackling Goose (*B. hutchinsii*). Because birders often do not report subspecies, the occurrence of this new species in Massachusetts is not well known. An individual identified as a "Richardson's" **Cackling Goose** was discovered at Great Meadows NMW in early August and lingered through the end of the month.

On July 12 a probable **albatross** of unknown species was reported from Lynn Beach, and on July 26 another report came from Nantucket. Although no details were submitted by either observer, the two reports are intriguing, since the very few reports of albatrosses in the northeast United States occasionally come in clusters, suggesting either the same individual being reported multiple times, or mini "invasions" of the same species. Only Yellow-nosed and Black-browed Albatrosses have been confirmed in Massachusetts.

Tubenoses were well reported this summer, including good numbers seen from shore. An August 27 pelagic trip to Hydrographer and Veatch's canyons provided a bonanza of pelagic sightings, including a **Band-rumped Storm-Petrel**, which was unfortunately only identified after the trip as a photographer was reviewing his digital images. There are only three previous records of this species, all from this same area, the most recent one being on the same pelagic trip in 2004. Other excellent sightings from the trip included three **Audubon's Shearwaters**, four **Long-tailed Jaegers**, and a "seemingly small whitish Sulid with blackish primaries and secondaries over" (Rick Heil) which escaped identification.

A **Magnificent Frigatebird** was seen and photographed on July 22 at South Beach in Chatham (and reported the same day by another party from nearby North Monomoy). With sightings of other frigatebird species recorded in North America, the Massachusetts Avian Records Committee (MARC) has looked particularly carefully at submissions of any frigatebird; they reviewed both description and photographs presented in this instance and were convinced that this sighting was of a Magnificent.

Turkey Vultures typically nest in isolated locations such as crevices in rocks or in a hollow log or tree, but a pair in Williamstown chose a two-story barn, and the homeowner described "two young turkey vultures running around inside the barn hissing at anyone who comes near."

**Common Moorhens** have been anything but common in recent years, but reports of individuals from four locations were encouraging. A report of **Sandhill Crane** on August 18 at the Daniel Webster Wildlife Sanctuary is intriguing now that this species has been confirmed breeding in Maine.

South Beach in Chatham takes the shorebird prize this summer, with a **Wilson's Plover** there from July 10 through the end of August, *two* **Little Stints** at the end of July, and a **Curlew Sandpiper** at the end of August.

On August 24 Rick Heil reported, "Currently large schools of bluefish scattered all along immediate coastal North Shore are driving 'baitfish,' perhaps herring or sand eels, to the surface. As a result tremendous flocks of terns, and attendant jaegers, have rapidly appeared in these waters to exploit this ready food supply." Associated with this were high counts of Parasitic Jaegers, Roseate, Common, and Black terns.

**Franklin's Gull** is a rare visitor to Massachusetts, and the two reports in August are exceptional. These sightings from Chatham and Buzzard's Bay are unlikely to represent the same individual. The August 20 report of a **Sabine's Gull** was noteworthy, particularly since this rare migrant is most typically reported later in the fall. **Caspian Terns** are seen regularly in fall, but summer reports are decidedly uncommon. However, an observer reporting one from Chatham gave a careful description which seemed to rule out the more probable Royal Tern. **Sandwich Terns** reported from Chatham and Edgartown were unusual finds.

Summer Razorbills are rare, but a single bird spent the summer on a tidal pond on Martha's Vineyard. In 2001 three Razorbills summered in a pond on the other end of the Island.

M. Rines

Brant Green-winged Teal	
8/13 Duxbury B. 2 R. Bowes thr P.I. 21-55	R. Heil
"Richardson's" Cackling Goose 7/9 Amherst 2	H. Allen
8/6-31 GMNWR 1 ph D. Scott + v.o. 7/14-8/31 GMNWR 4-8	V.O.
Wood Duck 8/7, 26 N. Monomoy 3, 9 Niki	ula, Silverstein
7/4 Wakefield 39 P. + F. Vale 8/13 Duxbury B. 2	R. Bowes
7/7 GMNWR 54 USFWS 8/20 Acoaxet 2	M. Lynch#
8/13 Stockbridge 62 M. Lynch# 8/22 Magnolia 6	Ř. Heil
8/22 Magnolia 42 R. Heil 8/24 P'town 4	B. Nikula
8/24 Longmeadow 150 R. Titus 8/24 S. Monomoy 40	MAS (S. Ellis)
8/26 Agawam 35 S. Kellogg Ring-necked Duck	
	MAS (S. Ellis)
thr P.I. 138 max 7/12 v.o. Greater Scaup	
American Wigeon 8/9, 16 P.I. 1 m, 4	R. Heil#
7/30, 8/9 P.I. 1 m R. Heil Common Eider	
Blue-winged Teal 7/10, 8/7 Duxbury B. 160, 70	R. Bowes
thr P.I. 5-6 v.o. 7/22 Chatham (S.B.) 19	R. Merrill
8/20 GMNWR 1 S. Perkins# 7/23, 8/20 Westport 19, 44	M. Lynch#
8/20 Acoaxet 9 M. Lynch# 8/6 Stellwagen 43	M. Lynch#
8/22 Hadley 14 J. Smith 8/9 Gloucester 60+	R. Heil#
8/22-26 Agawam 1 S. Kellogg 8/13 P'town H. 70+	B. Nikula
Northern Shoveler Surf Scoter	
8/24 S. Monomoy 2 MAS (S. Ellis) 7/4 P.I. 1 m	T. Wetmore
Northern Pintail 7/10, 8/1 Chatham (S.B.) 1, 5 T	Frimble, Nikula
8/10 Northampton 1 J. Smith 7/18 Nantucket 7	E. Ray
8/24 S. Monomoy 2 MAS (S. Ellis) 7/23 P'town 1 8/27 P.I. 1 f M. Lynch# White-winged Scoter	P. Flood
8/27 P.I. 1 f M. Lynch# White-winged Scoter	
thr Chatham (S.B.) 7+	v.o.

8/23         P.I.         4         K. Heil         Social Shearwater $1.5$ $2.5$ $1.5$ $2.5$ $1.5$
8/24         Rockport (A.P.)         4         R. Heil         7/9, 8/27         Stellwagen         16, 20         Emmons, Masterson           7/18         Nantucket         1         E. Ray         7/11, 8/12         Pitown         50, 8         Carlson, Nikula           7/18         Chatham (S.B.)         7, 8         Manucket         500         B. Perkins#           7/11, 8/12         Pitown         50, 200         B. Perkins#         1         Stellwagen         11         Stellwagen         12         Nethins#           7/14         Northerganser         7/14         Northerganser         7/13         Nantucket         12         Nethins#         13         Stellwagen         12,20         N. Klauf#         14 <td< td=""></td<>
Black Scoter         7/11         N/12         9/10         7/11         N/11
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7/2Falmouth $23$ R. FarrellSulid species $7/28, 8/16$ P.I.4, 16R. Heil $8/14$ Plymouth B.7C. Dalton $8/18$ Chatham (S.B.)4C. DaltonDouble-crested Cormorant $7/12$ New Salem31C. Buelow $8/24$ S. Monomoy10MAS (S. Ellis) $7/12$ New Salem31C. Buelow $8/24$ S. Monomoy10MAS (S. Ellis) $7/30$ S. Monomoy200B. NikulaPied-billed Grebe $8/6$ Stellwagen $306$ M. Lynch# $7/10, 8/27$ P.I.1McGrath, Lynch $8/13$ P'town H. $175$ B. Nikula $8/10$ Northampton1J. Smith $8/20$ Westport $355$ M. Lynch# $8/29$ Scituate1D. Furbish $8/30$ Nahant/Lynn $400$ R. Heil $8/7$ Chilmark1M. Pelikan $7/29$ Rockport islands $2$ immJ. Berry# $7/12$ Lynn B.1 "probable"J. Quigley $7/22$ N. Monomoy1 subadE. Banks $7/12$ Lynn B.1 "probable"J. Wallius $7/22$ N. Monomoy1 subadE. Banks $7/21, 23$ Chatham (S.B.)1, 2 Merrill, Wheelock $7/4$ Moran WMAM. Lynch# $7/22$ Nantucket1P. Flood $7/10$ Quabog IBA1M. Lynch#
7/28, 8/16P.I.4, 16R. Heil $8/27$ Nantucket Shoals1 adBBC (R. Heil) $8/14$ Plymouth B.7C. DaltonDouble-crested Cormorant $7/12$ New Salem31C. Buelow $8/18$ Chatham (S.B.)4C. Dalton $7/12$ New Salem31C. Buelow $8/24$ S. Monomoy10MAS (S. Ellis) $7/30$ S. Monomoy200B. NikulaPied-billed Grebe8/6Stellwagen306M. Lynch# $7/30$ GMNWR1J. Hills $8/12$ DWWS420D. Furbish $8/10$ Northampton1J. Smith $8/20$ Westport355M. Lynch# $8/29$ Scituate1D. Furbish $8/30$ Nahant/Lynn400R. HeilHorned Grebe7/20Rockport islands2 immJ. Berry# $7/12$ Lynn B.1 "probable"J. Quigley $7/22$ Chatham (S.B.) 1 ph G. Hirth, R. Merrill $7/17$ Tillies Bank1J. Wallius $7/2-17$ P.I.1v.o. $7/21$ Athatrocket1D. Southerland $7/2-17$ P.I.1v.o. $7/22$ NahonrowyI subadE. Banks $7/2-17$ P.I.1v.o. $7/22$ Natucket1P. Flood $7/4$ Moran WMA1M. Lynch#
8/14Plymouth B.7C. DaltonDouble-crested Cormorant8/18Chatham (S.B.)4C. Dalton7/12New Salem31C. Buelow8/24S. Monomoy10MAS (S. Ellis)7/30S. Monomoy200B. NikulaPied-billed Grebe8/6Stellwagen306M. Lynch#7/3GMNWR1J. Hills8/12DWWS420D. Furbish7/10, 8/27P.I.1McGrath, Lynch8/13P'town H.175B. Nikula8/26S. Monomoy1R. Merrill8/28Monomoy1500+B. Nikula8/29Scituate1D. Furbish8/30Nahant/Lynn400R. Heil7/30-/31Gloucester1R. Heil7/29Rockport islands2 immJ. Berry#8/7Chilmark1D. Southerland7/22Chatham (S.B.)1, 2 Merrill,Magnificent Frigatebird (details submitted) *7/12Lynn B.1 "probable"J. Quigley7/22N. Monomoy1 subadE. Banks7/17Tillies Bank1J. Wallius7/2-17P.I.1v.o.7/21, 23Chatham (S.B.)1, 2 Merrill, Wheelock7/4Moran WMA1M. Lynch#7/10Quabog IBA1P. Flood7/10Quabog IBA1M. Lynch#
8/18Chatham (S.B.)4C. Dalton $7/12$ New Salem $31$ C. Buelow $8/24$ S. Monomoy10MAS (S. Ellis) $7/30$ S. Monomoy $200$ B. NikulaPied-billed Grebe $8/6$ Stellwagen $306$ M. Lynch# $7/3$ GMNWR1J. Hills $8/12$ DWWS $420$ D. Furbish $7/10, 8/27$ P.I.1McGrath, Lynch $8/13$ P'town H. $175$ B. Nikula $8/10$ Northampton1J. Smith $8/20$ Westport $355$ M. Lynch# $8/26$ S. Monomoy1R. Merrill $8/28$ Monomoy $1500+$ B. Nikula $8/29$ Scituate1D. Furbish $8/30$ Nahant/Lynn $400$ R. HeilHorned GrebeGreat Cormorant $7/29$ Rockport islands $2$ immJ. Berry# $7/12$ Lynn B.1"probable"J. Quigley $7/22$ Nantucket1D. Southerland $7/12$ Lynn B.1"probable"J. Wallius $7/22$ N. Monomoy1 subadE. BanksNorthern Fulmar1J. Wallius $7/2$ Amherst1D. Minnear $7/21, 23$ Chatham (S.B.)1, 2 Merrill, Wheelock $7/4$ Moran WMA1M. Lynch# $8/22$ Nantucket1P. Flood $7/10$ Quabog IBA1M. Lynch#
8/24S. Monomoy10MAS (S. Ellis)7/30S. Monomoy200B. NikulaPied-billed Grebe8/6Stellwagen306M. Lynch#7/3GMNWR1J. Hills8/12DWWS420D. Furbish7/10, 8/27P.I.1McGrath, Lynch8/13P'town H.175B. Nikula8/10Northampton1J. Smith8/20Westport355M. Lynch#8/29Scituate1D. Furbish8/30Nahant/Lynn400R. Heil8/7Chilmark1R. Heil7/29Rockport islands2 immJ. Berry#7/12Lynn B.1 "probable"J. Quigley7/22Chatham (S.B.) 1 ph G. Hirth, R. Merrill7/17Tillies Bank1J. Wallius7/2-17P.I.1v.o.7/21, 23Chatham (S.B.)1, 2 Merrill, Wheelock7/2Amherst1D. Minnear7/12, 22Nantucket1P. Flood7/10Quabog IBA1M. Lynch#
Pied-billed Grebe8/6Stellwagen306M. Lynch#7/3GMNWR1J. Hills8/12DWWS420D. Furbish7/10, 8/27P.I.1McGrath, Lynch8/13P'town H.175B. Nikula8/10Northampton1J. Smith8/20Westport355M. Lynch#8/26S. Monomoy1R. Merrill8/20Westport355M. Lynch#8/29Scituate1D. Furbish8/30Nahant/Lynn400R. HeilHorned GrebeGreat Cormorant7/29Rockport islands2 immJ. Berry#7/12Lynn B.1 "probable"J. QuigleyMagnificent Frigatebird (details submitted) *7/22Chatham (S.B.) 1 ph G. Hirth, R. Merrill7/17Tillies Bank1J. Wallius7/2-17P.I.1v.o.7/21Athamer1P. Flood7/4Moran WMAM. Lynch#7/22Nahucket1P. Flood7/10Quabog IBAM. Lynch#
7/3GMNWR1J. Hills $8/12$ DWWS $420$ D. Furbish $7/10, 8/27$ P.I.1McGrath, Lynch $8/13$ Ptown H. $175$ B. Nikula $8/10$ Northampton1J. Smith $8/20$ Westport $355$ M. Lynch# $8/26$ S. Monomoy1R. Merrill $8/28$ Monomoy $1500+$ B. Nikula $8/29$ Scituate1D. Furbish $8/30$ Nahant/Lynn $400$ R. HeilHorned GrebeGreat Cormorant $7/29$ Rockport islands $2$ immJ. Berry# $7/12$ Lynn B.1mprobable"J. Quigley $7/22$ Chatham (S.B.)1, Berrill $7/17$ Tillies Bank1J. Wallius $7/22$ N. Monomoy1 subadE. Banks $7/21, 23$ Chatham (S.B.)1, 2 Merrill, Wheelock $7/2$ Amherst1D. Minnear $7/22$ Nantucket1P. Flood $7/10$ Quabog IBA1M. Lynch#
7/10, 8/27P.I.1McGrath, Lynch8/13P'town H.175B. Nikula8/10Northampton1J. Smith8/20Westport355M. Lynch#8/26S. Monomoy1R. Merrill8/28Monomoy1500+B. Nikula8/29Scituate1D. Furbish8/30Nahant/Lynn400R. Heil7/30-/31Gloucester1R. HeilGreat Cormorant7/29Rockport islands2 immJ. Berry#8/7Chilmark1M. Pelikan7/22Chatham (S.B.)1 ph G. Hirth, R. Merrill7/12Lynn B.1 "probable"J. QuigleyMagnificent Frigatebird (no details) *7/22Chatham (S.B.)1 phessate7/17Tillies Bank1J. Wallius7/2-17P.I.1v.o.7/21YaChatham (S.B.)1, 2 Merrill, Wheelock7/4Moran WMAM. Lynch#7/22Nantucket1P. Flood7/10Quabog IBAM. Lynch#
8/10Northampton1J. Smith8/20Westport355M. Lynch#8/26S. Monomoy1R. Merrill8/28Monomoy1500+B. Nikula8/29Scituate1D. Furbish8/30Nahant/Lynn400R. HeilHorned GrebeGreat CormorantGreat Cormorant7/29Rockport islands2 immJ. Berry#7/30-/31Gloucester1R. Heil7/29Rockport islands2 immJ. Berry#8/7Chilmark1M. Pelikan7/22Chatham (S.B.) 1 phG. Hirth, R. Merrill7/12Lynn B.1 "probable"J. QuigleyMagnificent Frigatebird (no details) *7/22N. Monomoy1 subad7/17Tillies Bank1J. Wallius7/2-17P.I.1v.o.7/21, 23Chatham (S.B.)1, 2 Merrill, Wheelock7/4Moran WMAM. Lynch#8/20Xantucket1P. Flood7/10Quabog IBAM. Lynch#
8/26S. Monomoy1R. Merrill8/28Monomoy1500+B. Nikula8/29Scituate1D. Furbish8/30Nahant/Lynn400R. HeilHorned GrebeGreat Cormorant7/30-/31Gloucester1R. Heil7/29Rockport islands2 immJ. Berry#8/7Chilmark1M. Pelikan7/29Rockport islands2 immJ. Berry#7/12Lynn B.1 "probable"J. Quigley7/22Chatham (S.B.)1 photomory1 subadE. Banks7/17Tillies Bank1J. Wallius7/22N. Monomoy1 subadE. Banks7/21, 23Chatham (S.B.)1, 2 Merrill, Wheelock7/2Amherst1D. Minnear7/10Quabog IBA1M. Lynch#
8/29       Scituate       1       D. Furbish       8/30       Nahant/Lynn       400       R. Heil         Horned Grebe       Great Cormorant       Great Cormorant       Great Cormorant       J. Berry#         7/30-/31       Gloucester       1       R. Heil       Great Cormorant       7/29       Rockport islands       2 imm       J. Berry#         8/7       Chilmark       1       M. Pelikan       Magnificent Frigatebird (details submitted) *         7/12       Lynn B.       1 "probable"       J. Quigley       7/22       Chatham (S.B.) 1 ph       G. Hirth, R. Merrill         7/12       Lynn B.       1 "probable"       J. Quigley       7/22       N. Monomoy       1 subad       E. Banks         7/17       Tillies Bank       1       J. Wallius       7/2-17       P.I.       1       v.o.         7/21, 23       Chatham (S.B.)       1, 2 Merrill, Wheelock       7/4       Moran WMA       M. Lynch#         8/22       Vantucket       1       P. Flood       7/10       Quabog IBA       M. Lynch#
Horned GrebeGreat Cormorant7/30-/31Gloucester1R. Heil8/7Chilmark1M. PelikanAlbatross species (no details) *J. Quigley7/12Lynn B.1 "probable"J. Quigley7/26Nantucket1D. SoutherlandNorthern Fulmar7/17Tillies Bank1J. Wallius7/17Tillies Bank1J. Wallius7/12Chatham (S.B.)1, 2 Merrill, Wheelock7/2American Bittern7/17Tillies Bank1J. Wallius7/2-17P.I.17/21, 23Chatham (S.B.)1, 2 Merrill, Wheelock7/4Moran WMAM. Lynch#8/22Nantucket1P. Flood7/10Quabog IBAM. Lynch#
8/7       Chilmark       1       M. Pelikan       Magnificent Frigatebird (details submitted) *         Albatross species (no details) *       7/2       Chilmark       1       M. Pelikan         7/12       Lynn B.       1 "probable"       J. Quigley       7/22       Chatham (S.B.) 1 ph G. Hirth, R. Merrill         7/12       Lynn B.       1 "probable"       J. Quigley       7/22       N. Monomoy       1 subad       E. Banks         Northern Fulmar       7/17       Tillies Bank       1       J. Wallius       7/2-17       P.I.       1       v.o.         Cory's Shearwater       7/21, 23       Chatham (S.B.)       1, 2 Merrill, Wheelock       7/4       Moran WMA       M. Lynch#         8/22       Nantucket       1       P. Flood       7/10       Quabog IBA       M. Lynch#
Albatross species (no details) *     7/22     Chatham (S.B.) 1 ph G. Hirth, R. Merrill       7/12     Lynn B.     1 "probable"     J. Quigley       7/16     Nantucket     1     D. Southerland       Northern Fulmar     7/17     Tillies Bank     1     J. Wallius       7/17     Tillies Bank     1     J. Wallius     7/2-17     P.I.     1     v.o.       7/12, 1, 23     Chatham (S.B.)     1, 2 Merrill, Wheelock     7/4     Moran WMA     1     M. Lynch#       8/22     Nantucket     1     P. Flood     7/10     Quabog IBA     M. Lynch#
Albatross species (no details) *     7/22     Chatham (S.B.) 1 ph G. Hirth, R. Merrill       7/12     Lynn B.     1 "probable"     J. Quigley       7/16     Nantucket     1     D. Southerland       Northern Fulmar     7/17     Tillies Bank     1     J. Wallius       7/17     Tillies Bank     1     J. Wallius     7/2-17     P.I.     1     v.o.       7/12, 1, 23     Chatham (S.B.)     1, 2 Merrill, Wheelock     7/4     Moran WMA     1     M. Lynch#       8/22     Nantucket     1     P. Flood     7/10     Quabog IBA     M. Lynch#
7/26Nantucket1D. Southerland7/22N. Monomoy1 subadE. BanksNorthern FulmarAmerican Bittern7/17Tillies Bank1J. Wallius7/2-17P.I.1v.o.Cory's Shearwater7/2Amherst1D. Minnear7/21, 23Chatham (S.B.)1, 2 Merrill, Wheelock7/4Moran WMA1M. Lynch#8/22Nantucket1P. Flood7/10Quabog IBA1M. Lynch#
Northern Fulmar     American Bittern       7/17     Tillies Bank     1     J. Wallius     7/2-17     P.I.     1     v.o.       Cory's Shearwater     7/2     Amherst     1     D. Minnear       7/21, 23     Chatham (S.B.)     1, 2 Merrill, Wheelock     7/4     Moran WMA     1     M. Lynch#       8/22     Nantucket     1     P. Flood     7/10     Quabog IBA     1     M. Lynch#
Northern Fulmar     American Bittern       7/17     Tillies Bank     1     J. Wallius     7/2-17     P.I.     1     v.o.       Cory's Shearwater     7/2     Amherst     1     D. Minnear       7/21, 23     Chatham (S.B.)     1, 2 Merrill, Wheelock     7/4     Moran WMA     1     M. Lynch#       8/22     Nantucket     1     P. Flood     7/10     Quabog IBA     1     M. Lynch#
Cory's Shearwater7/2Amherst1D. Minnear7/21, 23Chatham (S.B.)1, 2 Merrill, Wheelock7/4Moran WMA1M. Lynch#8/22Nantucket1P. Flood7/10Quabog IBA1M. Lynch#
7/21, 23Chatham (S.B.)1, 2 Merrill, Wheelock7/4Moran WMA1M. Lynch#8/22Nantucket1P. Flood7/10Quabog IBA1M. Lynch#
8/22 Nantucket I P. Flood 7/10 Quabog IBA 1 M. Lynch#
8/23 Jeffries L. 2 R. Haaseth 8/11 GMNWR 1 D. Sibley
8/23-26 Gay Head 50 S. Stephens# 8/13 Stockbridge 1 ad M. Lynch#
Greater Shearwater 8/15 Easthampton 1 C. Gentes 7/2, 8/13 Chatham (S.B.) 1, 2 R. Merrill 8/21 Merrimack R. 1 S. McGrath
7/17Nantucket500B. Perkins#Least Bittern7/23, 8/29Stellwagen8, 35Gd'E, NisbetthrP.I.1 fv.o.
7/23, 8/29 Stellwagen 8, 35 Gd'E, Nisbet thr P.I. 1 f v.o.
7/31 8/21 E of Chatham 400 200 B Perkins# 7/1 13 CMNWP 1.2 Eloyd USEW/S
7/31, 8/21 E of Chatham 400, 200 B. Perkins# 7/1, 13 GMNWR 1, 2 Floyd, USFWS
7/31, 8/21         E of Chatham         400, 200         B. Perkins#         7/1, 13         GMNWR         1, 2         Floyd, USFWS           8/7         Jeffries L.         40         J. Wallius         7/17         IRWS         1         D. Hill           8/15         E. Gloucester         235         R. Heil         1         D. Hill

BIRD OBSERVER Vol. 33, No. 6, 2005

Creat Dive II				7122 8120	Westment	01 50	M. Louish#
Great Blue He 7/5	W. Boxford	20+	J. Berry	7/23, 8/20 7/24	Grafton pr	91, 59 + 2 yg	M. Lynch# M. Lynch#
7/7	GMNWR	30	USFWS	7/26, 8/16		6,7	R. Heil
8/7	Nauset Marsh	23	M. Lynch#	8/24	Barre Falls		wkcount (BK)
Great Egret	0.0.00			Bald Eagle			
thr	GMNWR	17 max		7/thr 7/9		or n	J. Berry#
thr 7/18	P.I. Nantucket	130 max 15	8/9 v.o. E. Ray	7/10	Brookfield pr n Quabog IBApr n	+ 3 yg	M. Lynch# M. Lynch#
7/23, 8/20		75, 104	M. Lynch#	7/18	Nantucket	1  imm	M. Aguier
7/23	Longmeadow	2	C. Gentes	8/19	Palmer	1 ad	V. Yurkunas#
7/30	Falmouth	21	R. Farrell	8/25	Chilmark	1	S. Bowman
8/7	Barnstable	11	M. Lynch#	Northern Har		1.4	
8/13 8/28	S. Egremont	$\frac{8}{10}$	M. Lynch# B. Nikula#	thr 7/4	P.I. Moran WMA	1-4 1 f	V.O. M. Lunah#
Snowy Egret	S. Monomoy	10	D. INIKUIA#	7/29	Eastham	1 f	M. Lynch# P. Flood
thr	P.I.	450 max	8/16 v.o.	7/31, 8/29		1,3	J. Smith
7/2	E. Boston (B.I.)		J. Sardell	8/4	E. Boston (B.I.)	ĺ juv	J. Miller
7/23	Westport	27	M. Lynch#	8/5	DWWS	3	D. Furbish
7/30, 8/28 7/31		35,60	B. Nikula M. Rines	8/7 8/18	Duxbury B	1 f 3	R. Bowes C. Dalton
8/18	GMNWR Chatham (S.B.)	$\frac{3}{2}$	C. Dalton	8/21	Chatham (S.B.) N. Monomoy	2 juv	B. Nikula
8/26	Essex	$2\bar{5}$	D. Brown#	8/25	Leicester	2 imm	M. Lynch#
8/26	W. Gloucester	50	S. Hedman	8/27, 29	GMNWR	1, 1	M. Rines
Little Blue He				Sharp-shinned			
thr	P.I.	1-3	V.O.	7/10	New Braintree	1 ad	M. Lynch#
7/10 7/10	Harwich DWWS	1 ad 1 ad	M. Tuttle D. Furbish#	7/23 7/30	Barre F.D. P.I.	1 1NHAS	S. Sutton (S. McGrath)
7/10	Boston	1	P. Petersen	8/19	Groveland		D. Chickering
7/16	S. Monomoy	i	R. Merrill	8/23	P'town	1	A. Strauss
7/23	Westport	1 ad	M. Lynch#	8/23	Ipswich (C.B.)	1	J. Berry
7/31	GMNWR	1 imm	M. Rines	8/24	Paxton	2 imm	M. Lynch#
8/26	W. Gloucester	5	S. Hedman	8/24, 25	Barre Falls		wkcount (BK)
Tricolored He 7/15	P.I.	1	S. McGrath	8/27 8/28	Leicester Ware R. IBA	3 3	M. Lynch# M. Lynch#
Cattle Egret	1.1.	•	b. meonum	Cooper's Hav		5	ivi. Lynenii
7/5	Ipswich	1	G. Sadoti	tĥr	Reports of indiv.	from 15 lc	ocations
7/17-21	Edgartown	1	L. McDowell	Northern Gos			
Green Heron	Ambarat	4	H Allen	7/2 Red shoulder	Hawley	1 ad	M. Lynch#
7/9 7/16, 8/6	Amherst Falmouth	4.7	H. Allen R. Farrell	Red-shoulder 7/2	Colrain	1	M. Lynch#
7/29	WBWS	14	D. Silverstein	7/2	Hawley	1 ad	M. Lynch#
8/18	Palmer	5	V. Yurkunas#	7/18	Oakham	1	C. Buelow
8/20	GMNWR	4	S. Perkins#	7/24	Georgetown	1	P. + F. Vale
8/24	Longmeadow	6	R. Titus	8/19	Northfield	1	R. Packard
8/24 8/26	W. Gloucester Lexington	5 4	S. Hedman# M. Rines	8/26 Broad-winged	Boxford (C.P.)	1 N	AAS (Weaver)
8/26	S. Lancaster	4	S. Sutton	7/3	Becket	3	R. Laubach
	d Night-Heron	•	broution	7/4	Moran WMA	222	M. Lynch#
thr	P.I.	5-10	v.o.	7/10	Quabog IBA		M. Lynch#
7/4, 8/23	Wakefield	5,4	P. + F. Vale	7/23	Barre F.D.	3.	S. Sutton
7/8	Watertown GMNWR	4 6 8 USE	J. Sharp WS, Ferraresso	8/13 8/28	Stockbridge Ware R. IBA	2 imm 2	M. Lynch#
7/24	Worcester	2 ad	M. Lynch#	American Ke		2	M. Lynch#
8/6	Stellwagen	11	M. Lynch#	7/1	Amherst	3	H. Allen
8/24	Newbypt	2 N	AAS (B. Gette)	8/6	Montague	4	R. Packard
Glossy Ibis	CLAND	2.5		8/12	DWWS	3	D. Furbish
7/11-8/11 7/11	GMNWR Lexington	3-5 1	v.o. J. Sutherland	8/27 Merlin	Leicester	3	M. Lynch#
7/13, 30	P.I.	28, 34	R. Heil	7/14, 8/20	P.I.	1,1	Wetmore, Vale
7/30	Wompatuck SP		G. d'Entremont	7/24	Sandwich	1	M. Keleher
7/30	Rowley	65+	R. Heil	7/31-8/28	Northampton	4 sightii	
8/26	N. Monomoy		AS (Silverstein)	8/26	Leicester	1	M. Lynch#
8/28 Black Vulture	S. Monomoy	8	B. Nikula#	8/29	Scituate	1 1	D. Furbish J. Nelson
7/12	Alford	2	T. Gagnon	8/30 Peregrine Fal	GMNWR	1	J. INCISOII
Turkey Vultur	e	-	ii ougnon	7/17	Worcester	3	M. Lynch#
7/6	Williamstown	pr n	fide T. French	7/24	Deerfield	1	H. Allen
7/12	Alford	30	T. Gagnon	7/27	Eastham (CGB)	1 juv.	B. Nikula
7/17 7/22	Salisbury Turners Falls	6 17	R. Heil R. Packard	7/30 8/18	Leicester Chatham (S.B.)	1 imm 1	M. Lynch# C. Dalton
7/23	Springfield	43	P. + F. Vale	8/23	P.I.	2	R. Heil
7/23	Westfield	35	P. + F. Vale	8/24	Longmeadow	1	R. Titus
8/7	Becket	17	R. Laubach	8/24	Duxbury B.	1 f b	R. Bowes
8/21	Ware	16	M. Lynch#	8/26	Northampton	1	T. Gagnon
Osprey 7/thr	Ayer	pr n	P. Vales	8/30 Clapper Rail	Holyoke	2	H. Allen
7/15	Sandwich	6	M. Keleher#	7/30	Chatham	1	B. Nikula
7/16	Falmouth	9 nests		8/5-13	P.I.	1	S. McGrath

King Rail				7
7/3	P.I.	1	T. Wetmore	7
Virginia Rail	** * * *	2		7
7/5	Hardwick	2	C. Buelow	8
7/12	Bolton Flats	1 ad, 3 ju		. 8
7/17	GMNWR	5	M. Lynch#	Less
7/28	P.I.	5 5 5	R. Heil M. Toylor	7
7/30	S. Quabbin	5	M. Taylor	
8/13 8/21	Stockbridge	6 ad 2 inv	M. Lynch#	7 7
Sora	Bradford 1	ad, 2 juv	D. + S. Larson	8
thr	P.I.	2_3	VO	8
7/3	Newbypt	2-3 1	v.o. S. McGrath	8
7/4	Boxford	2	R. Messer#	8
7/13	IRWS	2	J. Berry#	8
7/13	GMNWR	2	USFWS	Soli
7/16	Bolton Flats	2 2 2 2	M. Lynch#	7
8/20	Amherst	ĩ	J. Smith	7
8/21	Quabbin Pk	i	M. Lynch#	7
Common Mo			1111 Ly 11011	8
7/2-10	P.I.	1-2	T. Wetmore	8
7/31	E. Boston	1	D. + I. Jewell	8
8/13	Stockbridge	1 ad	M. Lynch#	Will
8/26	S. Monomoy	1	R. Merrill	7
Sandhill Cra				7
8/18	DWWS	1	D. Ludlow	7
Black-bellied				7
7/2.28	Chatham (S.B.)	267, 475	Merrill, Nikula	7
7/23, 8/27	Duxbury B.	6, 335	R. Bowes	8
7/27	Sandwich	30	D. Furbish	Wes
7/28, 8/23	P.I.	3, 180	R. Heil	7
7/29, 8/26	Eastham	40,650	P. Flood	Spot
8/14, 25	Chatham (S.B.)			7
8/24	Paxton	1	M. Lynch#	7
American Gol	lden-Plover			7
8/19, 31	P.I.	1	H. D'E, Berry	7
8/24-26	Chilmark	2	A. Keith	7
8/26	Chatham (S.B.)		L. Ferraresso	7
8/26	Northampton	2	J. Smith	8
8/26	GMNWŔ	1	J. Forbes	8
8/27	Hadley	2	C. Gentes	8
8/28	S. Monomoy	2 ad	B. Nikula#	Upla
Wilson's Ploy	ver (details súbm	itted) *		7
7/5	S. Monomoy	1 ph	R. Merrill	7
7/10-8/29	Chatham (S.B.)	1 ph J.	Trimble + v.o.	8
Semipalmated	Plover	1.9.5 1.0.0.0	<b>D N</b> <sup>21</sup> 1	Whi
7/10, 8/14	Chatham (S.B.)			th
7/13, 8/16	P.I.	61, 1400		7
7/16, 8/7	Duxbury B.	626, 1332	R. Bowes	7
7/16, 8/18	Scituate	240, 1749		7
7/23, 8/20	Acoaxet	111, 920 4, 2	M. Lynch#	7
7/25, 8/21	Northampton	4, 2	Magee, Smith P. Flood	7 7
7/29, 8/26	Eastham	800, 2500		
8/5 8/11	Ipswich (C.B.)	800	J. Berry USFWS	8 8
Piping Plover	GMNWR	22	0.91.44.9	8
7/10, 8/14	Chatham (S.B.)	18 75 T	rimble, Garvey	Hud
7/15	Sandwich	10, 75 1	M. Keleher#	tł
7/16	Duxbury B.	8 ad, 4 yg	R. Bowes	7
7/22		$11 \text{ pr}, 27 \text{ y}_{2}$	g K. McGuire	7
7/29	Eastham	$^{11}$ 8 ad, 4 yg	P. Flood	7
8/5	Ipswich (C.B.)	3 ad, 3 yg		7
Killdeer	ipswien (C.D.)	5 ad, 5 95	J. Delly	Mar
7/16				7
	Bolton Flats	46	M. Lynch#	
	Bolton Flats Newbury	46 54	M. Lynch# R. Heil	
7/25	Newbury	54	R. Heil	8
			M. Lynch# R. Heil T. Gagnon USFWS	8 Rud
7/25 8/6	Newbury W. Springfield	54 44	R. Heil T. Gagnon	8
7/25 8/6 8/11	Newbury W. Springfield GMNWR Hatfield	54 44 42	R. Heil T. Gagnon USFWS	8 Rud 7
7/25 8/6 8/11 8/29	Newbury W. Springfield GMNWR Hatfield	54 44 42 50	R. Heil T. Gagnon USFWS H. Allen S. Zendeh#	8 Rud 7 7
7/25 8/6 8/11 8/29 American Oys	Newbury W. Springfield GMNWR Hatfield stercatcher	54 44 42 50	R. Heil T. Gagnon USFWS H. Allen S. Zendeh# L. Tyrala#	8 Rud 7 7 7
7/25 8/6 8/11 8/29 American Oys 7/17 7/17 7/17 7/23	Newbury W. Springfield GMNWR Hatfield stercatcher Winthrop (Snak	54 44 42 50 (ae) 10	R. Heil T. Gagnon USFWS H. Allen S. Zendeh# L. Tyrala#	8 Rud 7 7 7 8 8 8
7/25 8/6 8/11 8/29 American Oys 7/17 7/17	Newbury W. Springfield GMNWR Hatfield stercatcher Winthrop (Snak Squantum	$54 \\ 44 \\ 42 \\ 50 \\ ce) 10 \\ 2 \\ 20 \\ ce) 10 \\$	R. Heil T. Gagnon USFWS H. Allen S. Zendeh#	8 Rud 7 7 7 8 8 8
7/25 8/6 8/11 8/29 American Oys 7/17 7/17 7/23 7/28, 8/14 7/30	Newbury W. Springfield GMNWR Hatfield stercatcher Winthrop (Snak Squantum Westport	54444250(ae) 1022095, 1702	R. Heil T. Gagnon USFWS H. Allen S. Zendeh# L. Tyrala# M. Lynch#	8 Rud 7 7 7 8 8 8 8 8 8
7/25 8/6 8/11 8/29 American Oy: 7/17 7/17 7/23 7/28, 8/14 7/30 8/29	Newbury W. Springfield GMNWR Hatfield stercatcher Winthrop (Snak Squantum Westport Chatham (S.B.) Falmouth N. Monomoy	54444250(a) 1022095, 170	R. Heil T. Gagnon USFWS H. Allen S. Zendeh# L. Tyrala# M. Lynch# B. Nikula	8 Rud 7 7 7 7 8 8 8 8 8 8 8 8 8
7/25 8/6 8/11 8/29 American Oys 7/17 7/17 7/23 7/28, 8/14 7/30 8/29 Greater Yellov	Newbury W. Springfield GMNWR Hatfield stercatcher Winthrop (Snak Squantum Westport Chatham (S.B.) Falmouth N. Monomoy wlegs	54444250 $2095, 1702157$	R. Heil T. Gagnon USFWS H. Allen S. Zendeh# L. Tyrala# M. Lynch# B. Nikula R. Farrell R. Merrill	8 Rud 7 7 7 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
7/25 8/6 8/11 8/29 American Oy: 7/17 7/23 7/28, 8/14 7/30 8/29 Greater Yellov 7/3, 8/20	Newbury W. Springfield GMNWR Hatfield stercatcher Winthrop (Snak Squantum Westport Chatham (S.B.) Falmouth N. Monomoy wlegs P.I.	544442502095, 17021578, 102	R. Heil T. Gagnon USFWS H. Allen S. Zendeh# L. Tyrala# M. Lynch# B. Nikula R. Farrell R. Merrill P. + F. Vale	8 Rud 7 7 7 8 8 8 8 8 8 8 8 8 8 8 Red 7
7/25 8/6 8/11 8/29 American Oys 7/17 7/17 7/23 7/28, 8/14 7/30 8/29 Greater Yellov	Newbury W. Springfield GMNWR Hatfield stercatcher Winthrop (Snak Squantum Westport Chatham (S.B.) Falmouth N. Monomoy wlegs	544442502095, 17021578, 102	R. Heil T. Gagnon USFWS H. Allen S. Zendeh# L. Tyrala# M. Lynch# B. Nikula R. Farrell R. Merrill	8 Rud 7 7 7 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8

7/29, 8/26	Eastham	90, 20	P. Flood
7/30, 8/21	Duxbury B.	60, 40	R. Bowes
7/31	GMNŴR	10	M. Rines
8/7	Nauset Marsh	280+	M. Lynch#
8/26	Leicester	4	M. Lynch#
Lesser Yellow	legs		
7/13, 8/16	P.I.	62, 120	R. Heil
7/17	GMNWR	21	M. Lynch#
7/25	Newbypt H.	760 ad	R. Heil
7/30, 8/28		120, 40	B. Nikula
8/4	Chatham (S.B.)	30	M. Keleher#
8/7	Nauset Marsh	55+	M. Lynch#
8/14	Longmeadow	6	C. Gentes
8/26	Lexington	6	M. Rines
8/28 Salitare Sand	Agawam	66	J. Smith
Solitary Sand	Dearfield	27	D Doolcord
7/7, 15 7/16	Deerfield Bolton Flats	3,7	R. Packard M. Lynch#
7/31	GMNWR	5	M. Rines
8/2	Worc. (BMB)	6 5 4	J. Liller
8/13	S. Egremont	5	M. Lynch#
8/26	Lexington	5 5	M. Rines
Willet	Lexington	5	ini. remes
7/10, 8/21	Duxbury B.	16, 19	R. Bowes
7/17	N. Monomoy	180	B. Nikula
7/17, 8/16	P.I.	81.3	R. Heil
7/23, 8/20	Westport	81, 3 23, 4	M. Lynch#
7/28, 8/21	Chatham (S.B.)	300, 225	B. Nikula
8/6	WBWS	30+	M. Lynch#
Western Wille			-
7/15-31	Chatham (S.B.)	15+	B. Nikula
Spotted Sandy	oiper		
7/16	Duxbury B.	4	R. Bowes
7/17	Winthrop (Snak		S. Zendeh#
7/18	Turners Falls	4	R. Packard
7/19	Noman's Land	14+	A. Keith
7/23	Acoaxet	5	M. Lynch#
7/28	P.I.	2 ad, 8	juv R. Heil
8/21	Quabbin Pk	4	M. Lynch#
8/26	Lexington	4	M. Rines
8/26	Agawam	4	M. Rines S. Kellogg
8/26 Upland Sandp	Agawam	4	S. Kellogg
8/26 Upland Sandp 7/7-8	Agawam biper Hanscom	4 6	S. Kellogg G. Sadoti
8/26 Upland Sandp 7/7-8 7/23	Agawam biper Hanscom Northampton	4 6 1	S. Kellogg G. Sadoti A. Magee
8/26 Upland Sandr 7/7-8 7/23 8/19-21	Agawam biper Hanscom	4 6 1	S. Kellogg G. Sadoti
8/26 Upland Sandr 7/7-8 7/23 8/19-21 Whimbrel	Agawam piper Hanscom Northampton P.I.	4 6 1 1 H	S. Kellogg G. Sadoti A. Magee D'Entremont#
8/26 Upland Sandp 7/7-8 7/23 8/19-21 Whimbrel thr	Agawam piper Hanscom Northampton P.I. P.I.	4 6 1 1 H 1-3	S. Kellogg G. Sadoti A. Magee D'Entremont# v.o.
8/26 Upland Sandr 7/7-8 7/23 8/19-21 Whimbrel thr 7/14	Agawam piper Hanscom Northampton P.I. P.I. Dennis	4 6 1 1 H 1-3 1	S. Kellogg G. Sadoti A. Magee D'Entremont# v.o. D. Furbish
8/26 Upland Sandr 7/7-8 7/23 8/19-21 Whimbrel thr 7/14 7/18	Agawam siper Hanscom Northampton P.I. P.I. Dennis Nantucket	4 6 1 1-3 1 18	S. Kellogg G. Sadoti A. Magee D'Entremont# v.o. D. Furbish D. Lang
8/26 Upland Sandr 7/7-8 8/19-21 Whimbrel thr 7/14 7/18 7/18, 8/18	Agawam siper Hanscom Northampton P.I. P.I. Dennis Nantucket Newbypt H.	4 6 1 1-3 1 18	S. Kellogg G. Sadoti A. Magee D'Entremont# v.o. D. Furbish D. Lang S. Grinley
8/26 Upland Sandr 7/7-8 7/23 8/19-21 Whimbrel thr 7/14 7/18 7/18, 8/18 7/19	Agawam oiper Hanscom Northampton P.I. Dennis Nantucket Newbypt H. MV	4 6 1 1 H. 1-3 1 18 2, 2 2	S. Kellogg G. Sadoti A. Magee D'Entremont# D. Furbish D. Lang S. Grinley L. Johnson
8/26 Upland Sandr 7/7-8 7/23 8/19-21 Whimbrel thr 7/14 7/18 7/18, 8/18 7/19 7/23	Agawam oiper Hanscom Northampton P.I. Dennis Nantucket Newbypt H. MV Westport	4 6 1 1-3 1 18 2, 2 1	S. Kellogg G. Sadoti A. Magee D'Entremont# V.O. D. Furbish D. Lang S. Grinley L. Johnson M. Lynch#
8/26 Upland Sandr 7/7-8 7/23 8/19-21 Whimbrel thr 7/14 7/18 7/18, 8/18 7/19	Agawam oiper Hanscom Northampton P.I. P.I. Dennis Nantucket Newbypt H. MV Westport Chatham (S.B.)	4 6 1 1-3 1 18 2, 2 1	S. Kellogg G. Sadoti A. Magee D'Entremont# D. Furbish D. Lang S. Grinley L. Johnson M. Lynch# B. Nikula
8/26 Upland Sandr 7/7-8 7/23 8/19-21 Whimbrel thr 7/14 7/18 7/18, 8/18 7/19 7/23 7/28, 8/14	Agawam oiper Hanscom Northampton P.I. Dennis Nantucket Newbypt H. MV Westport	4 6 1 1 H 1-3 1 18 2, 2 2 1 150, 100	S. Kellogg G. Sadoti A. Magee D'Entremont# D. Furbish D. Lang S. Grinley L. Johnson M. Lynch#
8/26 Upland Sandr 7/7-8 7/23 8/19-21 Whimbrel thr 7/18, 8/18 7/18, 8/18 7/19 7/23 7/28, 8/14 8/6	Agawam piper Hanscom Northampton P.I. Dennis Nantucket Newbypt H. MV Westport Chatham (S.B.) WBWS	4 6 1 1 H. 1-3 18 2, 2 2 1 150, 100 79	S. Kellogg G. Sadoti A. Magee D'Entremont# D. Furbish D. Lang S. Grinley L. Johnson M. Lynch# B. Nikula M. Lynch#
8/26 Upland Sandr 7/7-8 7/23 8/19-21 Whimbrel thr 7/14 7/18 7/18, 8/18 7/19 7/23 7/28, 8/14 8/26	Agawam piper Hanscom Northampton P.I. P.I. Dennis Nantucket Newbypt H. MV Westport Chatham (S.B.) WBWS Eastham E. Gloucester Jowit	4 6 1 1-3 1 8 2, 2 2 1 150, 100 79 1	S. Kellogg G. Sadoti A. Magee D'Entremont# D. Furbish D. Furbish D. Lang S. Grinley L. Johnson M. Lynch# B. Nikula M. Lynch# P. Flood R. Heil
8/26 Upland Sandr 7/7-8 7/23 8/19-21 Whimbrel thr 7/18 7/18, 8/18 7/19 7/23 7/28, 8/14 8/6 8/26 8/30 Hudsonian Go thr	Agawam oiper Hanscom Northampton P.I. P.I. Dennis Nantucket Newbypt H. MV Westport Chatham (S.B.) WBWS Eastham E. Gloucester	4 6 1 1 H 1-3 1 8 2, 2 2 1 150, 100 79 1 1 85 max	S. Kellogg G. Sadoti A. Magee D'Entremont# D. Furbish D. Lang S. Grinley L. Johnson M. Lynch# B. Nikula M. Lynch# P. Flood R. Heil 8/14 v.o.
8/26 Upland Sandr 7/7-8 7/23 8/19-21 Whimbrel thr 7/14 7/18, 8/18 7/19 7/23 7/28, 8/14 8/6 8/26 8/30 Hudsonian Go thr 7/4	Agawam piper Hanscom Northampton P.I. P.I. Dennis Nantucket Newbypt H. MV Westport Chatham (S.B.) WBWS Eastham E. Gloucester odwit Chatham (S.B.) S. Monomoy	4 6 1 1-3 1 8 2, 2 2 1 150, 100 79 1 1 85 max 27	S. Kellogg G. Sadoti A. Magee D'Entremont# D. Furbish D. Furbish D. Lang S. Grinley L. Johnson M. Lynch# B. Nikula M. Lynch# P. Flood R. Heil
8/26 Upland Sandr 7/7-8 7/23 8/19-21 Whimbrel thr 7/18, 8/18 7/18, 8/18 7/18, 8/18 7/18, 8/14 8/26 8/30 Hudsonian Go thr 7/4 7/10-8/13	Agawam piper Hanscom Northampton P.I. P.I. Dennis Nantucket Newbypt H. MV Westport Chatham (S.B.) WBWS Eastham E. Gloucester odwit Chatham (S.B.) S. Monomoy Newbypt H.	4 6 1 1 H. 1-3 1 8 2, 2 2 1 150, 100 79 1 1 85 max 27 1-4	S. Kellogg G. Sadoti A. Magee D'Entremont# D. Furbish D. Lang S. Grinley L. Johnson M. Lynch# B. Nikula M. Lynch# P. Flood R. Heil 8/14 v.o. R. Merrill y.o.
8/26 Upland Sandr 7/7-8 7/23 8/19-21 Whimbrel thr 7/18, 8/18 7/18, 8/18 7/18, 8/18 7/19 7/23 7/28, 8/14 8/6 8/26 8/30 Hudsonian Go thr 7/4 7/10-8/13 7/10, 8/5	Agawam piper Hanscom Northampton P.I. P.I. Dennis Nantucket Newbypt H. MV Westport Chatham (S.B.) WBWS Eastham E. Gloucester Johni Chatham (S.B.) S. Monomoy Newbypt H. P.I.	4 6 1 1 H 1-3 1 8 2, 2 2 1 150, 100 79 1 1 85 max 27 1-4 1, 3 G1	S. Kellogg G. Sadoti A. Magee D'Entremont# D. Furbish D. Lang S. Grinley L. Johnson M. Lynch# B. Nikula M. Lynch# P. Flood R. Heil 8/14 v.o. R. Merrill v.o. cinley, McGrath
8/26 Upland Sandr 7/7-8 7/23 8/19-21 Whimbrel thr 7/14 7/18, 8/18 7/19 7/23 7/28, 8/14 8/26 8/30 Hudsonian Go thr 7/4 7/10-8/13 7/16, 8/5 7/17	Agawam piper Hanscom Northampton P.I. P.I. Dennis Nantucket Newbypt H. MV Westport Chatham (S.B.) WBWS Eastham E. Gloucester odwit Chatham (S.B.) S. Monomoy Newbypt H. P.I. S. Monomoy Newbypt H. P.I. Winthrop (Snak	4 6 1 1 H 1-3 1 8 2, 2 2 1 150, 100 79 1 1 85 max 27 1-4 1, 3 G1	S. Kellogg G. Sadoti A. Magee D'Entremont# D. Furbish D. Lang S. Grinley L. Johnson M. Lynch# B. Nikula M. Lynch# P. Flood R. Heil 8/14 v.o. R. Merrill y.o.
8/26 Upland Sandr 7/7-8 7/23 8/19-21 Whimbrel thr 7/18, 8/18 7/18, 8/18 7/18, 8/18 7/18, 8/14 8/26 8/30 Hudsonian Go thr 7/4 7/10-8/13 7/16, 8/5 7/17 Marbled God	Agawam piper Hanscom Northampton P.I. P.I. Dennis Nantucket Newbypt H. MV Westport Chatham (S.B.) WBWS Eastham E. Gloucester odwit Chatham (S.B.) S. Monomoy Newbypt H. P.I. S. Monomoy Newbyt H. P.I. S. Monomoy Newbyt H. P.I. S. Monomoy Newbyt H. P.I. S. Monomoy Newbyt H. P.I. S. Monomoy Newbyt H. P.I. S. Monomoy	4 6 1 1 1 1 8 2, 2 2 1 150, 100 79 1 85 max 27 1.4 1, 3 Greenting of the second seco	S. Kellogg G. Sadoti A. Magee D'Entremont# D. Furbish D. Lang S. Grinley L. Johnson M. Lynch# B. Nikula M. Lynch# P. Flood R. Heil 8/14 v.o. R. Merrill v.o. inley, McGrath S. Zendeh#
8/26 Upland Sandr 7/7-8 7/23 8/19-21 Whimbrel thr 7/18, 8/18 7/18, 8/18 7/18, 8/18 7/19 7/23 7/28, 8/14 8/6 8/26 8/30 Hudsonian Gethr 7/10-8/13 7/16, 8/5 7/17 Marbled Godr 7/10-8/31	Agawam jiper Hanscom Northampton P.I. P.I. Dennis Nantucket Newbypt H. MV Westport Chatham (S.B.) WBWS Eastham E. Gloucester Jowit Chatham (S.B.) S. Monomoy Newbypt H. P.I. Winthrop (Snak wit Chatham (S.B.)	4 6 1 1 H 1-3 1 18 2, 2 2 1 150, 100 79 1 1 85 max 27 1 1 85 max 27 1 1 85 max 27 1 1 8 2 1 1 8 2 1 1 8 2 1 1 1 1 1 1 1 1 1 1 1 1 1	S. Kellogg G. Sadoti A. Magee D'Entremont# v.o. D. Furbish D. Lang S. Grinley L. Johnson M. Lynch# B. Nikula M. Lynch# P. Flood R. Heil 8/14 v.o. R. Merrill v.o. cinley, McGrath S. Zendeh# 8/29 v.o.
8/26 Upland Sandr 7/7-8 7/23 8/19-21 Whimbrel thr 7/18 7/18, 8/18 7/19 7/23 7/28, 8/14 8/26 8/30 Hudsonian Go thr 7/4 7/10-8/13 7/16, 8/5 7/17 Marbled God 7/10-8/31 8/29-31	Agawam biper Hanscom Northampton P.I. P.I. Dennis Nantucket Newbypt H. MV Westport Chatham (S.B.) WBWS Eastham E. Gloucester dwit Chatham (S.B.) S. Monomoy Newbypt H. P.I. Winthrop (Snak wit Chatham (S.B.) Winthrop (Snak wit Chatham (S.B.) M. Tisbury	4 6 1 1 1 1 8 2, 2 2 1 150, 100 79 1 85 max 27 1.4 1, 3 Greenting of the second seco	S. Kellogg G. Sadoti A. Magee D'Entremont# D. Furbish D. Lang S. Grinley L. Johnson M. Lynch# B. Nikula M. Lynch# P. Flood R. Heil 8/14 v.o. R. Merrill v.o. inley, McGrath S. Zendeh#
8/26 Upland Sandr 7/7-8 7/23 8/19-21 Whimbrel thr 7/18, 8/18 7/18, 8/18 7/18, 8/18 7/18, 8/14 8/26 8/20 Hudsonian Go thr 7/4 7/10-8/13 7/16, 8/5 7/10-8/31 8/29-31 Ruddy Turnst	Agawam piper Hanscom Northampton P.I. P.I. Dennis Nantucket Newbypt H. MV Westport Chatham (S.B.) WBWS Eastham E. Gloucester odwit Chatham (S.B.) S. Monomoy Newbypt H. P.I. S. Monomoy Newbypt H. P.I. Winthrop (Snak wit Chatham (S.B.) Winthrop (Snak wit Chatham (S.B.) Mathama (S.B.)	4 6 1 1 H 1-3 1 8 2, 2 2 1 150, 100 79 1 85 max 27 1-4 1, 3 Gri 8 max 1 8 max 1	S. Kellogg G. Sadoti A. Magee D'Entremont# D. Furbish D. Lang S. Grinley L. Johnson M. Lynch# B. Nikula M. Lynch# P. Flood R. Heil 8/14 v.o. R. Merrill v.o. rinley, McGrath S. Zendeh# 8/29 v.o. M. Silbert#
8/26 Upland Sandr 7/7-8 7/23 8/19-21 Whimbrel thr 7/18, 8/18 7/18, 8/18 7/18, 8/18 7/18, 8/18 7/19 7/23, 8/14 8/6 8/26 8/30 Hudsonian Get thr 7/4 7/10-8/13 7/16, 8/5 7/17 Marbled Godr 7/10-8/31 8/29-31 Ruddy Turnst 7/25, 8/9	Agawam biper Hanscom Northampton P.I. Dennis Nantucket Newbypt H. MV Westport Chatham (S.B.) WBWS Eastham E. Gloucester dwit Chatham (S.B.) S. Monomoy Newbypt H. P.I. Winthrop (Snak wit Chatham (S.B.) W. Tisbury one P.I.	4 6 1 1 H 1-3 1 18 2, 2 2 1 150, 100 79 1 1 85 max 27 1-4 1, 3 Gr 8 max 4, 27	S. Kellogg G. Sadoti A. Magee D'Entremont# D. Furbish D. Furbish D. Lang S. Grinley L. Johnson M. Lynch# B. Nikula M. Lynch# B. Nikula M. Lynch# P. Flood R. Heil 8/14 v.o. R. Merrill V.O. cinley, McGrath S. Zendeh# 8/29 v.o. M. Silbert# R. Heil
8/26 Upland Sandr 7/7-8 7/23 8/19-21 Whimbrel thr 7/18 7/18, 8/18 7/19 7/23 7/28, 8/14 8/26 8/30 Hudsonian Go thr 7/4 7/10-8/13 7/16, 8/5 7/17 Marbled God 7/10-8/13 8/29-31 Ruddy Turnst 7/25, 8/9	Agawam biper Hanscom Northampton P.I. P.I. Dennis Nantucket Newbypt H. MV Westport Chatham (S.B.) WBWS Eastham E. Gloucester odwit Chatham (S.B.) S. Monomoy Newbypt H. P.I. Winthrop (Snak wit Chatham (S.B.) W. Tisbury one P.I. Chatham (S.B.)	4 6 1 1 H 1-3 1 8 2, 2 2 1 150, 100 79 1 1 85 max 27 1-4 1, 3 G e) 1 8 max 4, 27 275, 325	S. Kellogg G. Sadoti A. Magee D'Entremont# D. Furbish D. Lang S. Grinley L. Johnson M. Lynch# B. Nikula M. Lynch# B. Nikula M. Lynch# R. Heil 8/14 v.o. R. Merrill v.o. cinley, McGrath S. Zendeh# 8/29 v.o. M. Silbert# R. Heil B. Nikula
8/26 Upland Sandr 7/7-8 7/23 8/19-21 Whimbrel thr 7/18, 8/18 7/18, 8/18 7/18, 8/18 7/18, 8/18 7/23 7/28, 8/14 8/26 8/30 Hudsonian Go thr 7/4 7/10-8/13 7/16, 8/30 7/10-8/31 Ruddy Turnst 7/25, 8/9 7/28, 8/14 7/29	Agawam piper Hanscom Northampton P.I. P.I. Dennis Nantucket Newbypt H. MV Westport Chatham (S.B.) S. Monomoy Newbypt H. P.I. Chatham (S.B.) S. Monomoy Newbypt H. P.I. Chatham (S.B.) Winthrop (Snak wit Chatham (S.B.) W. Tisbury one P.I. Chatham (S.B.)	4 6 1 1 H 1-3 1 18 2, 2 2 1 150, 100 79 1 1 85 max 27 1.4 1, 3 Gri 8 max 1 8 max 1 8 max 2, 2 2 3 5 3 5	S. Kellogg G. Sadoti A. Magee D'Entremont# D. Furbish D. Lang S. Grinley L. Johnson M. Lynch# B. Nikula M. Lynch# P. Flood R. Heil 8/14 v.o. R. Merrill v.o. M. Silbert 8/29 v.o. M. Silbert# R. Heil B. Nikula J. Berry#
8/26 Upland Sandr 7/7-8 7/23 8/19-21 Whimbrel thr 7/18, 8/18 7/18, 8/18 7/18, 8/18 7/18, 8/14 8/26 8/20 Hudsonian Go thr 7/4 7/10-8/13 7/16, 8/5 7/17 Marbled God <sup>+</sup> 7/10-8/31 8/29-31 Ruddy Turnst 7/25, 8/9 7/28, 8/14 7/29 7/30, 8/22	Agawam jiper Hanscom Northampton P.I. P.I. Dennis Nantucket Newbypt H. MV Westport Chatham (S.B.) WBWS Eastham E. Gloucester odwit Chatham (S.B.) S. Monomoy Newbypt H. P.I. Winthrop (Snak wit Chatham (S.B.) Winthrop (Snak wit Chatham (S.B.) Rockport island Duxbury B.	4 6 1 1 H 1-3 1 8 2, 2 2 1 150, 100 79 1 1 85 max 27 1-4 1, 3 Gr 8 max 4, 27 275, 325 \$ 35 28, 107	S. Kellogg G. Sadoti A. Magee D'Entremont# D. Furbish D. Furbish D. Lang S. Grinley L. Johnson M. Lynch# B. Nikula M. Lynch# B. Nikula M. Lynch# P. Flood R. Heil 8/14 v.o. R. Merrill V.o. cinley, McGrath S. Zendeh# 8/29 v.o. M. Silbert# R. Heil B. Nikula J. Berry# R. Bowes
8/26 Upland Sandr 7/7-8 7/23 8/19-21 Whimbrel thr 7/18 7/18, 8/18 7/19 7/23 7/28, 8/14 8/26 8/30 Hudsonian Go thr 7/4 7/10-8/13 7/16, 8/5 7/17 Marbled Godt 7/10-8/13 8/29-31 Ruddy Turnst 7/25, 8/9 7/28, 8/14 7/29 7/30, 8/22 8/9	Agawam biper Hanscom Northampton P.I. P.I. Dennis Nantucket Newbypt H. MV Westport Chatham (S.B.) WBWS Eastham E. Gloucester odwit Chatham (S.B.) S. Monomoy Newbypt H. P.I. Chatham (S.B.) W. Tisbury One P.I. Chatham (S.B.) W. Tisbury One P.I. Chatham (S.B.) Chatham (S.B.) Chatham (S.B.) H. Chatham (S.B.) Chatham (S.B.) M. Tisbury One P.I. Chatham (S.B.) Chatham (S.B.) Rockport island Duxbury B. Hadley	4 6 1 1 H 1-3 1 8 2, 2 2 1 150, 100 79 1 1 85 max 27 1-4 1, 3 Grievent 8 max 4, 27 275, 325 8, 35 28, 107 1	S. Kellogg G. Sadoti A. Magee D'Entremont# D. Furbish D. Furbish D. Lang S. Grinley L. Johnson M. Lynch# B. Nikula M. Lynch# B. Nikula M. Lynch# P. Flood R. Heil 8/14 v.o. R. Merrill V.o. cinley, McGrath S. Zendeh# 8/29 v.o. M. Silbert# R. Heil B. Nikula J. Berry# R. Bowes
8/26 Upland Sandr 7/7-8 7/23 8/19-21 Whimbrel thr 7/18, 8/18 7/18, 8/18 7/19, 7/23 7/28, 8/14 8/26 8/30 Hudsonian Go thr 7/4, 7/10-8/13 7/10, 8/5 7/17 Marbled Godi 7/10-8/13 7/10-8/13 7/10-8/3 18/29-31 Ruddy Turnst 7/25, 8/9 7/30, 8/22 8/9 8/14	Agawam piper Hanscom Northampton P.I. P.I. Dennis Nantucket Newbypt H. MV Westport Chatham (S.B.) WBWS Eastham E. Gloucester odwit Chatham (S.B.) S. Monomoy Newbypt H. P.I. Chatham (S.B.) Withtrop (Snak wit Chatham (S.B.) W. Tisbury one P.I. Chatham (S.B.) Rockport island Duxbury B. Hadley Plymouth B.	4 6 1 1 H 1-3 1 8 2, 2 2 1 150, 100 79 1 1 85 max 27 1-4 1, 3 Gi e) 1 8 max 4, 27 275, 325 s 35 28, 107 53	S. Kellogg G. Sadoti A. Magee D'Entremont# D. Furbish D. Lang S. Grinley L. Johnson M. Lynch# B. Nikula M. Lynch# P. Flood R. Heil 8/14 v.o. R. Merrill v.o. M. Silbert 8/29 v.o. M. Silbert# R. Heil B. Nikula J. Berry# R. Bowes C. Gentes C. Dalton
8/26 Upland Sandr 7/7-8 7/23 8/19-21 Whimbrel thr 7/18, 8/18 7/18, 8/18 7/18, 8/18 7/18, 8/14 8/26 8/30 Hudsonian Go thr 7/4 7/10-8/13 7/16, 8/5 7/17 Marbled God <sup>*</sup> 7/10-8/31 8/29-31 Ruddy Turnst 7/25, 8/9 7/28, 8/14 8/18	Agawam piper Hanscom Northampton P.I. P.I. Dennis Nantucket Newbypt H. MV Westport Chatham (S.B.) WBWS Eastham E. Gloucester odwit Chatham (S.B.) S. Monomoy Newbypt H. P.I. S. Monomoy Newbyt H. P.I. Chatham (S.B.) Winthrop (Snak wit Chatham (S.B.) Rockport island Duxbury B. Hadley Plymouth B. Scituate	4 6 1 1 H 1-3 1 8 2, 2 2 1 150, 100 79 1 1 85 max 27 1-4 1, 3 Gr 8 max 4, 27 275, 325 8 35 28, 107 1 53 46	S. Kellogg G. Sadoti A. Magee D'Entremont# D. Furbish D. Lang S. Grinley L. Johnson M. Lynch# B. Nikula M. Lynch# B. Nikula M. Lynch# P. Flood R. Heil 8/14 v.o. R. Merrill v.o. inley, McGrath S. Zendeh# 8/29 v.o. M. Silbert# R. Heil B. Nikula J. Berry# R. Bowes C. Gentes C. Dalton S. Maguire#
8/26 Upland Sandr 7/7-8 7/23 8/19-21 Whimbrel thr 7/14 7/18, 8/18 7/19 7/23 7/28, 8/14 8/26 8/30 Hudsonian Go thr 7/4 7/10-8/13 7/16, 8/5 7/17 Marbled Godt 7/10-8/13 8/29-31 Ruddy Turnst 7/25, 8/9 7/28, 8/14 7/29 7/30, 8/22 8/9 8/14 8/20	Agawam piper Hanscom Northampton P.I. P.I. Dennis Nantucket Newbypt H. MV Westport Chatham (S.B.) WBWS Eastham E. Gloucester odwit Chatham (S.B.) S. Monomoy Newbypt H. P.I. Chatham (S.B.) W. Tisbury one P.I. Chatham (S.B.) W. Tisbury one P.I. Chatham (S.B.) W. Tisbury one P.I. Chatham (S.B.) S. Chatham (S.B.) Chatham (S.B.) Chatham (S.B.) W. Tisbury one P.I. Chatham (S.B.) S. Chatham (S.B.) Chatham (S.B.) Chatham (S.B.) B. Chatham (S.B.) W. Tisbury one P.I. Chatham (S.B.) Rockport island Duxbury B. Hadley Plymouth B. Scituate Westport	4 6 1 1 H 1-3 1 8 2, 2 2 1 150, 100 79 1 1 85 max 27 1-4 1, 3 Gi e) 1 8 max 4, 27 275, 325 s 35 28, 107 53	S. Kellogg G. Sadoti A. Magee D'Entremont# V.O. D. Furbish D. Lang S. Grinley L. Johnson M. Lynch# B. Nikula M. Lynch# P. Flood R. Heil 8/14 v.o. R. Heil 8/14 v.o. R. Merrill v.o. inley, McGrath S. Zendeh# 8/29 v.o. M. Silbert# R. Heil B. Nikula J. Berry# R. Bowes C. Gentes C. Dalton S. Maguire# M. Lynch#
8/26 Upland Sandr 7/7-8 7/23 8/19-21 Whimbrel thr 7/18, 8/18 7/18, 8/18 7/18, 8/18 7/18, 8/14 8/26 8/30 Hudsonian Go thr 7/4 7/10-8/13 7/16, 8/5 7/17 Marbled God <sup>*</sup> 7/10-8/31 8/29-31 Ruddy Turnst 7/25, 8/9 7/28, 8/14 8/18	Agawam piper Hanscom Northampton P.I. P.I. Dennis Nantucket Newbypt H. MV Westport Chatham (S.B.) WBWS Eastham E. Gloucester odwit Chatham (S.B.) S. Monomoy Newbypt H. P.I. S. Monomoy Newbyt H. P.I. Chatham (S.B.) Winthrop (Snak wit Chatham (S.B.) Rockport island Duxbury B. Hadley Plymouth B. Scituate	$\begin{array}{c} 4\\ 6\\ 1\\ 1\\ 1\\ 8\\ 2, 2\\ 2\\ 1\\ 150, 100\\ 79\\ 1\\ 1\\ 85 \max \\ 27\\ 1.4\\ 1, 3 \ Gree) \\ 1\\ 8 \max \\ 1\\ 4, 27\\ 275, 325\\ 8, 35\\ 28, 107\\ 1\\ 53\\ 46\\ 62\\ \end{array}$	S. Kellogg G. Sadoti A. Magee D'Entremont# D. Furbish D. Lang S. Grinley L. Johnson M. Lynch# B. Nikula M. Lynch# B. Nikula M. Lynch# P. Flood R. Heil 8/14 v.o. R. Merrill v.o. inley, McGrath S. Zendeh# 8/29 v.o. M. Silbert# R. Heil B. Nikula J. Berry# R. Bowes C. Gentes C. Dalton S. Maguire#
8/26 Upland Sandt 7/7-8 7/23 8/19-21 Whimbrel thr 7/14 7/18 7/18, 8/18 7/19 7/23 7/28, 8/14 8/26 8/30 Hudsonian Go thr 7/4 7/10-8/13 7/16, 8/5 7/17 Marbled Godt 7/10-8/13 8/29-31 Ruddy Turnst 7/25, 8/9 7/28, 8/14 7/29 7/30, 8/22 8/9 8/14 8/20 8/23 Red Knot 7/20-8/31	Agawam piper Hanscom Northampton P.I. P.I. Dennis Nantucket Newbypt H. MV Westport Chatham (S.B.) WBWS Eastham E. Gloucester odwit Chatham (S.B.) S. Monomoy Newbypt H. P.I. Chatham (S.B.) W. Tisbury one P.I. Chatham (S.B.) W. Tisbury one P.I. Chatham (S.B.) W. Tisbury one P.I. Chatham (S.B.) S. Chatham (S.B.) Chatham (S.B.) Chatham (S.B.) W. Tisbury one P.I. Chatham (S.B.) S. Chatham (S.B.) Chatham (S.B.) Chatham (S.B.) B. Chatham (S.B.) W. Tisbury one P.I. Chatham (S.B.) Rockport island Duxbury B. Hadley Plymouth B. Scituate Westport	$\begin{array}{c} 4\\ 6\\ 1\\ 1\\ 1\\ 8\\ 2, 2\\ 2\\ 1\\ 150, 100\\ 79\\ 1\\ 1\\ 85 \max \\ 27\\ 1.4\\ 1, 3 \ Gree) \\ 1\\ 8 \max \\ 1\\ 4, 27\\ 275, 325\\ 8, 35\\ 28, 107\\ 1\\ 53\\ 46\\ 62\\ \end{array}$	S. Kellogg G. Sadoti A. Magee D'Entremont# V.O. D. Furbish D. Lang S. Grinley L. Johnson M. Lynch# B. Nikula M. Lynch# P. Flood R. Heil 8/14 v.o. R. Heil 8/14 v.o. R. Merrill v.o. inley, McGrath S. Zendeh# 8/29 v.o. M. Silbert# R. Heil B. Nikula J. Berry# R. Bowes C. Gentes C. Dalton S. Maguire# M. Lynch#
8/26 Upland Sandr 7/7-8 7/23 8/19-21 Whimbrel thr 7/18, 8/18 7/18, 8/18 7/18, 8/18 7/18, 8/14 8/26 8/30 Hudsonian Go thr 7/4 7/10-8/13 7/16, 8/5 7/17 Marbled God <sup>*</sup> 7/10-8/31 8/29-31 Ruddy Turnst 7/25, 8/9 7/28, 8/14 7/29 7/30, 8/22 8/9 8/14 8/18 8/20 8/23 Red Knot	Agawam piper Hanscom Northampton P.I. P.I. Dennis Nantucket Newbypt H. MV Westport Chatham (S.B.) WBWS Eastham E. Gloucester odwit Chatham (S.B.) S. Monomoy Newbypt H. P.I. Chatham (S.B.) Winthrop (Snak wit Chatham (S.B.) Winthrop (Snak wit Chatham (S.B.) Rockport island Duxbury B. Hadley Plymouth B. Scituate Westport Longmeadow	4 6 1 1 H 1-3 1 18 2, 2 2 1 150, 100 79 1 1 85 max 27 1.4 1, 3 Gri e) 1 8 max 1 4, 27 275, 325 8 35 28, 107 1 53 46 62 1	S. Kellogg G. Sadoti A. Magee D'Entremont# V.O. D. Furbish D. Lang S. Grinley L. Johnson M. Lynch# B. Nikula M. Lynch# P. Flood R. Heil 8/14 v.O. R. Merrill 8/14 v.O. R. Merrill 8/14 v.O. R. Merrill 8/14 v.O. R. Metrill B. Nikula J. Berry# R. Heil B. Nikula J. Berry# R. Bowes C. Gentes C. Dalton S. Maguire# M. Lynch# L. Therrien

Red Knot (continued) 7/28, 8/14 Chatham (S.B.)1100, 1600 B. Nikula 7/29, 8/26 16,90 Eastham P. Flood 8/26 8 juv Essex D Brown# 8/27 25 Duxbury B. R. Bowes Sanderling 59,488 7/16, 8ॅ/7 Duxbury B. R. Bowes 25 M. Keleher 7/19 Sandwich 33 7/23 Acoaxet M. Lynch# 7/25, 8/23 45, 100 P.I. R. Heil 7/28, 8/14 Chatham (S.B.)3500, 4000 B. Nikula 8/5 Ipswich (C.B.) 400 J. Berry 8/6, 22 277, 163 P. + F. Vale Revere 8/14 Plymouth B. 1080 C. Dalton 8/22-26 Longmeadow 1 J. Buesdel 8/30 Nahant/Lynn 1700 R. Heil Semipalmated Sandpiper 7/2, 22 Chatham ( 7/13, 8/16 P.I. Chatham (S.B.) 46, 1700 R. Merrill 280, 4200 R. Heil 7/16, 8/18 Scituate 210, 1223 S. Maguire# 7/18 Turners Falls 4 R. Packard 7/23, 8/13 16, 2669 Duxbury B. R. Bowes 7/28, 8/14 Chatham (S.B.)5500, 4800 B. Nikula 7/29, 8/26 3200, 3000 604, 252 P. Flood Eastham 7/31, 8/22 P. + F. Vale Revere 8/6-14 Longmeadow 2-3 C . Gentes 8/20 GMŇWR 15 S. Perkins# Western Sandpiper 7/3, 8/24 S. Monomoy 1,3 Merrill, Ellis 7/4-8/25 Chatham (S.B.) 7 max 7/19 V.O. 7/10 Duxbury B. 1 R. Bowes 7/17-8/31 P.I. 8 max 8/23 V.O. 7/29, 8/26 Eastham  $\frac{3}{7}$ P. Flood 7/30N. Monomoy B. Nikula 8/14 E. Boston (B.I.) S. Zendeh# 8/27 Agawam 2 S. Kellogg Little Stint (details submitted) \* 7/20-23 Chatham (S.B.) R. Clem + v.o. 7/24-25 Chatham (S.B.) 2 ph J. Trimble + v.o. Least Sandpiper 7/7, 8/20 7/15, 8/14 GMNWR 8, 60 USFWS, Perkins Chatham (S.B.) 600, 100 B. Nikula 7/16, 8/13 Duxbury B. 189, 29 R. Bowes 7/17, 8/16 P.I. 240, 160 R. Heil C. Gentes 81 8/14 Longmeadow M. Rines 8/26 33 Lexington 8/27 Hadley 45 C. Gentes White-rumped Sandpiper 7/17 E. Boston (B.I.) 1 J. Sardell 2, 200 7/28, 8/23 P.I. R. Heil 7/28, 8/21 Chatham (S.B.) 12, 400 B. Nikula 7/29, 8/26 1, 140 P. Flood Eastham Revere 7/31, 8/22 3, 17 P. + F. Vale 8/18 J. Buesdel Longmeadow 1 90 8/28 S. Monomoy B. Nikula# Baird's Sandpiper 7/23, 8/18 Chatham (S.B.) 1, 1 Harrington, Brown 7/23, 8/24 Northampton 1, 4 Magee, Gentes 7/23, 8/17-22 P.I. 1, 1-3 McGrath, v.o. 8/17 Muskeget R. Veit 1 8/20 Northfield H. McQueen 1 8/26 R. Merrill S. Monomoy 1 8/27 Chilmark 6 A. Keith# S. Monomoy 8/28 2 B. Nikula# Pectoral Sandpiper 5 max v.o. GMNWR 7/17-8/31 6 max v.o. 2, 8 2 Merrill, Nikula 7/26, 8/28 S. Monomoy 8/23 Northfield J. Smith  $\overline{2}$ 8/26 S. Kellogg Agawam Dunlin 2-4 thr Chatham (S.B.) v.o. 7/1-8/17 P.I. 1 ad v.o. 8/7 Nauset Marsh 20 M. Lynch# **Curlew Sandpiper** 8/17-29 Chatham (S.B.) 1 ph R. Maclean# + v.o. Stilt Sandpiper 7/7-8/31 P.I. 34 max 8/31 vο

7/18-8/28 S. Monomoy	0.000
	8 max 8/28 v.o.
8/21 GMNWR 8/28 Agawam	1 M. Rines# 2 J. Smith
Buff-breasted Sandpiper	2 J. Shihu
7/10 Bolton Flats	1 K. Hartel
8/9-31 P.I.	4 max 8/31 v.o.
8/18 Hadley	1 H. McQueen
8/18-23 Chatham (S.B.)	
8/26 Essex 8/27 Duxbury B.	1 D. Brown# 1 juv R. Bowes
8/27 Chilmark	2 S. Whiting#
8/28 S. Monomoy	7+ B. Nikula#
8/28 Longmeadow	2 J. Smith
8/28 GMŇWR	1 C. Floyd
8/29-30 Hatfield	8 J. Smith
Short-billed Dowitcher	1299
thr P.I. thr Chatham (S.B.)	1288 max 7/25 v.o.
thr Duxbury B.	4200 max 7/28 v.o. 121 max 8/21 R. Bowes
7/7 S. Monomoy	
7/17 GMNWR	10 K. Merrill 10 M. Lynch# 55 E. Ray
7/17 Nantucket	
7/22 N. Monomoy	300+ MAS (Silverstein)
7/25 Newbypt H.	456+ R. Heil
7/29, 8/26 Eastham	600, 120 P. Flood
Long-billed Dowitcher	21 may 8/16 D Hail
7/25-8/31 P.I. 7/30, 8/18 Newbypt H.	21 max 8/16 R. Heil 1, 2 McGrath, Grinley
8/20 Westport	1 ad M. Lynch#
8/26 Essex	1 D. Brown#
Wilson's Snipe	
8/10 P.I.	2 MAS (B. Gette)
8/20 GMNWR	5 S. Perkins#
American Woodcock	
7/10 Shutesbury 7/12 New Braintree	2 K. Weir 3 C. Buelow
7/12 New Braintree 8/8 P.I.	2 K. Weir 3 C. Buelow 2 T. Spahr#
Wilson's Phalarope	2 1. Spain#
7/1 P.I.	3 T. Wetmore
8/4-22 Chatham (S.B.)	3 T. Wetmore 2 v.o.
8/24-28 S. Monomoy	1-2 v.o.
Red-necked Phalarope	
7/2 Chatham (S.B.)	1 R. Merrill
7/17 Tillies Bank	1 J. Wallius
8/16-21 P.I. 8/19, 24 Rockport (A.P.)	1 juv R. Heil 2, 2 R. Heil
8/27 Hydrographer Can	2, 2 K. HCH
	von 200 BBC (Heil)
	yon 200 BBC (Heil)
Red Phalarope 8/27 Hydrographer Can	yon 200 BBC (Hell)
Red Phalarope 8/27 Hydrographer Can Pomarine Jaeger	yon 15 BBC (Heil)
Red Phalarope 8/27 Hydrographer Can Pomarine Jaeger 8/4 Chatham (S.B.)	yon 200 BBC (Heil) yon 15 BBC (Heil) <u>1</u> M. Keleher#
Red Phalarope 8/27 Hydrographer Can Pomarine Jaeger 8/4 Chatham (S.B.) 8/26 Edgartown	yon 15 BBC (Heil)
Red Phalaropé 8/27 Hydrographer Can Pomarine Jaeger 8/4 Chatham (S.B.) 8/26 Edgartown Parasitic Jaeger	yon 15 BBC (Heil) 1 M. Keleher# 3 A. Keith
Red Phalaropé 8/27 Hydrographer Can Pomarine Jaeger 8/4 Chatham (S.B.) 8/26 Edgartown Parasitic Jaeger 7/2, 22, 8/13 Chatham (S.	yon 200 BBC (Heil) yon 15 BBC (Heil) 1 M. Keleher# 3 A. Keith B.) 1, 2, 7 R. Merrill
Red Phalarope 8/27 Hydrographer Can Pomarine Jaeger 8/4 Chatham (S.B.) 8/26 Edgartown Parasitic Jaeger 7/2, 22, 8/13 Chatham (S. 7/22, 8/2 P'town	yon 200 BBC (Heil) yon 15 BBC (Heil) 1 M. Keleher# 3 A. Keith B.) 1, 2, 7 R. Merrill
Red Phalarope 8/27 Hydrographer Can Pomarine Jaeger 8/4 Chatham (S.B.) 8/26 Edgartown Parasitic Jaeger 7/2, 22, 8/13 Chatham (S. 7/22, 8/2 P'town 7/22 Marion	yon 200 BBC (Heil) yon 15 BBC (Heil) 1 M. Keleher# 3 A. Keith B.) 1, 2, 7 R. Merrill
Red Phalaropé 8/27 Hydrographer Can Pomarine Jaeger 8/4 Chatham (S.B.) 8/26 Edgartown Parasitic Jaeger 7/2, 22, 8/13 Chatham (S. 7/22, 8/2 P'town 7/22 Marion 7/30 N. Monomoy 8/4 Wellfleet	yon 200 BBC (Hell) yon 15 BBC (Hell) 1 M. Keleher# 3 A. Keith B.) 1, 2, 7 R. Merrill B. Nikula# 2 B. Kennedy
Red Phalarope 8/27 Hydrographer Can Pomarine Jaeger 8/4 Chatham (S.B.) 8/26 Edgartown Parasitic Jaeger 7/2, 22, 8/13 Chatham (S. 7/22, 8/2 P'town 7/22 Marion 7/30 N. Monomoy 8/4 Wellfleet 8/15, 24 E. Gloucester	yon 200 BBC (Hell) yon 15 BBC (Hell) 1 M. Keleher# 3 A. Keith B.) 1, 2, 7 R. Merrill 2, 2 B. Nikula# 2 B. Kennedy 1 B. Nikula 1 K. Holmes 2, 1 R. Heil
Red Phalaropé 8/27 Hydrographer Can Pomarine Jaeger 8/4 Chatham (S.B.) 8/26 Edgartown Parasitic Jaeger 7/2, 22, 8/13 Chatham (S. 7/22, 8/2 P'town 7/22 Marion 7/30 N. Monomoy 8/4 Wellfleet 8/15, 24 E. Gloucester 8/24 Rockport (A.P.)	yon         200         BBC (Heil)           1         M. Keleher#           3         A. Keith           B.) 1, 2, 7         R. Merrill           2, 2         B. Nikula#           2         B. Nikula#           1         K. Holmes           2, 1         R. Heil
Red Phalaropé 8/27 Hydrographer Can Pomarine Jaeger 8/4 Chatham (S.B.) 8/26 Edgartown Parasitic Jaeger 7/2, 22, 8/13 Chatham (S. 7/22, 8/2 P'town 7/22 Marion 7/30 N. Monomoy 8/4 Wellfleet 8/15, 24 E. Gloucester 8/24 Rockport (A.P.) 8/29 Stellwagen	yon 200 BBC (Hell) yon 15 BBC (Hell) 1 M. Keleher# 3 A. Keith B.) 1, 2, 7 R. Merrill 2, 2 B. Nikula# 2 B. Nikula# 1 B. Nikula 1 K. Holmes 2, 1 R. Heil
Red Phalarope 8/27 Hydrographer Can Pomarine Jaeger 8/4 Chatham (S.B.) 8/26 Edgartown Parasitic Jaeger 7/2, 22, 8/13 Chatham (S. 7/22, 8/2 P'town 7/22 Marion 7/30 N. Monomoy 8/4 Wellfleet 8/15, 24 E. Gloucester 8/24 Rockport (A.P.) 8/29 Stellwagen Jaeger species	yon         200         BBC (Heil)           1         M. Keleher#           3         A. Keith           B.) 1, 2, 7         R. Merrill           2, 2         B. Nikula#           2         B. Kennedy           1         B. Nikula#           2, 1         R. Heil           2         I. Nikula#
Red Phalaropé 8/27 Hydrographer Can Pomarine Jaeger 8/4 Chatham (S.B.) 8/26 Edgartown Parasitic Jaeger 7/2, 22, 8/13 Chatham (S. 7/22 Marion 7/22 Marion 7/30 N. Monomoy 8/4 Wellfleet 8/15, 24 E. Gloucester 8/24 Rockport (A.P.) 8/29 Stellwagen Jaeger species 8/21 Jeffries L.	yon         200         BBC (Heil)           1         M. Keleher#           3         A. Keith           B.) 1, 2, 7         R. Merrill           2, 2         B. Nikula#           2         B. Nikula#           1         K. Holmes           2, 1         R. Heil           2         I. Nisbet           2         J. Nisbet
Red Phalaropé 8/27 Hydrographer Can Pomarine Jaeger 8/4 Chatham (S.B.) 8/26 Edgartown Parasitic Jaeger 7/2, 22, 8/13 Chatham (S. 7/22, 8/2 P'town 7/22 Marion 7/30 N. Monomoy 8/4 Wellfleet 8/15, 24 E. Gloucester 8/24 Rockport (A.P.) 8/29 Stellwagen Jaeger species 8/21 Jeffries L. 8/30 E. Gloucester	yon         200         BBC (Heil)           1         M. Keleher#           3         A. Keith           B.) 1, 2, 7         R. Merrill           2, 2         B. Nikula#           2         B. Kennedy           1         B. Nikula#           2, 1         R. Heil           2         I. Nikula#
Red Phalaropé 8/27 Hydrographer Can Pomarine Jaeger 8/4 Chatham (S.B.) 8/26 Edgartown Parasitic Jaeger 7/2, 22, 8/13 Chatham (S. 7/22 Marion 7/22 Marion 7/30 N. Monomoy 8/4 Wellfleet 8/15, 24 E. Gloucester 8/24 Rockport (A.P.) 8/29 Stellwagen Jaeger species 8/21 Jeffries L.	yon         200         BBC (Heil)           1         M. Keleher#           3         A. Keith           B.) 1, 2, 7         R. Merrill           2, 2         B. Nikula#           2         B. Nikula#           1         K. Holmes           2, 1         R. Heil           16         R. Heil           2         I. Nisbet           2         A. Gurka#           5         R. Heil
Red Phalaropé 8/27 Hydrographer Can Pomarine Jaeger 8/4 Chatham (S.B.) 8/26 Edgartown Parasitic Jaeger 7/2, 22, 8/13 Chatham (S. 7/22, 8/2 P'town 7/22 Marion 7/30 N. Monomoy 8/4 Wellfleet 8/15, 24 E. Gloucester 8/24 Rockport (A.P.) 8/29 Stellwagen Jaeger species 8/21 Jeffries L. 8/30 E. Gloucester Long-tailed Jaeger 8/27 Hydrographer/Veatch Laughing Gull	yon 200 BBC (Heil) yon 15 BBC (Heil) 1 M. Keleher# 3 A. Keith B.) 1, 2, 7 R. Merrill 2, 2 B. Kennedy 1 B. Nikula# 2 B. Kennedy 1 K. Heil 2 I. Nisbet 2 A. Gurka# 5 R. Heil Canyons 4 BBC (Heil)
Red Phalaropé 8/27 Hydrographer Can Pomarine Jaeger 8/4 Chatham (S.B.) 8/26 Edgartown Parasitic Jaeger 7/2, 22, 8/13 Chatham (S. 7/22, 8/2 P' town 7/22 Marion 7/30 N. Monomoy 8/4 Wellfleet 8/15, 24 E. Gloucester 8/24 Rockport (A.P.) 8/29 Stellwagen Jaeger species 8/21 Jeffries L. 8/30 E. Gloucester Long-tailed Jaeger 8/27 Hydrographer/Veatch Laughing Gull 7/15 Sandwich	yon 200 BBC (Hell) yon 15 BBC (Hell) 1 M. Keleher# 3 A. Keith B.) 1, 2, 7 R. Merrill 2, 2 B. Nikula# 2 B. Nikula# 4 K. Holmes 2, 1 R. Heil 16 R. Heil 2 A. Gurka# 5 A. Gurka# 5 M. Keleher#
Red Phalaropé 8/27 Hydrographer Can Pomarine Jaeger 8/4 Chatham (S.B.) 8/26 Edgartown Parasitic Jaeger 7/2, 22, 8/13 Chatham (S. 7/22 Marion 7/22 Marion 7/30 N. Monomoy 8/4 Wellfleet 8/15, 24 E. Gloucester 8/24 Rockport (A.P.) 8/29 Stellwagen Jaeger species 8/21 Jeffries L. 8/30 E. Gloucester Long-tailed Jaeger 8/27 Hydrographer/Veatch Laughing Gull 7/15 Sandwich 7/19 Chatham (S.B.)	yon         200         BBC (Heil)           1         M. Keleher#           3         A. Keith           B.) 1, 2, 7         R. Merrill           2, 2         B. Nikula#           2         B. Nikula#           1         B. Nikula#           1         K. Holmes           2, 1         R. Heil           2         I. Nisbet           2         J. Nisbet           2         A. Gurka#           5         R. Heil           Canyons         4         BBC (Heil)           25         M. Keleher#           250+         R. Heil
Red Phalaropé 8/27 Hydrographer Can Pomarine Jaeger 8/4 Chatham (S.B.) 8/26 Edgartown Parasitic Jaeger 7/2, 22, 8/13 Chatham (S. 7/22, 8/2 P'town 7/22 Marion 7/30 N. Monomoy 8/4 Wellfleet 8/15, 24 E. Gloucester 8/24 Rockport (A.P.) 8/29 Stellwagen Jaeger species 8/21 Jeffries L. 8/30 E. Gloucester Long-tailed Jaeger 8/27 Hydrographer/Veatch Laughing Gull 7/15 Sandwich 7/19 Chatham (S.B.) 7/28, 8/31 P.I.	yon         200         BBC (Heil)           1         M. Keleher#           3         A. Keith           B.) 1, 2, 7         R. Merrill           2, 2         B. Nikula#           2         B. Kennedy           1         K. Holmes           2, 1         R. Heil           2         I. Nisbet           2         A. Gurka#           5         R. Heil           Canyons         4           850+         R. Heil           8, 18         Heil
Red Phalaropé 8/27 Hydrographer Can Pomarine Jaeger 8/4 Chatham (S.B.) 8/26 Edgartown Parasitic Jaeger 7/2, 22, 8/13 Chatham (S. 7/22, 8/2 P'town 7/22 Marion 7/30 N. Monomoy 8/4 Wellfleet 8/15, 24 E. Gloucester 8/24 Rockport (A.P.) 8/29 Stellwagen Jaeger species 8/21 Jeffries L. 8/30 E. Gloucester Long-tailed Jaeger 8/27 Hydrographer/Veatch Laughing Gull 7/15 Sandwich 7/19 Chatham (S.B.) 7/28, 8/31 P.I. 7/29, 8/26 Eastham	yon         200         BBC (Heil)           1         M. Keleher#           3         A. Keith           2, 2         B. Nikula#           2         B. Nikula#           1         K. Holmes           2, 1         R. Heil           16         R. Heil           2         I. Nisbet           2         A. Gurka#           5         R. Gurka#           5         M. Keleher#           200         BBC (Heil)
Red Phalaropé 8/27 Hydrographer Can Pomarine Jaeger 8/4 Chatham (S.B.) 8/26 Edgartown Parasitic Jaeger 7/2, 22, 8/13 Chatham (S. 7/22 Marion 7/22 Marion 7/20 N. Monomoy 8/4 Wellfleet 8/15, 24 E. Gloucester 8/24 Rockport (A.P.) 8/29 Stellwagen Jaeger species 8/21 Jeffries L. 8/30 E. Gloucester Long-tailed Jaeger 8/27 Hydrographer/Veatch Laughing Gull 7/15 Sandwich 7/19 Chatham (S.B.) 7/28, 8/31 P.I. 7/29, 8/26 Eastham 8/20 Acoaxet	yon         200         BBC (Heil)           1         M. Keleher#           3         A. Keith           B.) 1, 2, 7         R. Merrill           2, 2         B. Nikula#           2         B. Nikula#           1         B. Nikula#           2         B. Nikula#           1         B. Nikula#           2         I. Kholmes           2, 1         R. Heil           16         R. Heil           2         I. Nisbet           2         A. Gurka#           5         M. Keleher#           250+         M. Keleher#           8, 18         Heil, Berry           250, 50         P. Flood           73         M. Lynch#
Red Phalaropé 8/27 Hydrographer Can Pomarine Jaeger 8/4 Chatham (S.B.) 8/26 Edgartown Parasitic Jaeger 7/2, 22, 8/13 Chatham (S. 7/22, 8/2 P'town 7/22 Marion 7/30 N. Monomoy 8/4 Wellfleet 8/15, 24 E. Gloucester 8/24 Rockport (A.P.) 8/29 Stellwagen Jaeger species 8/21 Jeffries L. 8/30 E. Gloucester Long-tailed Jaeger 8/27 Hydrographer/Veatch Laughing Gull 7/15 Sandwich 7/19 Chatham (S.B.) 7/28, 8/31 P.I. 7/29, 8/26 Eastham 8/20 Acoaxet 8/24, 30 E. Gloucester	yon         200         BBC (Heil)           1         M. Keleher#           3         A. Keith           B.) 1, 2, 7         R. Merrill           2, 2         B. Nikula#           2         B. Kennedy           1         K. Holmes           2, 1         R. Heil           16         R. Heil           2         A. Gurka#           5         R. Heil           250+         R. Heil           8, 18         Heil, Berry           250, 50         P. Flood           73         M. Lynch#
Red Phalaropé 8/27 Hydrographer Can Pomarine Jaeger 8/4 Chatham (S.B.) 8/26 Edgartown Parasitic Jaeger 7/2, 22, 8/13 Chatham (S. 7/22, 8/2 P'town 7/22 Marion 7/30 N. Monomoy 8/4 Wellfleet 8/15, 24 E. Gloucester 8/24 Rockport (A.P.) 8/29 Stellwagen Jaeger species 8/21 Jeffries L. 8/30 E. Gloucester Long-tailed Jaeger 8/27 Hydrographer/Veatch Laughing Gull 7/15 Sandwich 7/19 Chatham (S.B.) 7/28, 8/31 P.I. 7/29, 8/26 Eastham 8/20 Acoaxet 8/24, 30 E. Gloucester 8/24 Rockport (A.P.) 7/28, 8/31 P.I. 7/29, 8/26 Eastham 8/20 Acoaxet 8/24, 30 E. Gloucester 8/28 Falmouth 8/30 Nahant/Lynn	yon         200         BBC (Heil)           1         BBC (Heil)         1           1         M. Keleher#           3         A. Keith           B.) 1, 2, 7         R. Merrill           2, 2         B. Nikula#           2         B. Nikula#           1         B. Nikula#           1         B. Nikula#           2         I. Nikula#           2         I. Nikula           1         K. Holmes           2, 1         R. Heil           2         I. Nisbet           2         A. Gurka#           5         M. Keleher#           250+         R. Heil           8, 18         Heil, Berry           250, 50         P. Flood           73         M. Lynch#           9, 6         R. Heil           110         R. Heil
Red Phalaropé 8/27 Hydrographer Can Pomarine Jaeger 8/4 Chatham (S.B.) 8/26 Edgartown Parasitic Jaeger 7/2, 22, 8/13 Chatham (S. 7/22, 8/2 P'town 7/22 Marion 7/30 N. Monomoy 8/4 Wellfleet 8/15, 24 E. Gloucester 8/24 Rockport (A.P.) 8/29 Stellwagen Jaeger species 8/21 Jeffries L. 8/30 E. Gloucester Long-tailed Jaeger 8/27 Hydrographer/Veatch Laughing Gull 7/15 Sandwich 7/19 Chatham (S.B.) 7/28, 8/31 P.I. 7/29, 8/26 Eastham 8/20 Acoaxet 8/24, 30 E. Gloucester 8/24, 30 E. Gloucester 8/24, 30 E. Gloucester 8/25 Falmouth 8/30 Nahant/Lynn Franklin's Gull (details subm	yon         200         BBC (Heil)           1         M. Keleher#           3         A. Keith           B.) 1, 2, 7         R. Merrill           2, 2         B. Nikula#           2         B. Kennedy           1         K. Holmes           2, 1         R. Heil           16         R. Heil           2         A. Gurka#           5         R. Heil           Canyons         4           BBC (Heil)           250+         R. Heil           8, 18         Heil, Berry           250+         R. Heil           8, 18         Heil, Berry           9, 6         R. Heil           110         R. Farrell           123 migr         R. Farrell           10         R. Heil
Red Phalaropé 8/27 Hydrographer Can Pomarine Jaeger 8/4 Chatham (S.B.) 8/26 Edgartown Parasitic Jaeger 7/2, 22, 8/13 Chatham (S. 7/22, 8/2 P'town 7/22 Marion 7/30 N. Monomoy 8/4 Wellfleet 8/15, 24 E. Gloucester 8/24 Rockport (A.P.) 8/29 Stellwagen Jaeger species 8/21 Jeffries L. 8/30 E. Gloucester Long-tailed Jaeger 8/27 Hydrographer/Veatch Laughing Gull 7/15 Sandwich 7/19 Chatham (S.B.) 7/28, 8/31 P.I. 7/29, 8/26 Eastham 8/20 Acoaxet 8/28 Falmouth 8/30 Nahant/Lynn Franklin's Gull (details subm 8/6 Chatham (S.B.)	yon         200         BBC (Heil) $1$ BBC (Heil) $1$ M. Keleher# $3$ A. Keith $2, 2$ B. Nikula# $2, 2$ B. Nikula# $2, 2$ B. Nikula# $1$ K. Holmes $2, 1$ R. Heil $2$ I. Nisbet $2$ A. Gurka# $5$ R. Heil           Canyons         4         BBC (Heil) $25$ M. Keleher# $8, 18$ Heil, Berry $25, 50$ P. Flood $73$ M. Lynch# $9, 6$ R. Heil $110$ R. Heil $110$ R. Heil $110$ R. Heil
Red Phalaropé 8/27 Hydrographer Can Pomarine Jaeger 8/4 Chatham (S.B.) 8/26 Edgartown Parasitic Jaeger 7/2, 22, 8/13 Chatham (S. 7/22, 8/2 P'town 7/22 Marion 7/30 N. Monomoy 8/4 Wellfleet 8/15, 24 E. Gloucester 8/24 Rockport (A.P.) 8/29 Stellwagen Jaeger species 8/21 Jeffries L. 8/30 E. Gloucester Long-tailed Jaeger 8/27 Hydrographer/Veatch Laughing Gull 7/15 Sandwich 7/19 Chatham (S.B.) 7/28, 8/31 P.I. 7/29, 8/26 Eastham 8/20 Acoaxet 8/24, 30 E. Gloucester 8/24, 30 E. Gloucester 8/24, 30 E. Gloucester 8/25 Falmouth 8/30 Nahant/Lynn Franklin's Gull (details subm	yon         200         BBC (Heil)           1         M. Keleher#           3         A. Keith           B.) 1, 2, 7         R. Merrill           2, 2         B. Nikula#           2         B. Kennedy           1         K. Holmes           2, 1         R. Heil           16         R. Heil           2         A. Gurka#           5         R. Heil           Canyons         4           BBC (Heil)           250+         R. Heil           8, 18         Heil, Berry           250+         R. Heil           8, 18         Heil, Berry           9, 6         R. Heil           110         R. Farrell           123 migr         R. Farrell           10         R. Heil

				0/10 04	$\mathbf{D} = 1 = 1 \cdot (\mathbf{A} \cdot \mathbf{D})$	220 1000	D 11.1
Little Gull	DI	27		8/18, 24	Rockport (A.P.)		R. Heil
thr	P.I.	3-7	V.O.	8/23	Ipswich (C.B.)	500	J. Berry
7/6	Salisbury	1	S. McGrath	8/29	Stellwagen	400	I. Nisbet
7/7-21	Nantucket	1 1S	R. Veit	8/30		3200	R. Heil
7/11	Nahant	1 2S	L. Pivacek	Common/Ros		10.000	D 171 1
8/8	Newbypt	2 1S	M. Lynch#	8/21	Chatham (S.B.)		B. Nikula
Bonaparte's C		146 200		8/25	Rockport (H.P.)	1300+	J. Berry
	Newbypt H.	146, 300	Heil, Grinley	Arctic Tern	G 14	0.10	D M 11
8/15	Rockport (A.P.)	50 750 · DD	D. Larson	7/5	S. Monomoy	2 1S	R. Merrill
8/22	Revere B.		C (P. + F. Vale)	7/24	Chatham (S.B.)	10 1S	B. Nikula
8/23	Jeffries L.	200	R. Haaseth	8/14	Plymouth B.	2 ad	C. Dalton
8/28	Gloucester	100+	P. + F. Vale	8/30	Nahant/Lynn	1 1S	R. Heil
8/30	Nahant/Lynn	1150	R. Heil	Forster's Terr			
Lesser Black-		10 0	/14 D N'1 1 //	7/1	GMNWR	1	C. Floyd#
7/14-8/31	Chatham (S.B.)			7/23, 8/20		4, 3	M. Lynch#
7/18	Nantucket	6	E. Ray	7/28-30	P.I.	1	T. Wetmore
8/26	Eastham (CGB)		B. Nikula#	8/6	Stellwagen	2	M. Lynch#
8/28	S. Monomoy	2 2 N	B. Nikula#	8/23	Ipswich (C.B.)	1	J. Berry
8/31	P.I.	2 1	MAS (B. Gette)	8/25	Chatham (S.B.)	4	B. Nikula#
Sabine's Gul				8/26	Eastham	3	P. Flood
8/20	Stellwagen	1 ad	F. Atwood	8/28	S. Monomoy	3	B. Nikula#
Black-legged			<b>D</b> 14 11	8/30	E. Gloucester	1	R. Heil
7/28	Chatham (S.B.)		R. Merrill	Least Tern	<b>D</b> .	10 15	<b>N 11</b> 11
8/27	P'town (R.P.)	1 juv	E. Masterson	7/13, 8/16		19, 45	R. Heil
Caspian Tern			-	7/15, 8/7	Sandwich	50,70	M. Keleher#
8/18	Chatham	1	T. + N. Walker	7/23, 8/20		17, 14	M. Lynch#
Royal Tern	a		<b>D</b> 14 11	7/29, 8/26		50, 30	P. Flood
7/11, 18	S. Monomoy	1	R. Merrill	7/31	Chatham (S.B.)		D. Furbish#
7/14, 19	Chatham (S.B.)		Merrill, Heil	8/5	Ipswich (C.B.)	50	J. Berry
8/6	Stellwagen	1	M. Lynch#	8/6	Stellwagen	15+	M. Lynch#
	rn (details submi		N D "	Black Tern	(1 ) (1 D)		
7/21	Chatham (S.B.)	1 ph	N. Bonomo#	thr	Chatham (S.B.)	1-4	v.o.
	<b>rn</b> (no details)		* • • • • •	7/10-24	Nantucket	1-5	E. Ray
8/13	Edgartown	1	J. Alderfer#	7/18	Edgartown	2	D. Swanson
Roseate Tern				7/30, 8/28		3, 100	B. Nikula
thr	Chatham (S.B.)		V.O.	8/14	Plymouth B.	1 ad, 2	juv C. Dalton
7/17, 8/23		8,3	R. Heil	8/15	Barnstable	5	D. Silverstein
7/21	Nantucket	185 J.	Dekker, E. Ray	8/20	Westport	3	M. Lynch#
8/5, 23	Ipswich (C.B.)	2, 5	J. Berry	8/24	Rockport (A.P.)	14	R. Heil
8/14	Plymouth B.	46	C. Dalton	8/31	P.I.	16	J. Berry
8/24	Rockport (A.P.)		R. Heil	Black Skimm			
8/26	Eastham	200+	P. Flood		-27 Chatham (S.E		B. Nikula#
8/30	Nahant/Lynn	10+	R. Heil	7/22	off Saquetucket		E. Banks
Common Terr				8/27	Boston H.	2	R. Donovan
7/17, 8/23		145, 560	R. Heil	Razorbill			
7/21	Nantucket		Dekker, E. Ray	7/1-8/7	Menemsha Pond	1	v.o.
7/22	Chatham (S.B.)		R. Merrill	Black Guiller		1 1	0.5
7/29, 8/26		30, 1800		7/10	Dennis	1 ph	S. Finnegan
7/31	S. Monomoy	5000	D. Furbish#	7/29	Rockport islands	s 2 <sup>-</sup>	J. Berry#
8/14	Plymouth B.	425	C. Dalton	Atlantic Puffi		2	D II ''
8/15, 30	E. Gloucester	73, 1170	R. Heil	8/19	Rockport (A.P.)	3	R. Heil

#### **CUCKOOS THROUGH FINCHES**

This year was especially good for caterpillars and the cuckoos that feast on them. During May, observers noted their best numbers of both Black-billed and Yellow-billed cuckoos since 1981 (this continued right through summer). Quite encouraging was the report of six Short-eared Owls on Tuckernuck Island, perhaps one of the last areas with habitat suitable for this species.

The annual migration of the Common Nighthawk is one of the highlights of late August, but numbers were down from last year, and the hawks were several days late in arriving. The night of August 25 provided the first significant numbers, especially in central Massachusetts and in the Connecticut River valley. Mark Lynch and friends tallied a total of 1522 from August 25-27 at a site at the Worcester Airport. This total was just shy of the 1545 recorded last year at this location. Reports from eastern sections were poor, with the highest number of about 200 birds from Needham on August 29.

Olive-sided Flycatchers have a narrow window for fall migration, from late August through early September. Recent breeding records of this species are sparse, and exclusively

from the western part of the state. This makes the reports in early July and early August from western Massachusetts encouraging.

Another August event is the great masses of swallows that gather on Plum Island, a sight not to be missed; the estimated count, mostly Tree Swallows, reached over 50,000 at mid month. Another massive flock of Tree Swallows gathered at the East Meadows in Northampton, where the total number of birds was estimated at nearly 30,000 individuals! Other high counts include over 6200 Tree Swallows in Westport and over 400 Barn Swallows at Great Meadows in Concord. At a dairy farm in Cheshire over 120 Cliff Swallows were noted on July 4. Although the farmer had counted 152 nests, some may not have been active, and some were occupied by House Sparrows. The status of the Purple Martin in Massachusetts is certainly of concern, and this spring's rain and cold weather was undoubtedly responsible for the poor showing at Plum Island and Daniel Webster Wildlife Sanctuary in Marshfield. A single Purple Martin in Hadley was only the second period record in western Massachusetts since 1992. Yet another great gathering is that of the American Robin, a bird that roosts in large numbers starting in late summer and continuing often into early January. These birds spread out in large roaming flocks, concentrating at food sources. At Bolton Flats, Steve Sutton has been monitoring an evening roost over the past four years. In 2002, 3700 were noted, in 2003, 4200 were tallied, and last year, Steve carefully estimated over 11,000 birds coming into the roost. This year, nearly 6700 were tallied on August 27.

Sedge Wrens were found in three areas, one at Moran Wildlife Management Area in Windsor, another in Stockbridge, and a third that was present along the dike at Great Meadows NWR from August 11 to 30. A total of twenty-nine warbler species plus two Lawrence's hybrids were noted during this period. Among the more interesting were two Golden-winged Warblers, an early Palm Warbler, a Prothonotary Warbler from Plum Island, four Hooded Warblers, and a Yellow-breasted Chat from Chilmark. The only Cerulean Warblers noted were from Mt. Holyoke; the Quabbin birds were not reported. No Cape May Warblers were reported. Clay-colored Sparrows were noted from three areas during the summer, but no confirmed breeding was noted. A Lark Sparrow was noted from Northampton on August 17; the only other August records from western Mass are August 14, 1963, and August 13, 1982. A single Blue Grosbeak was noted in Northampton on the unusually early date of August 8. In the past ten years there have been only five August sightings of Blue Grosbeak, three of which also were in the Connecticut River Valley. Blue Grosbeaks are breeding as close as Windsor, Connecticut, less than fifteen miles south of the Massachusetts border, so these sightings might be post-breeding dispersal. Dickcissels were found in four locations. Interesting also is the single Red Crossbill noted from Montague on July 4, and scattered reports of both Pine Siskins and Evening Grosbeaks. R. Stymeist

Black-bill	ed Cuckoo			7/31	Quabbin (G35)	2	C. Buelow
7/thr	Reports of indiv.	from 11 loca	tions	8/1	Lincoln	1	M. Rines
7/4	Moran WMA	2	M. Lynch#	8/16	Medfield	1	J. O'Connell
7/4	Montague	3	R. Packard	8/27	Petersham	4	R. Packard
Yellow-bil	lled Cuckoo			Short-eare	ed Owl		
7/1-8/1	7 Reports of indiv.	from 10 loca	tions	7/10	Tuckernuck	6	R. Veit
7/4	Cheshire	2	M. Lynch#	Northern	Saw-whet Owl		
7/4	Mashpee	2	M. Keleher	8/4	Amherst	1	H. Lappen
7/23	Barre <sup>*</sup> F.D.	3	S. Sutton	Common	Nighthawk		
Eastern Sc	creech-Owl			8/18, 2	5 ḦRWMA	35, 127	T. Pirro
thr	Reports of indiv.	from 10 loca	tions	8/19, 2	5 Leicester	18, 222	M. Lynch#
8/14	N. Middleboro	2	K. Holmes	8/21	Southwick	105	S. Kellogg
8/16	Medfield	2	J. O'Connell	8/21, 2	5 Northampton	359, 487	T. Gagnon
8/24	Mt.A.	2	R. Stymeist#	8/23, 2	4 Mt.A.	20, 27	R. Stymeist#
8/28	Arlington	pr	D. Diggins	8/25	Worcester	381	J. Shea
Great Hor	ned Owl		00	8/26	Westfield	207	L. Therrien
thr	Reports of indiv.	from 6 locati	ons	8/26	Auburn	230	T. Pirro
Barred Ov	vl			8/26, 2	7 Leicester	800, 482	M. Lynch#
7/6	Lenox	1	R. Laubach	8/29	Needham	200+	D. Gibson#

	1		0/12	0. 11 11	2	
Common Nighthawk (continu 8/29 W. Townsend	425	T. Pirro	8/13 8/28	Stockbridge	2 1	M. Lynch#
8/29 W. Townsend 8/29 Westminster	425	T. Pirro		Ware R. IBA sted Flycatcher	1	M. Lynch#
Whip-poor-will	175	1. 1110	7/2-4	Ipswich	13	J. Berry
7/10, 15 Montague	1	R. Packard	7/3	Quabbin (G10)	6	G. d'Entremont
7/15 Southwick	2	S. Kellogg	7/30	Hingham	Š	G. d'Entremont
Chimney Swift			8/20	Woburn	53	M. Rines#
7/18 Wakefield	54	P. + F. Vale	8/20	ONWR	3	S. Sutton
8/13 Fitchburg	85	S. Sutton	Eastern K			
8/21 Williamsburg	44	R. Packard	thr	P.I.		x 8/16 v.o.
8/22 Magnolia	35	R. Heil	7/16	Bolton Flats	17	M. Lynch#
8/27 Bolton Flats	38	S. Sutton	7/23	Barre F.D.	10	S. Sutton
Ruby-throated Hummingbird	2	C Dualan	8/13	Stockbridge	22	M. Lynch#
7/3 Hardwick 7/30 S. Quabbin	3	C. Buelow	8/20 8/20	Northampton	11 10	T. Gagnon
7/30 S. Quabbin 7/30 Bolton Flats	9 3	M. Taylor S. Sutton	8/20	Woburn Northfield	22	M. Rines# J. Smith
8/5 N. Middleboro	10	K. Holmes	White-eye		22	J. Silini
8/7, 24 Northampton		T. Gagnon	7/23	Westport	1	M. Lynch#
8/21 Marshfield	5, 6 5	D. Furbish		roated Vireo	-	
Red-bellied Woodpecker			7/3	Quabbin (G10)	1	G. d'Entremont
7/10 Quabog IBA	3 3	M. Lynch#	7/23	Barre F.D.	2 3	S. Sutton
8/20 Woburn	3	M. Rines#	7/30	Bolton Flats	3	S. Sutton
Yellow-bellied Sapsucker			7/30	Quabbin Pk.	6	M. Lynch#
7/2 Colrain	4	M. Lynch#	8/19	Northfield	1	R. Packard
7/3 Quabbin (G10) 7/6 Goshen	27 2	G. d'Entremont R. Packard	Blue-head 7/2	Colrain	9	M. Lunah#
7/6 Goshen 7/17 Barre	23	C. Buelow	7/3	Quabbin (G10)	4	M. Lynch# G. d'Entremont
7/24 Williamsburg	3 4	R. Packard	7/9	Petersham	3	C. Buelow
Hairy Woodpecker	•	iti i uonunu	7/23	Barre F.D.	4	S. Sutton
7/3 Quabbin (G10)	10	G. d'Entremont	8/28	Ware R. IBA	3	M. Lynch#
Pileated Woodpecker			Warbling	Vireo		2
7/1 Newbypt	pr n	J. Berry#	7/16	Bolton Flats	12	M. Lynch#
7/3 Quabbin (G10)	22	G. d'Entremont	8/18	Woburn	10	M. Rines
7/5 W. Boxford	2	J. Berry	Philadelph		1	0 17 11
7/9 Amherst 8/21 Quabbin Pk.	2 4	H. Allen	8/24 8/25	Southwick Amherst	1 1	S. Kellogg
Olive-sided Flycatcher	4	M. Lynch#	8/23	Bolton Flats	1	J. Smith S. Sutton
7/2 Hawley	1	M. Lynch#	Red-eyed		1	5. Sutton
8/3 Mt. Holyoke	1	J. Smith	7/2-4	Ipswich	25	J. Berry
8/6 Montague	1	D. Furbish	7/3	Quabbin (G10)	69	G. d'Entremont
8/19 Northfield	1	R. Packard	7/10	Quabog IBA	29	M. Lynch#
8/20 Woburn	1	M. Rines#	7/23	Barre F.D.	58	S. Sutton
8/21 W. Brookfield	1	M. Lynch#		/21 Quabbin Pk.	52, 31	M. Lynch#
8/23 Northampton Eastern Wood-Pewee	1	T. Gagnon	8/28 Fish Crow	Ware R. IBA	36	M. Lynch#
7/2-4 Ipswich	13	J. Berry	7/1	Hadley	2	H. Allen
7/3 Quabbin (G10)	10	G. d'Entremont	7/7	Scituate	$\tilde{6}$	D. Furbish
7/30, 8/21 Quabbin Pk.	11, 12		7/27	Seekonk	8	R. Farrell
8/24 Boxford	7	J. Berry#	7/28	Westford	1	S. Sutton
Yellow-bellied Flycatcher			7/28	Marshfield	14	D. Furbish
8/17 Springfield	1	R. Titus	8/1	Lee	1	R. Laubach
8/19, 27 Northfield		Packard, Taylor	Common		2	M. Louish#
8/21 Quabbin Pk. 8/24 Amherst	4 1	M. Lynch# H. Allen	7/4 7/11	Moran WMA Milton	2 1	M. Lynch# O. Spalding
8/26 S. Monomoy	1	R. Merrill	7/23	Barre F.D.	4	S. Sutton
8/28 Sudbury	1	T. Spahr	7/30	Quabbin Pk.	5	M. Lynch#
8/28 Ware R. IBA	1	M. Lynch#	8/12	Becket	13	R. Laubach
Acadian Flycatcher		•	8/13	Stockbridge	2	M. Lynch#
7/3 Quabbin (G8)	1	G. d'Entremont	8/28	Rutland	1	M. Lynch#
7/28 W. Quabbin	2	J. Smith	Horned La		2.0	
Alder Flycatcher	1	M. Louish#	7/4-8/2 7/24	0 Chatham (S.B.)	3-8	V.O.
7/2 Hawley 7/4 Moran WMA	7	M. Lynch# M. Lynch#	7/24	Sandwich Eastham	6 3 juv	M. Keleher P. Flood
7/13 Southwick	1	S. Kellogg	8/21	Northampton	9	J. Smith
7/16 Bolton Flats	2	M. Lynch#	8/24	S. Monomoy	2	MAS (S. Ellis)
7/30 P.I.	1	S. McGrath	Purple Ma			
Willow Flycatcher			thr	P.I.		x 8/16 v.o.
7/9, 8/25Amherst	6, 1	H. Allen	7/3	Tuckernuck	1	R. Veit
7/16 Bolton Flats	11	M. Lynch#	7/21	Scituate	3	D. Furbish
7/17 GMNWR 7/30 Bolton Flats	7 7+	M. Lynch# S. Sutton	8/1 8/20	DWWS Hadley	8 1	D. Furbish J. Smith
8/2 P.I.	9	R. Heil	Tree Swal		1	J. Shinth
8/10, 18 Northampton	4, 3	J. Smith	thr	P.I.	25,000 ma	x 8/23 R. Heil
8/23 Southwick	2	S. Kellogg	7/17	Essex	100	D. Brown#
Least Flycatcher	-		7/31	Northampton	30,000	A. Magee
7/3 Quabbin (G10)	3	G. d'Entremont	8/20	Westport	6210	M. Lynch#
7/10 New Braintree 8/8 P.I.	1	M. Lynch#	8/28	S. Monomoy	500+	B. Nikula#
8/8 P.I.	1	T. Spahr#				

Northern I	Rough-winged Sw	allow		Sedge Wren		
7/4	Wakefield	2	P. + F. Vale	7/4 Moran WMA	1	M. Lynch#
7/23	Falmouth	8	R. Farrell	8/11-30 GMNWR	1	D. Sibley $+$ v.o.
7/30	S. Peabody	8 3 2	R. Heil	8/13 Stockbridge	1	M. Lynch#
8/7 8/26	Melrose	2	P. + F. Vale S. Kellogg	Marsh Wren 7/1-8/16 P.I.	42 ma	x 8/2 R. Heil
Bank Swa	Agawam llow	1	5. Kenogg	7/3-8/9 Amherst	42 112	H. Allen
thr	P.I.	20-80	v.o.	7/4 Wakefield	11	P. + F. Vale
7/9	Bolton Flats	60	S. Sutton	7/4 Mashpee	6	M. Keleher
7/10	Quabog IBA	15+	M. Lynch#	7/10 Quabóg IBA	8	M. Lynch#
7/16 8/5	Falmouth Ipswich (C.B.)	41 5+	R. Farrell J. Berry	7/13 IRWS 7/17 GMNWR	12+ 23	J. Berry# M. Lynch#
8/7	N. Monomoy	3+ 8+	B. Nikula	Golden-crowned Kinglet	25	M. Lynch#
8/22	Agawam	120	S. Kellogg	7/2 Colrain	14	M. Lynch#
8/26	GMNWR	1	J. Forbes	7/3 Quabbin (G10)	2	G. d'Entremont
Cliff Swal			C. D. I.	7/4 Cheshire	6	M. Lynch#
7/thr 7/4	Concord (NAC) Cheshire	pr n 120	S. Perkins M. Lynch#	7/4 Moran WMA 7/9, 8/24Petersham	5	M. Lynch# Buelow, Packard
7/4	Newbury	5	J. Nelson	8/8 Mt. Greylock	2	R. Laubach
7/24	Fitchburg	5 2 5, 1	S. Sutton	Blue-gray Gnatcatcher		
7/25	Williamsburg	2	R. Packard	7/17 Longmeadow	15	S. Surner
	23 Northampton	5, I 2	Magee, Surner	7/17 W. Newbury	3	D. Chickering
8/1 8/3	Craigville Mt. Holyoke	$\frac{2}{1}$	R. Hodson J. Smith	7/17 GMNWR 7/30 Bolton Flats	5 5	M. Lynch# S. Sutton
8/13	Stockbridge	2 juv	M. Lynch#	7/31 Quabbin (G35)	10	C. Buelow
8/17	DWWS	1	D. Furbish	7/31, 8/20 Woburn	4, 3	M. Rines
8/23	Northfield	12	J. Smith	8/23 Southwick	2	S. Kellogg
Barn Swal		50 190	M. Lynch#	Eastern Bluebird 7/2-4 Ipswich	40	I Domm
	20 Westport 6 Falmouth	50, 180 75, 135	R. Farrell	7/2-4 Ipswich 7/3 Quabbin (G10)	28	J. Berry G. d'Entremont
7/26, 8/		35, 50	R. Heil	7/4 Moran WMA	13	M. Lynch#
7/27	Sandwich	30	D. Furbish	7/9 Holliston	12	J. O'Connell
	26 Leicester	30, 149	M. Lynch#	7/10 Quabog IBA	36	M. Lynch#
8/7 8/11	Nauset Marsh GMNWR	200 400	M. Lynch#	7/13 Southwick Swainson's Thrush	22	S. Kellogg
8/26	Leicester	35	D. Sibley M. Lynch#	7/2 Hawley	1	M. Lynch#
Swallow s		55	1.11 Lynein	7/21 Mt. Greylock	î	R. Laubach
8/9	Newbypt H.	100,000++	R. Heil#	8/26 Amherst	1	J. Smith
8/17 Ded haven	P.I.	50,000++	R. Heil	Hermit Thrush	5	M. Laurah#
7/2	ed Nuthatch Colrain	8	M. Lynch#	7/2 Colrain 7/4, 8/7 Mashpee	5 3, 3	M. Lynch# M. Keleher
7/2-4	Ipswich	10	J. Berry	7/18 Oakham	6	C. Buelow
7/4, 8/7	Mashpee	6, 5	M. Keleher	7/19 Mt. Greylock	6	C. Buelow C. Buelow
7/4	Moran WMA	9	M. Lynch#	7/22 Montague	6	R. Packard
7/8	Montague 6Petersham	4 4 6 Bu	R. Packard lelow, Packard	7/23 Barre F.D. 8/1-18 Sherborn	$^{10}_{5}$	S. Sutton
7/18	Oakham	5	C. Buelow	8/13 Stockbridge	5	E. Taylor M. Lynch#
7/23	Barre F.D.	23 3, 9	S. Sutton	8/24 Southwick	5	S. Kellogg
8/16, 23	3 P.I.	3, 9	R. Heil	Wood Thrush		00
8/24	Paxton	6	M. Lynch#	7/2-4 Ipswich	34	J. Berry
8/26 8/28	Boxford (C.P.) Rutland	4 N 7	MAS (Weaver) M. Lynch#	7/10 Quabog IBA 7/31 Canton	8 4	M. Lynch# G. d'Entremont
8/28	Groton	5	J. Berry#	8/27 Medford	6	M. Rines#
Brown Cre				American Robin	-	
7/23	Barre F.D.	11	S. Sutton	7/30, 8/27 Bolton Flats	2805, 66	25 S. Sutton
7/24 8/28	Williamsburg Ware R. IBA	4 7	R. Packard	Gray Catbird 7/4, 8/7 Mashpee	24, 35	M Kalahar
Carolina V		/	M. Lynch#	7/10 Quabog IBA	63	M. Keleher M. Lynch#
7/23	Acoaxet	3	M. Lynch#	7/23 Westport	86	M. Lynch#
7/24	Southborough		L. E. Taylor	7/24 Brewster	41 b	S. Finnegan# P. + F. Vale
7/30	P.I.	$2 \\ 2 \\ 6$	T. Wetmore	7/30 Lynnfield	30+	
8/3 8/21	Craigville Williamsburg	2	R. Hodson R. Packard	8/2, 23 P.I. 8/2, 27 Worc. (BMB)	155, 62 21, 20	R. Heil J. Liller
8/28	Wakefield	2	P. + F. Vale	Brown Thrasher	21, 20	J. Linei
House Wro	en			7/3 Hardwick	2	C. Buelow
7/10	Quabog IBA	6	M. Lynch#	7/24 Wakefield	4	D. + I. Jewell
8/24	Burlington	) <u>11</u>	M. Rines	8/2 P.I. 8/20 Woburn	18 4	R. Heil M Pines#
8/27 Winter Wr	Gloucester (E.P.)	, ,	S. Hedman	8/20 Woburn Cedar Waxwing	4	M. Rines#
7/2	Colrain	8	M. Lynch#	7/23 Barre F.D.	37	S. Sutton
7/2-4	Ipswich	1 m	J. Berry	8/2, 23 P.I.	130, 95	R. Heil
7/5 7/9	Richmond	$\frac{3}{2}$	C. Buelow C. Buelow	8/13 Stockbridge	46	M. Lynch#
7/9 7/10	Petersham Mt. Greylock	2 6	R. Laubach	8/20 Bolton Flats 8/26 Leicester	33 81	S. Šutton M. Lynch#
7/10	Stoughton	1 0	G. d'Entremont	8/28 Ware R. IBA	65	M. Lynch#
7/12	Southwick	3	S. Kellogg	Blue-winged Warbler		
7/16	Mt. Washington	3	R. Laubach	7/30 Bolton Flats	3	S. Sutton
8/26	Petersham	6	R. Packard	8/21 Quabbin Pk.	4	M. Lynch#

<b>NI I I I I I I I I I </b>	•		-	<b>a</b> 1	-	G 115
Blue-winged Warbler (continu		0 17 11	7/10	Stoughton	7	G. d'Entremont
8/26 Southwick	1	S. Kellogg	7/22	Montague	6	R. Packard
8/29 Lincoln Golden-winged Warbler	1	M. Rines	8/24 8/28	Paxton Rutland	10 11	M. Lynch#
	1	C. Kwong#	Prairie Wa		11	M. Lynch#
8/6-8 Quabbin (G12) 8/23 E. Orleans	1	C. Goodrich	7/3	Wakefield	2	P. + F. Vale
Lawrence's Warbler	1	C. Obbulleli	7/7	Montague	8	R. Packard
7/14 Norfolk	1 m	M. Martinek	7/24	Brewster	2 b	S. Finnegan#
8/20 Tuckernuck	1 f	R. Veit	7/30	Quabbin Pk.	4	M. Lynch#
Nashville Warbler	11	K. ven	8/21	Marshfield	ī	D. Furbish
7/2 Hawley	2	M. Lynch#	8/24	S. Monomoy	1	MAS (S. Ellis)
7/3 Quabbin (G10)		d'Entremont	Palm War		-	
7/7 Montague	1	R. Packard	8/29	Northampton	2	J. Smith
8/25 Granville	1	S. Kellogg	Blackpoll			
8/26 P.I.	1	J. Berry	7/19	Mt. Greylock	5	C. Buelow
8/27 Worc. (BMB)	1	J. Liller#	7/30, 8	/21 P.I.	1 m	Spahr, McGrath
Northern Parula			7/31	Georgetown	1	S. McGrath
8/2-5 P.I.	1	R. Heil	Cerulean '			
Yellow Warbler			7/4	Mt. Holyoke	2	T. Gagnon
7/10 Quabog IBA	15	M. Lynch#		l-white Warbler		~ ~~~
7/30 Bolton Flats	21	S. Sutton	7/3	Quabbin (G10)	8	G. d'Entremont
8/2, 16 P.I.	51, 49	R. Heil	7/19	P.I.	2	T. Wetmore
8/20 Westport	5	M. Lynch#	7/23	Barre F.D.	4	S. Sutton
8/24 Burlington	3	M. Rines	7/30	Wompatuck SP	4 4	G. d'Entremont C. Buelow
Chestnut-sided Warbler 7/2 Colrain	6	M Lunah#	7/31 8/27	Quabbin (G35)	4	S. Hedman
		M. Lynch# d'Entremont	8/27	Gloucester (E.P.) Ware R. IBA	3 8	M. Lynch#
7/3 Quabbin (G10) 7/4 Moran WMA	24 G 7	M. Lynch#	8/28	Sudbury	3	T. Spahr
7/23 Barre F.D.	10	S. Sutton	American		5	1. Span
8/8 Quabbin (G12)	10+	J. P. Smith	7/3	Quabbin (G10)	9	G. d'Entremont
8/27 P.I.	2	M. Garvey	7/30	Bolton Flats	ź	S. Sutton
8/27 Medford	$\overline{2}$	M. Rines#	8/2	P.I.	21	R. Heil
8/28 Ware R. IBA	$\overline{4}$	M. Lynch#	8/20	Arlington	4	K. Hartel
Magnolia Warbler		j	8/20	Woburn	7	M. Rines#
7/2 Colrain	3	M. Lynch#	8/24	Paxton	8	M. Lynch#
7/4 Moran WMA	3 3 7	M. Lynch#	8/27	Medford	9	M. Řines#
7/6 Goshen	3	R. Packard	8/28	Ware R. IBA	10	M. Lynch#
7/18 Oakham		C. Buelow		ary Warbler		-
7/23 Barre F.D.	4	S. Sutton	7/18	P.I.	1	S. McGrath
8/27 Medford	2	M. Rines#		ing Warbler		
Black-throated Blue Warbler	_		7/11	Greenfield	1	C. Buelow
7/2 Colrain	7	M. Lynch#	7/28	Mt. Holyoke	1	S. Surner
7/3 Quabbin (G10)		d'Entremont	Ovenbird		22	<b>X X X X</b>
7/4 Cheshire	2	M. Lynch#	7/2	Colrain	22	M. Lynch#
7/21 Mt. Greylock 7/23 Barre F.D.	8 5	R. Laubach	7/2-4 7/3	Ipswich	53	J. Berry G. d'Entremont
8/24 Paxton	1 f	S. Sutton	7/4	Quabbin (G10) Mashpaa	35 7 5 3 3 3	M. Keleher
Yellow-rumped Warbler	11	M. Lynch#	7/4	Mashpee Cheshire	5	M. Lynch#
7/4 Moran WMA	4	M. Lynch#	8/8	Quabbin (G12)	3	J. P. Smith
7/18 Oakham	4	C. Buelow	8/28	Sudbury	3	T. Spahr
7/19 Mt. Greylock	15	C. Buelow	8/29	Lincoln	3	M. Rines
7/23 Barre F.D.	9	S. Sutton		Waterthrush	2	
7/24 Williamsburg	4	R. Packard	7/2	Hawley	2	M. Lynch#
7/30 Quabbin (G15)	1 ad + 3 yg	M. Lynch#	7/2-4	Ipswich	3 m	J. Berry
8/28 Ware R. IBA	8 50	M. Lynch#	8/2	P.I.	2	R. Heil
Black-throated Green Warbler			8/16	Boston	3	M. Garvey
7/2 Colrain	9	M. Lynch#	8/25	Amherst	6	J. Smith
7/2-4 Ipswich	3 m	J. Berry	8/30	Arlington	3	M. Rines
7/3 Quabbin (G10)	9 G	d'Entremont		Waterthrush		G 77 11
7/7 Sandisfield	5	R. Laubach	7/4	Southwick	3	S. Kellogg
7/10 Mt. Greylock	8	R. Laubach	8/17 Manualiana	Northampton	1	T. Gagnon
7/18 Oakham	5 24	C. Buelow	Mourning		1 m	M. Lynch#
7/23 Barre F.D. 7/31 Quabbin (G35)	~	S. Sutton	7/4	Moran WMA	1 m	
7/31 Quabbin (G35) 8/28 Ware R. IBA	6 7	C. Buelow M. Lynch#	8/6 Common	Montague Yellowthroat	1	D. Furbish
Blackburnian Warbler	/	WI. Lyncin#	7/2-4	Ipswich	20	J. Berry
7/2 Colrain	28	M. Lynch#	7/3	Quabbin (G10)	36	G. d'Entremont
7/3 Quabbin (G10)		d'Entremont	7/4	Wakefield	32	P. + F. Vale
7/4 Moran WMA	3	M. Lynch#	7/4	Moran WMA	42	M. Lynch#
7/7 Sandisfield	33	R. Laubach	7/10	Quabog IBA	79	M. Lynch#
7/18 Oakham	6	C. Buelow	7/23	Barre F.D.	23	S. Šutton
7/23 Barre F.D.	1 f	S. Sutton	8/2, 23	P.I.	27, 24	
8/24 Boston	1	M. Garvey	8/13	Stockbridge	21	M. Lynch#
8/27 P.I.			17 1 1 1 1	Jorblan		
	1	M. Garvey	Hooded W			
Pine Warbler		2	8/17	Nahant	1 m	L. Pivacek
Pine Warbler 7/1 Newbypt	7 m	J. Berry#	8/17 8/20-2	Nahant 1 Chatham (MI)	1 f	G. d'Entremont#
Pine Warbler 7/1 Newbypt 7/2-4 Ipswich	7 m 14	J. Berry# J. Berry	8/17 8/20-2 8/24	Nahant 1 Chatham (MI) Paxton	1 f 1 f	G. d'Entremont# M. Lynch#
Pine Warbler 7/1 Newbypt	7 m	J. Berry#	8/17 8/20-2	Nahant 1 Chatham (MI)	1 f	G. d'Entremont#

Wilson's Washlan			T : 1 '	C		
Wilson's Warbler 8/28 N. Middleboro	1	K. Holmes	Lincoln's 8/23	Southwick	1	S. Kellogg
8/30 Northampton	1	J. Gawienowski	Swamp S		1	5. Kenogg
Canada Warbler	1	J. Gawlenowski	7/4	Wakefield	17	P. + F. Vale
7/2-4 Ipswich	2 m	J. Berry	7/4	Moran WMA	15	M. Lynch#
7/9 Petersham	1	C. Buelow	7/10	Quabog IBA	29	M. Lynch#
7/19 Mt. Greylock	1	C. Buelow	8/13	Stockbridge	13	M. Lynch#
7/23 Barre F.D.	3	S. Sutton		roated Sparrow		
8/14 Arlington	1	R. LaFontaine	7/2	Colrain	4	M. Lynch#
8/20 Woburn	1	M. Rines#	7/4	Moran WMA	20	M. Lynch#
8/21 P.I.	$\frac{1}{2}$	S. McGrath	7/19	Mt. Greylock	4 1	C. Buelow
8/25 Southwick 8/27 Gloucester (E.P.)	1	S. Kellogg S. Hedman	7/23 Dark-eye	Barre F.D.	1	S. Sutton
8/27 Medford	2	M. Rines#	7/2	Colrain	1	M. Lynch#
8/31 Montague	ĩ	H. Allen	7/4	Moran WMA	1	M. Lynch#
Yellow-breasted Chat	•		7/19	Mt. Greylock	20	C. Buelow
8/19-21 Chilmark	1	A. Hartman	8/19-3	0 Boston	1	M. Garvey
Scarlet Tanager				asted Grosbeak		· ··
7/2-4 Ipswich	17	J. Berry	7/3	Quabbin (G10)		d'Entremont
7/3 Quabbin (G10)	16	G. d'Entremont	7/4	Moran WMA	4	M. Lynch#
7/10 Stoughton	5 3	G. d'Entremont	7/5 7/31	W. Boxford	53	J. Berry
7/17 Barre 7/18 Oakham	4	C. Buelow C. Buelow	7/31	Quabbin (G35) Carlisle	5 6+	C. Buelow D. Brownrigg
7/23 Barre F.D.	7	S. Sutton	8/2	P.I.	3	R. Heil
7/30, 8/31 Quabbin Pk.	10, 4	M. Lynch#	8/13	Stockbridge	4	M. Lynch#
8/28 Ware R. IBA	2	M. Lynch#	Blue Gro			j
8/28 N. Middleboro	2	K. Holmes	8/9	Northampton	1	P. Yeskie
Eastern Towhee			Indigo Bu			
7/3 Quabbin (G10)	36	G. d'Entremont	7/4	Moran WMA	5	M. Lynch#
7/23 Barre F.D.	15	S. Sutton	7/19	Mt. Greylock	5	C. Buelow
7/30 Wompatuck SP	33	G. d'Entremont	7/23	Barre F.D.	4	S. Sutton
8/2, 16 P.I.	36, 31	R. Heil	7/30	Quabbin Pk.	4 5 m	M. Lynch#
Chipping Sparrow 7/23 Barre F.D.	57	S. Sutton	7/30 8/5	Bolton Flats Northampton	15 m	S. Sutton J. Smith
7/30 Quabbin Pk.	27	M. Lynch#	8/8	Quabbin (G12)	7	J. P. Smith
8/20 ONWR	35+	S. Sutton	8/27	Bolton Flats	6	S. Sutton
Clay-colored Sparrow	001	51 Button	Dickcisse		0	5. Sutton
7/1-5 P.I.	1 T	. Wetmore + v.o.	7/30	N. Monomoy	1	B. Nikula
7/1-7 Edgartown	2 m	J. Liller + v.o	8/18	Tuckernuck	1	R. Veit
8/17 Northampton	1	J. Smith	8/28	DWWS	1 f	D. Furbish
Field Sparrow		~ ~ .		9 Northampton	1	A. Magee
7/3 Hardwick	3	C. Buelow	Bobolink		21	M. T
7/3 Wakefield	3	P. + F. Vale	7/4	Moran WMA	21	M. Lynch#
7/10 Montague 7/19 Mt. Greylock	16 6	R. Packard C. Buelow	7/7-8	'16 P.I. Hanscom	25, 57 163	R. Heil G. Sadoti
8/1 Craigville	4	R. Hodson	7/10	DWWS	120	D. Furbish
Vesper Sparrow	•	R. Houson		3/23 Leicester	20, 197	M. Lynch#
7/2 Plainfield	2	M. Lynch#	8/15	HRWMA	50	T. Pirro
7/10 Hatfield	4	H. Allen	8/23	Amherst	800	S. Surner
7/12 Sunderland	2	H. Allen	8/28	Northampton	550	T. Gagnon
8/5, 21 Northampton	1	J. Smith		ged Blackbird		
Lark Sparrow	1	T G	7/10	Quabog IBA	155+	M. Lynch#
8/17 Northampton	1	J. Smith		8/27 Bolton Flats	210, 1260	S. Sutton
Savannah Sparrow 7/4 Cheshire	13	M. Lynch#	Eastern N 7/7-8	leadowlark Hanscom	64	G. Sadoti
7/7-8 Hanscom	762	G. Sadoti	7/12	New Braintree		C. Buelow
8/14 Chatham (S.B.)	15	M. Garvey#	7/16	Amherst	5 2	H. Allen
8/26 S. Lancaster	36	S. Sutton	7/23	Westport	$\overline{2}$	M. Lynch#
Grasshopper Sparrow			7/30, 8	3/26 Leicester	15, 3	M. Lynch#
7/2 N. Falmouth	5	R. Farrell	8/8	P.I.	2 juv	T. Spahr#
7/7-8 Hanscom	3 m	G. Sadoti	8/26	S. Lancaster	7	S. Sutton
		M. Lynch#	Common	Grackle		
7/10 New Braintree	1		0/14		200	
7/12 Sunderland	2	H. Allen	8/14	Wakefield	200+	P. Vale
<ul><li>7/12 Sunderland</li><li>7/19 Turners Falls</li></ul>	2 2	R. Packard	8/15	Wakefield HRWMA	400+	T. Pirro
7/12Sunderland7/19Turners Falls8/21Northampton	2 2 1		8/15 8/20	Wakefield HRWMA Bolton Flats	400+ 271	T. Pirro S. Sutton
7/12 Sunderland 7/19 Turners Falls 8/21 Northampton Saltmarsh Sharp-tailed Sparrow	2 2 1	R. Packard S. Surner	8/15 8/20 8/25	Wakefield HRWMA Bolton Flats Leicester	400+	T. Pirro
7/12 Sunderland 7/19 Turners Falls 8/21 Northampton Saltmarsh Sharp-tailed Sparrow 7/2, 17 E. Boston (B.I.) 7/2 W. Barnstable	2 2 1 1,4	R. Packard S. Surner J. Sardell	8/15 8/20 8/25 Orchard	Wakefield HRWMA Bolton Flats Leicester Oriole	400+ 271 173	T. Pirro S. Sutton M. Lynch#
<ul> <li>7/12 Sunderland</li> <li>7/19 Turners Falls</li> <li>8/21 Northampton</li> <li>Saltmarsh Sharp-tailed Sparrow</li> <li>7/2, 17 E. Boston (B.I.)</li> <li>7/2 W. Barnstable</li> <li>7/17 Winthrop (Snake)</li> </ul>	2 2 1 1,4 15 2	R. Packard S. Surner J. Sardell G. Hirth S. Zendeh#	8/15 8/20 8/25 Orchard 0 7/2 7/4	Wakefield HRWMA Bolton Flats Leicester Oriole Duxbury Groveland	400+ 271 173 pr 3	T. Pirro S. Sutton M. Lynch# D. Furbish D. Chickering
<ul> <li>7/12 Sunderland</li> <li>7/19 Turners Falls</li> <li>8/21 Northampton</li> <li>Saltmarsh Sharp-tailed Sparrow</li> <li>7/2, 17 E. Boston (B.I.)</li> <li>7/2 W. Barnstable</li> <li>7/17 Winthrop (Snake)</li> <li>7/17 Falmouth</li> </ul>	$2 \\ 2 \\ 1 \\ 1, 4 \\ 15 \\ 2 \\ 6$	R. Packard S. Surner J. Sardell G. Hirth S. Zendeh# R. Farrell	8/15 8/20 8/25 Orchard 0 7/2 7/4 7/4	Wakefield HRWMA Bolton Flats Leicester Oriole Duxbury Groveland Melrose	400+ 271 173 pr 3 1 m	T. Pirro S. Sutton M. Lynch# D. Furbish D. Chickering D. + I. Jewell
<ul> <li>7/12 Sunderland</li> <li>7/19 Turners Falls</li> <li>8/21 Northampton</li> <li>Saltmarsh Sharp-tailed Sparrow</li> <li>7/2, 17 E. Boston (B.I.)</li> <li>7/2 W. Barnstable</li> <li>7/17 Winthrop (Snake)</li> <li>7/17 Falmouth</li> <li>7/23, 8/20 Westport</li> </ul>	2 2 1 1,4 15 2 6 36,9	R. Packard S. Surner G. Hirth S. Zendeh# R. Farrell M. Lynch#	8/15 8/20 8/25 Orchard 0 7/2 7/4 7/4 7/4 7/24	Wakefield HRWMA Bolton Flats Leicester Oriole Duxbury Groveland Melrose Uxbridge	400+ 271 173 pr 3 1 m 1 ad f	T. Pirro S. Sutton M. Lynch# D. Furbish D. Chickering D. + I. Jewell M. Lynch#
7/12 Sunderland 7/19 Turners Falls 8/21 Northampton Saltmarsh Sharp-tailed Sparrow 7/2, 17 E. Boston (B.I.) 7/2 W. Barnstable 7/17 Winthrop (Snake) 7/17 Falmouth 7/23, 8/20 Westport 7/30 Chatham (S.B.)	$2 \\ 2 \\ 1 \\ 1, 4 \\ 15 \\ 2 \\ 6 \\ 36, 9 \\ 2 \\ CC$	R. Packard S. Surner J. Sardell G. Hirth S. Zendeh# R. Farrell M. Lynch# BC (Silverstein)	8/15 8/20 8/25 Orchard 0 7/2 7/4 7/4 7/4 7/24 8/6	Wakefield HRWMA Bolton Flats Leicester Driole Duxbury Groveland Melrose Uxbridge WBWS	400+ 271 173 pr 3 1 m 1 ad f 1 imm	T. Pirro S. Sutton M. Lynch# D. Furbish D. Chickering D. + I. Jewell M. Lynch# M. Lynch#
<ul> <li>7/12 Sunderland</li> <li>7/19 Turners Falls</li> <li>8/21 Northampton</li> <li>Saltmarsh Sharp-tailed Sparrow</li> <li>7/2, 17 E. Boston (B.I.)</li> <li>7/2 W. Barnstable</li> <li>7/17 Winthrop (Snake)</li> <li>7/17 Falmouth</li> <li>7/23, 8/20 Westport</li> <li>7/30 Chatham (S.B.)</li> <li>8/2 P.I.</li> </ul>	$2 \\ 2 \\ 1 \\ 1, 4 \\ 15 \\ 2 \\ 6 \\ 36, 9 \\ 2 \\ 15 \\ 15 \\ 1, 4 \\ 15 \\ 2 \\ 15 \\ 1, 4 \\ 15 \\ 2 \\ 15 \\ 15 \\ 15 \\ 15 \\ 15 \\ 15 $	R. Packard S. Surner G. Hirth S. Zendeh# R. Farrell M. Lynch# BC (Silverstein) R. Heil	8/15 8/20 8/25 Orchard 0 7/2 7/4 7/4 7/24 8/6 8/20	Wakefield HRWMA Bolton Flats Leicester Driole Duxbury Groveland Melrose Uxbridge WBWS P.I.	400+ 271 173 pr 3 1 m 1 ad f 1 imm 1 m ad	T. Pirro S. Sutton M. Lynch# D. Furbish D. Chickering D. + I. Jewell M. Lynch# M. Lynch# P. + F. Vale
<ul> <li>7/12 Sunderland</li> <li>7/19 Turners Falls</li> <li>8/21 Northampton</li> <li>Saltmarsh Sharp-tailed Sparrow</li> <li>7/2, 17 E. Boston (B.I.)</li> <li>7/2 W. Barnstable</li> <li>7/17 Winthrop (Snake)</li> <li>7/17 Falmouth</li> <li>7/23, 8/20 Westport</li> <li>7/30 Chatham (S.B.)</li> <li>8/2 P.I.</li> <li>8/21 N. Monomoy</li> </ul>	$2 \\ 2 \\ 1 \\ 1, 4 \\ 15 \\ 2 \\ 6 \\ 36, 9 \\ 2 \\ CC$	R. Packard S. Surner J. Sardell G. Hirth S. Zendeh# R. Farrell M. Lynch# BC (Silverstein)	8/15 8/20 8/25 Orchard 0 7/2 7/4 7/4 7/4 7/4 7/24 8/6 8/20 8/21	Wakefield HRWMA Bolton Flats Leicester Oriole Duxbury Groveland Melrose Uxbridge WBWS P.I. Marshfield	400+ 271 173 pr 3 1 m 1 ad f 1 imm	T. Pirro S. Sutton M. Lynch# D. Furbish D. Chickering D. + I. Jewell M. Lynch# M. Lynch#
<ul> <li>7/12 Sunderland</li> <li>7/19 Turners Falls</li> <li>8/21 Northampton</li> <li>Saltmarsh Sharp-tailed Sparrow</li> <li>7/2, 17 E. Boston (B.I.)</li> <li>7/2 W. Barnstable</li> <li>7/17 Winthrop (Snake)</li> <li>7/17 Falmouth</li> <li>7/23, 8/20 Westport</li> <li>7/30 Chatham (S.B.)</li> <li>8/2 P.I.</li> <li>8/21 N. Monomoy</li> <li>Seaside Sparrow</li> </ul>	$2 \\ 2 \\ 1 \\ 1, 4 \\ 15 \\ 2 \\ 6 \\ 36, 9 \\ 2 \\ 15 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10$	R. Packard S. Surner J. Sardell G. Hirth S. Zendeh# R. Farrell M. Lynch# BC (Silverstein) R. Heil B. Nikula	8/15 8/20 8/25 Orchard 0 7/2 7/4 7/4 7/4 7/24 8/6 8/20 8/21 Baltimore	Wakefield HRWMA Bolton Flats Leicester Driole Duxbury Groveland Melrose Uxbridge WBWS P.I. Marshfield e Oriole	400+ 271 173 pr 3 1 m 1 ad f 1 imm 1 m ad 2	T. Pirro S. Sutton M. Lynch# D. Furbish D. Furbish D. + I. Jewell M. Lynch# P. + F. Vale D. Furbish
7/12       Sunderland         7/19       Turners Falls         8/21       Northampton         Saltmarsh Sharp-tailed Sparrow       7/2, 17         7/2       W. Barnstable         7/17       Winthrop (Snake)         7/17       Falmouth         7/23       Westport         7/30       Chatham (S.B.)         8/2       P.I.         8/2       P.I.         8/21       N. Monomoy         Seaside Sparrow       7/23         7/23       Westport	$ \begin{array}{c} 2\\ 2\\ 1\\ 1,4\\ 15\\ 2\\ 6\\ 36,9\\ 2\\ CC\\ 15\\ 10\\ 2\\ \end{array} $	R. Packard S. Surner J. Sardell G. Hirth S. Zendeh# R. Farrell M. Lynch# BC (Silverstein) R. Heil B. Nikula M. Lynch#	8/15 8/20 8/25 Orchard 0 7/2 7/4 7/4 7/4 7/24 8/6 8/20 8/21 Baltimor 7/2-4	Wakefield HRWMA Bolton Flats Leicester Driole Duxbury Groveland Melrose Uxbridge WBWS P.I. Marshfield e Oriole Ipswich	400+ 271 173 pr 3 1 m 1 ad f 1 imm 1 m ad 2 21	T. Pirro S. Sutton M. Lynch# D. Furbish D. Chickering D. + I. Jewell M. Lynch# P. + F. Vale D. Furbish J. Berry
<ul> <li>7/12 Sunderland</li> <li>7/19 Turners Falls</li> <li>8/21 Northampton</li> <li>Saltmarsh Sharp-tailed Sparrow</li> <li>7/2, 17 E. Boston (B.I.)</li> <li>7/2 W. Barnstable</li> <li>7/17 Winthrop (Snake)</li> <li>7/17 Falmouth</li> <li>7/23, 8/20 Westport</li> <li>7/30 Chatham (S.B.)</li> <li>8/2 P.I.</li> <li>8/21 N. Monomoy</li> <li>Seaside Sparrow</li> </ul>	$2 \\ 2 \\ 1 \\ 1, 4 \\ 15 \\ 2 \\ 6 \\ 36, 9 \\ 2 \\ 15 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10$	R. Packard S. Surner J. Sardell G. Hirth S. Zendeh# R. Farrell M. Lynch# BC (Silverstein) R. Heil B. Nikula	8/15 8/20 8/25 Orchard 0 7/2 7/4 7/4 7/4 7/24 8/6 8/20 8/21 Baltimore	Wakefield HRWMA Bolton Flats Leicester Driole Duxbury Groveland Melrose Uxbridge WBWS P.I. Marshfield e Oriole Ipswich	400+ 271 173 pr 3 1 m 1 ad f 1 imm 1 m ad 2	T. Pirro S. Sutton M. Lynch# D. Furbish D. Furbish D. + I. Jewell M. Lynch# P. + F. Vale D. Furbish

Baltimore Oriole (continued)				Red Cross	bill		
8/18	Marlboro	30	T. Spahr	7/4	Montague	1	T. Gagnon
8/23	P.I.	26	R. Heil	Pine Siski	n		
8/27	Medford	11	M. Rines#	7/2	Hawley	1	M. Lynch#
Purple Finch				7/4	Moran WMA	1	M. Lynch#
tĥr	P.I.	2-10	V.O.	8/6-15	Stow	1 f ad	D. Stewart
7/2	Hawley	3	M. Lynch#	Evening C	Grosbeak		
7/4, 8/1	5Gloucester	2, 2	J. Nelson	7/2	Colrain	2	M. Lynch#
7/4	Moran WMA	7	M. Lynch#	7/2	Leverett	3	H. Allen
8/13	Stockbridge	6	M. Lynch#	7/3	W. Quabbin	2	G. d'entremont
8/18	Amherst	2	H. Allen	7/11	Deerfield	2	R. Rancatti
8/28	Ware R. IBA	2	M. Lynch#	8/6	Hawley	6	T. Collins

#### **ABBREVIATIONS FOR BIRD SIGHTINGS**

Taxonomic order is based on AOU checklist, Seventh edition, 44th Supplement, as published in *The Auk* 117: 847-58 (2000); 119: 897-906 (2002); 120: 923-32 (2003).

ABC A.P. A.Pd B. Barre FD B.I. B.R. BBC BMB C.B. CGB C.B. CGB C.P. CCBC Cumb. Farms	Allen Bird Club Andrews Point, Rockport Allens Pond, S. Dartmouth Beach Barre Falls Dam, Barre, Rutland Belle Isle, E. Boston Bass Rocks, Gloucester Brookline Bird Club Broad Meadow Brook, Worcester Crane Beach, Ipswich Coast Guard Beach, Eastham Crooked Pond, Boxford Cambridge Cape Cod Bird Club Cumberland Farms, Middleboro	ONWR P.I. Pd Pont. R.P. Res. S. Dart. S.B. S.N. SSRV SSBC TASL WBWS WMWS Wompatuck SP	Oxbow National Wildlife Refuge Plum Island Pond Provincetown Pontoosuc Lake, Lanesboro Race Point, Provincetown Reservoir South Dartmouth South Beach, Chatham Sandy Neck, Barnstable Sudbury River Valley South Shore Bird Club Take A Second Look Boston Harbor Census Wellfleet Bay WS Wachusett Meadow WS Hingham, Colassett,
DFWS	Drumlin Farm Wildlife Sanctuary	Wore	Scituate, and Norwell
DFWS DWMA DWWS E.P. EMHW F.E. F.P. F.P. G40 GMNWR H. H.P. HRWS L. I. IRWS L. M.V. MAS MBWMA MNWS	Drumin Farm Wildine Sanctuary Delaney WMA Stow, Bolton, Harvard Daniel Webster WS Eastern Point, Gloucester Eastern Mass. Hawk Watch First Encounter Beach, Eastham Fresh Pond, Cambridge Franklin Park, Boston Gate 40, Quabbin Res. Great Meadows NWR Harbor Halibut Point, Rockport High Ridge WMA, Gardner Island Ipswich River WS Ledge Martha's Vineyard Mass. Audubon Society Martin Burns WMA, Newbury Marblehead Neck WS	Worc. Other Abbreviations ad alt b br dk f f f imm juv lt m max migr n ph pl pr	scituate, and Norwell Worcester adult alternate banded breeding dark (morph) female filedgling immature juvenile light (morph) male maximum migrating nesting photographed plumage pair
MSSF Mt.A. NAC Newbypt	Myles Standish State Forest, Plymouth Mt. Auburn Cemetery, Cambr. Nine Acre Corner, Concord Newburyport	pr S v.o. W yg #	summer (1S = 1st summer) various observers winter (2W = second winter) young additional observers

#### HOW TO CONTRIBUTE BIRD SIGHTINGS TO BIRD OBSERVER

Sightings for any given month must be reported in writing by the eighth of the following month, and may be submitted by postal mail or e-mail. Send written reports to Bird Sightings, Robert H. Stymeist, 94 Grove Street, Watertown, MA 02172. Include name and phone number of observer, common name of species, date of sighting, location, number of birds, other observer(s), and information on age, sex, and morph (where relevant). For instructions on e-mail submission, visit: <a href="http://massbird.org/birdobserver/sightings/">http://massbird.org/birdobserver/sightings/</a>.

Species on the Review List of the Massachusetts Avian Records Committee (indicated by an asterisk [\*] in the Bird Reports), as well as species unusual as to place, time, or known nesting status in Massachusetts, should be reported promptly to the Massachusetts Avian Records Committee, c/o Marjorie Rines, Massachusetts Audubon Society, South Great Road, Lincoln, MA 01773, or by e-mail to <marj@mrines.com>.

## Index to Volume 33, 2005

ABOUT THE COVER AND COVER ARTIST William E. Davis, Jr.	
Gray Jay	71
Paul Donahue	72
Northern Mockingbird	135
Barry Van Dusen	136
Golden-winged Warbler	195
Paul Donahue	196
Solitary Sandpiper	263
Paul Donahue	264
Red-breasted Nuthatch .	403
Barry Van Dusen	404
Where to Go Birding	
Horn Pond Reservation, Woburn, Massachusetts	
Marjorie W. Rines	5
Birding the Brattleboro Retreat Meadows	
Hector Galbraith and Whitney Nichols	81
Birding the Kennebunk Plains Wildlife Management Area	
Scott Cronenweth	145
Birding Cape Cod: Wellfleet and Truro	
Cape Cod Bird Club and Massachusetts Audubon Society	205
White Memorial Foundation: Litchfield and Morris, Connecticut	
Buzz Devine and Dwight G. Smith	
Where to Bird in ScituateGlenn d'Entremont	345
Feature Articles	
A Springtime Exploration of Essex County's Coastal Islands,	
with Notes on Their Historical Use by Colonially Nesting Birds	
Jim Berry	
Subtle Thrills: Rewards for the Birding Atlaser Rosalind Renfrew	
J. A. Allen: The Shy and Retiring Giant William E. Davis, Jr.	
Alexander Skutch Remembered Elissa Landre	42
Ninth Annual Report of the Massachusetts Avian	
Records Committee (MARC) Marjorie Rines, Secretary	86
The Nesting of Several Canadian-Zone Species in Essex County	
in 2004, Including the First Nest Record of the Common Raven,	
Corvus corax Jim Berry	
The Loss of Avocet and Curlew Steve Grinley	
The Importance of Naturalists in Identifying Global Warming In Our	
Backyards Abraham J. Miller-Rushing and Richard B. Primack	155

Spring Migration in Eastern Massachusetts: Then (1886)			
and Now Robert H. Stymeist	164		
Birds and Birders in Westport, Massachusetts, Then and Now			
Betty F. Slade and David C. Cole	168		
The Underpinnings of Breeding Behaviors Brandi Van Roo	213		
The "Wellesley Boys" — Contributions to Continental Birding			
David B. Freeland	221		
First Record of Clark's Grebe in Maine and New England			
Peter D. Vickery and Derek J. Lovitch	227		
Reporting Banded Shorebirds: What You Can Do Alan E. Strauss	231		
Wayne Petersen: 2005 Recipient of the American Birding			
Association's Ludlow Griscom Award	234		
Yellow-nosed Albatross at Tuckernuck Island, Massachusetts			
Richard R. Veit	284		
Paintshop Pond, Wellesley Clark Ewer	289		
Wayne Petersen: 2005 Recipient of the American Birding	_0/		
Association's Ludlow Griscom Award	294		
Rarity Envy John Nelson	296		
Mass Audubon's Coastal Waterbird Program, 2005	270		
Andrea Jones and Ellen Jedrey	306		
Take a Second Look: 25 Years and Counting	500		
Maury Hall and Soheil Zendeh	352		
Building a Bird Club in the Digital Age Marjorie Rines	366		
Driving Birds Away Christopher Reed	369		
Bird Conservation and the Important Bird Area (IBA)			
Program: It's All About Habitat Wayne Petersen	372		
Ten Tips for Maintaining Your Birding Partner John Nelson	375		
Ten Tips for Maintaining four Brunng Farmer John Weison	575		
About Books			
Some Natural History History Mark Lynch	45		
Follow That Bird! Magnificent Feathered Obsessions Mark Lynch	113		
The Hills are Alive with the Sound of Thrashers, Titmice,			
and Robins (i.e., Music) Mark Lynch	178		
The Extinction Biz Mark Lynch	239		
The Invisible Man Goes Birding Mark Lynch	310		
Tools Mark Lynch	380		
FIELD NOTES			
	100		
President's Day Special Brooke Stevens	106		
Love is in the Air — But Not in the Water! Paul Roberts	108		
Spotless Robin Jeffrey Boone Miller	176		
"Owl, Duck!" Glenn Williams	176		

Desperate Fishwives	Paul M. Roberts	236
The Stumped Naturalist	Marjorie Rines	300
Storm Bird	Brooke Stevens	301
Massachusetts Division of Fisheries and Wil	dlife	
Management Efforts Create Nesting Habi	tat for Rare Bird	
Dave King, Jeff Col	lins, and Jill Liske-Clark	302
Piping Tern? Arctic Plover? Unusual Species	s Interactions	
On Plymouth Long Beach	Tony Dalisio	303
Song Sparrow Riding on a Chairlift Cable	Jeffrey Boone Miller	304
Food for Later	David Larson	378
AT A GLANCE	Wayne R. Petersen	
Vesper Sparrow		73
Common Goldeneye		137
Ring-necked Duck x Lesser Scaup		197
House Wren		265
Ring-billed Gull		337
Whimbrel		405

405



A RED-TAILED HAWK WITH A GRAY SQUIRREL ATOP THE FAMOUS POMPODORO SCULPTURE IN THE COURTYARD OF THE WORCESTER ART MUSEUM. PHOTOGRAPH BY HONEE HESS, CURATOR OF EDUCATION.

## **ABOUT THE COVER**

## Red-breasted Nuthatch

The tin-horn *yank-yank* sound of the Red-breasted Nuthatch (*Sitta canadensis*) is commonly heard in spruce and fir forests. This tiny, short-tailed nuthatch has a slate gray back, wings, and tail, and a black cap and black line through the eye, separated by a streak of white. Its white lower face grades into underparts of rusty red. As is characteristic of nuthatches, the Red-breasted Nuthatch forages on tree trunks, sometimes with head down, probing the bark for insects with its sharp, sturdy black bill. Despite its broad geographical distribution it has no subspecies and is considered part of a superspecies together with five Eurasian nuthatch species.

Red-breasted Nuthatches are resident breeders in an area that extends from southern Alaska across Canada to Newfoundland. They are found in much of the western third of the United States and in the Northeast. In the Appalachians they are seen as far south as southern North Carolina. They are resident through most of their range, although some northern populations are at least partly migratory. Red-breasted Nuthatches are an irruptive species. Every two to four years large numbers move south in winter, presumably because of food shortages on their breeding grounds. They show up at bird feeders, join mixed-species foraging flocks, and may get as far south as the Gulf Coast. In Massachusetts they are considered uncommon and local breeders and are also uncommon spring migrants, arriving in late April and the first two weeks of May. The fall migration begins in late July and lasts until December, with peak numbers in October and November. During irruption years large numbers may winter in Massachusetts.

A monogamous species, Red-breasted Nuthatches produce a single brood each year. Their preferred habitat is mature coniferous forest, particularly fir and spruce, but also pine and hemlock, and mixed coniferous/deciduous forest. They are found from the seacoast to high elevation montane forest. These nuthatches are highly territorial, especially during the breeding season, when they chase conspecifics entering their territory and all species near the nest. Resident birds are territorial year round. In an aggressive display, males hold their heads upward, crest raised, and flutter their wings, or raise their wings above the head, tail cocked and feathers puffed. They utter *hn-hn-hn* or *grrs* and *churs*. Both sexes have a variety of calls besides the basic *yank-yank*. The male's courtship song has been described as a series of *waa-aa-ns* given with head up and body swaying side to side. Males also engage in courtship flights, fluttering or gliding on outstretched wings. When courting males feed females, the latter receive the food with bill up and wings quivering.

Red-breasted Nuthatches excavate nest cavities in soft, decaying tree snags. The female selects the nest site and does most of the excavation, and the male brings her food while she excavates. The cavity is lined with grass, barks strips, feathers, or fur. Both sexes bring conifer resin to the nest, either in the bill or on fragments of bark. They then smear the resin around the opening of the cavity, sometimes using a piece of bark. Red-breasted Nuthatches are thus one of the few tool-using bird species. The resin presumably deters nest predators and discourages other birds from competing for

the nest site. Experiments with nest boxes have demonstrated that resin deters House Wrens from using the boxes and discourages squirrels and mice. The parent birds fly and dive directly into the nest cavity, thus avoiding resin on their feathers. Females also engage in an aggressive display toward marauding squirrels. They face down toward the squirrel with wings spread and body swaying. This behavior is reported to be successful in driving squirrels away.

The usual clutch is six white or pinkish eggs, spotted red-brown. The female has a well-developed brood patch and does most or all of the incubation until the chicks hatch in about twelve days. Although the young fledge in 18 to 21 days, the adults feed them for several weeks, a diet exclusively of arthropods.

Red-breasted Nuthatches feed mostly on arthropods during the breeding season and on conifer seeds the remainder of the year. Common items include adult beetles, beetle larvae, caterpillars, flies, spiders, and ants. They forage mostly by probing bark on tree trunks and limbs and often probe the base of needle clusters and cones as well. Pounding it into place with their bills, they cache food in bark crevices and in sapsucker holes.

A variety of hawk and owl species prey upon Red-breasted Nuthatches. Nest predators include squirrels, weasels, and jays. During migration many are killed in collisions with buildings or towers. Logging practices that remove snags adversely affect them, as does logging that produces even-aged stands. Their breeding range has expanded, however, in the South and East, where conifer plantations have increased the available habitat. Overall, the species appears to be doing well. We can all look forward to hearing the *yank-yank* of these delightful little birds and enjoying seeing them at our bird feeders in winter.

William E. Davis, Jr.

## About the Cover Artist

Barry Van Dusen's drawings are well known to Bird Observer readers. His work has appeared on its cover more often than that of any artist. Barry has also provided illustrations for several nature books and pocket guides, including publications by the American Birding Association, HarperCollins, and Princeton University Press. His articles and paintings have been featured in Birder's World and Bird Watcher's Digest. Barry was trained as an artist but became drawn to nature subjects through the Massachusetts Audubon Society, an association which began in 1982. Shortly thereafter, he discovered the work of European wildlife artists and adopted their methodology of direct field sketching. His skill as a field artist has enabled Barry to participate abroad in projects sponsored by the Netherlands-based Artists for Nature Foundation. Working with other ANF artists to raise money for conservation of threatened habitats, he has traveled to India, Peru, Ireland, and Spain. Barry was elected a full member of London's Society of Wildlife Artists and is a frequent contributor to its exhibitions. His work has been shown also in Ireland, Scotland, France, and Holland. In the U.S. Barry frequently exhibits in New England and at prestigious national shows such as Birds in Art in Wausau, Wisconsin, and Art of the Animal Kingdom in Bennington, Vermont. Barry resides in the central Massachusetts town of Princeton. His website is <a href="http://www.barryvandusen.com">http://www.barryvandusen.com</a>>. 🔺

## AT A GLANCE

## October 2005



DAVID LARSON

Contortion! That's the name of the game this month . . . but remember John James Audubon became famous by featuring just such improbable poses in his epic artistic renditions of North American birds. Besides, despite the somewhat contorted posture of October's mystery bird, all the information needed to identify the "twisted" creature is present in the picture.

Let's start by noting that the primaries are obviously long and pointed. Even though only one leg is visible under the stretched right wing of the bird, the distance that the bird's tail and body are above the ground makes it obvious that the legs are also long. Since a heron or other long-legged wader would typically stand noticeably taller, the fact that it appears to be standing near the edge of the water makes it reasonable to assume that the bird is probably a shorebird. Although juvenile Blackcrowned Night-Herons are somewhat similarly speckled on the dorsum, they have significantly broader and more rounded wings and do not have barring on their stubby tails.

The only other identification possibilities, other than a shorebird, that might be considered would be something like a juvenile Herring Gull, or possibly a female duck of some sort. Once again the finely barred tail, combined with the broad, pale stripe over the eye (i.e., supercilium) and the pale median crown stripe at once removes all gulls and ducks from the running.

So, we're back to shorebirds. From every indication the bird is fairly large and is clearly not a peep or any of the other small to medium-sized species (e.g., Red Knot, Ruddy Turnstone). The striking head pattern and lack of very long, slim legs combine to take all of the *Tringa* species (i.e., yellowlegs, Solitary Sandpiper, etc.) out of the picture, as well as the long-tailed Upland Sandpiper. Although a dowitcher might at first seem like a possibility, a dowitcher would not have a pale median stripe on the crown, and the scapulars and tertials would not be so obviously dotted and notched with white or buff. Instead, those feathers would be broadly fringed with buff, and the greater primary coverts would not be heavily patterned the way they are on the mystery shorebird. Finally, a dowitcher should display a white stripe running up the back above a black-and-white barred tail — a feature apparently lacking in the pictured shorebird.

With all of the small and medium-sized shorebirds eliminated, we are left only with Marbled Godwit and Whimbrel as viable options. While a Marbled Godwit is relatively plain-colored (i.e., lacking a wing stripe or distinctive tail pattern), a Marbled Godwit does not have the broad supercilium and pale median crown stripe shown by the mystery bird. The combination of features exhibited by our mystery shorebird is only displayed by a Whimbrel (*Numenius phaeopus*). If we could see the pictured bird's bill, I have no doubt that it would be long and prominently decurved. Due to the fresh appearance of the plumage and the extensive white spotting and notching, especially on the scapulars and tertials, it is safe to say that the bird in the picture is a juvenile.

Whimbrels are scarce spring migrants and uncommon to locally common fall migrants in Massachusetts in areas with extensive salt marshes, such as Plum Island and outer Cape Cod. David Larson captured this image of a preening juvenile Whimbrel during fall migration at the Parker River National Wildlife Refuge on Plum Island.

Wayne R. Petersen



WHIMBRELS BY DAVID A. SIBLEY

## AT A GLANCE



DAVID LARSON

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

## **MORE HOT BIRDS**



Also on November 6, Tim Spahr found this second-state-record **Sage Thrasher** (right) at the Parker River NWR, and David Larson took this photograph late that afternoon. The first state record also came from the refuge, forty years ago in 1965. On November 6, 2005, Phil Brown found and photographed this **Ash-throated Flycatcher** (left) on the Parker River NWR on Plum Island.



### BIRD OBSERVER (USPS 369-850) P.O. BOX 236 ARLINGTON, MA 02476-0003

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## CONTENTS

WHERE TO BIRD IN SCITUATE	Glenn d'Entremont	345
TAKE A SECOND LOOK: 25 YEARS AND COUNTING Maury Ho	all and Soheil Zendeh	352
BUILDING A BIRD CLUB IN THE DIGITAL AGE	Marjorie Rines	366
DRIVING BIRDS AWAY	Christopher Reed	369
BIRD CONSERVATION AND THE IMPORTANT BIRD AREA PROGRAM: IT'S ALL ABOUT HABITAT	(IBA) Wayne R. Petersen	372
TEN TIPS FOR MAINTAINING YOUR BIRDING PARTNER	John Nelson	375
FIELD NOTE Food for Later	David Larson	378
About Books Tools	Mark Lynch	380
BIRD SIGHTINGS July/August 2005		387
INDEX TO VOLUME 33, 2005		400
ABOUT THE COVER: Red-breasted Nuthatch	William E. Davis, Jr.	403
ABOUT THE COVER ARTIST: Barry Van Dusen		404
AT A GLANCE	Wayne R. Petersen	405