

Massachusetts Tern Inventory 1999

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Overview

Compiled census results from our cooperator network indicate 1999 was, overall, yet another fine year for terns in Massachusetts. However, the season got off to a very uncertain start with the catastrophic disruption and total abandonment of the huge common tern colony at Plymouth Beach. Without doubt, this was the headline event of the season.

Terns attempting to settle at Plymouth Beach in May were confronted with 2 families of red fox working the beach and by 4 June had completely abandoned the site. With the imminent investment of so much reproductive effort at Plymouth, the terns clearly did the right thing. Since the abandonment occurred at the very start of the season, most of the approximately 5,000 pairs redistributed themselves among 4 other sites, generally eastward as far as Chatham, where they were at least modestly productive.

The breakup of the Plymouth colony, while clearly a shock to the system, served to illustrate a number of important points: (1) the resourcefulness of the terns themselves when confronted with an emergency; (2) the critical importance of maintaining alternative nesting sites for potential occupation at any time; and (3) the consequences of not timely removing mammalian predators at strategically important sites. The dispersal of birds from Plymouth also tested the ability of our census strategy to account for where all these birds went.

The unsettling effect of the Plymouth abandonment notwithstanding, overall numbers of terns rose in 1999, continuing the upward trend of recent years. While many sites reported predation, it was limited to normal levels at most sites. Improved site management practices, favorable habitat conditions and generally good feeding conditions contributed to the positive results. In addition, the 1999 nesting season was a period of exceptionally settled weather conditions.

During the 1999 nesting season, nesting terns were discovered at 65 sites out of 114 sites along the Massachusetts coast where nesting has been recorded since careful record keeping

began in 1970. Common terns entered a seventh consecutive year of expansion. Endangered roseate tern numbers reached their highest point since 1984. Least terns attained an all-time record high.

Agencies in the cooperative network are engaged in a number of large projects. The U.S. Fish & Wildlife Service's Avian Diversity Program at Monomoy National Wildlife Refuge (Monomoy-South, Chatham) entered its fourth year in 1999. Common tern numbers there, partially reflecting refugees from Plymouth, surged to 5,480 pairs (vs. 2,363 a year earlier and 641 in 1997). Bird, Ram and Penikese Islands were consolidated into a Buzzards Bay Tern Restoration Program funded by the New Bedford Harbor Damaged Resource Restoration Trust Fund and coordinated by *MassWildlife*. Both common and roseate tern numbers in this trio of Buzzards Bay sites expanded 14 and 7 percent respectively compared with year earlier numbers. Massachusetts Audubon's Coastal Waterbird Program managed the single largest least tern colony (1,420 pairs) ever recorded in the state at Dunbar Point, Hyannis.

General Methodology

Census of terns in Massachusetts is accomplished using "pairs" as the basic census unit. Generally, complete nest counts are made, at some sites corrected using the Lincoln Index. At a few sites, pair estimates may be extrapolations based on partial nest counts or adult estimates adjusted to pairs by multiplying by 0.8. Where nest counts are made, the number of nests is converted to pairs on a 1:1 ratio. Estimates of the number of pairs reported and discussed in this summary, unless otherwise noted, are "A-period" estimates made during a standard 5-20 June window. "B-period" estimates, as sometimes referenced herein, are estimates made later than the "A-period" counts and not included in the total pair estimates for the state.

Common Tern

Common tern numbers surged ahead strongly for a seventh consecutive year in 1999 to 13,979 pairs at 34 sites, up 6 percent from a year earlier. This represents the highest level achieved since careful record keeping began in 1970. While the overall improvement in numbers was gratifying, the common tern nesting season was an unsettled one. Foxes apparently caused the abandonment of the colony at northern tip of Plymouth Beach, ending its 1992-1998 reign as our largest colony. We believe that substantially all of the estimated 5,000 pairs leaving Plymouth Beach redistributed themselves among some 4 colonies on upper Cape Cod eastward to Chatham. Large numbers certainly moved to the Monomoy Islands, Chatham, where numbers swelled to 5,536 pairs, an increase of 3,162 pairs (134 percent) from 1998. The Monomoy Islands now rank as the largest common tern colony in New England. Other Plymouth refugees appear to have settled at Gray's Beach, Yarmouth (953 pairs, up 836 pairs from 117 a year earlier) and at Nauset-New Island, Eastham (2,176 pairs, up 410 pairs). A fourth group of 495 pairs, also likely relocating birds, established themselves on Nauset Beach in Orleans. Collectively the increases at these four sites, totaled 4,903 pairs.

In the Buzzards Bay group, year-over-year declines in pair counts at Bird Island, Marion (1,887 vs. 1,903) and at Penikese Island, Gosnold (101 vs. 137) were more than offset by an increase at Ram Island, Mattapoisett (1,836 vs. 1,307) for a net 14% increase. Other sites reporting ≥ 100 pairs included Woodbridge Island, Newburyport with 240 (vs. 160 last year), the old pier colony at Central Square Piers in East Boston with 176 pairs (vs. 40) and Haystack Point, Edgartown with 160 pairs (vs. 260). In all, there were 4 sites harboring $>1,000$ pairs and an additional 6 sites with ≥ 100 pairs.

Nine pairs of common terns were discovered nesting at another artificial site in 1999—old rotted pilings on the Mystic River in Everett.

Least Tern

The estimated least tern population increased 11 percent to 3,416 pairs in 1999, establishing a new all-time record. This compared with 3,085 a year earlier and 3,197 in 1997, the previous record high. These results reflect improved site management, ideal habitat conditions, abundant food resources and protracted stable weather conditions during the 1999 nesting season.

Included in this year's record total was the largest single colony ever reported in the state ---at Dunbar Point (Kalmus) in Hyannis, where 1,420 pairs were estimated. Smith Point and Great Point on Nantucket, which hosted large colonies in 1997 and 1998 respectively, reported only token/modest numbers in 1999. Seven other sites reported "A-period" estimates ≥ 100 pairs, including Sylvia State Beach, Oak Bluffs (230), Crane Beach, Ipswich (220), Sandy Neck, Barnstable (148), Cisco Beach, Nantucket (136), Monomoy-South, Chatham (103), Coskata-Coatue, Nantucket (100) and Smith Point/Esther Island, Nantucket (100). A "B-period" estimate of 134 pairs was made at High Head, Truro. Illustrating the fundamental instability of least tern colonies and the low site fidelity of the birds, only 2 of this season's "A-period" sites—Dunbar Point and Monomoy-South—were occupied by the birds in the comparable 1998 period.

Reflecting ideal habitat conditions and perhaps social factors that attracted so many birds to Dunbar Point, least terns nested at fewer sites in 1999---only 44 sites---compared to 57 in 1998.

Roseate Tern

The estimated roseate tern population was up 7 percent in 1999 to 1,810 pairs, the highest number since 1984. Ninety-eight percent of the birds were domiciled at either Bird Island, Marion (1,148 pairs) or Ram Island, Mattapoisett (630 pairs). Despite the enormous increase in the common tern colony at Monomoy-South, only 27 pairs were found within the colony during the "A-period". Hoped for nesting at Penikese Island, Gosnold, where an intensive non-lethal program to discourage nesting gulls on part of the island is in effect, did not materialize this season. However, 5 pairs joined a small nesting group of common terns at Muskeget Island, Nantucket.

Other Species

Nine pairs of ARCTIC TERNS were found nesting in the state in 1999, down from 12 last season. Six of these pairs were at Penikese Island, Gosnold. For the third year in a row, a pair of FORSTER' S TERNS joined nesting common terns in the great salt marshes of Plum Island Sound. This is currently the northernmost breeding location for this species on the Atlantic Coast.

Only 3 pairs of BLACK SKIMMERS—all at Monomoy-South, Chatham--were found nesting in the state in 1999, down from 4 a year earlier and 5 in 1997. LAUGHING GULL numbers increased 13 percent to 804 pairs compared to 709 a year earlier. Ninety-eight percent of the birds---784 pairs---were at Nauset-New Island, Eastham. Elsewhere, 19 pairs nested at Monomoy-South, Chatham and a single pair joined the Gray's Beach colony of common terns in Yarmouth.

I extend my appreciation and thanks to all the agencies and individuals in the reporting network that make these detailed annual summaries possible. Data collected each season contribute to the historical and scientific record and are incorporated into *MassWildlife's* Natural Heritage Database. It is through this database that records translate into real environmental action by provisions of the Massachusetts Wetlands Protection Act (MGL, Ch. 131, Sect. 40A) and the Massachusetts Endangered Species Act (MGL, Ch. 131 A).

Table 1. RESULTS OF THE 1999 MASSACHUSETTS TERN INVENTORY. All results expressed in pairs. Data are collected for all species for the period 5-20 June. Colony numbers follow or are adapted from Erwin and Korschgen (1979). Numbers in parentheses reflect numbers of pairs recorded outside the census period ("B-counts") and are not included in the total pairs. Shaded sites either were not checked or were checked and no activity was detected in 1999.

COLONY NUMBER	COLONY NAME, TOWN	Censusing Agency ¹	ROST	COTE	ARTE	LETE	BLSK	LAGU
324000	Miscellaneous sites, map 324 ²	---						
324007	Woodbridge I., Newburyport	USFWS		240				
324007.1	Blackwater River Group, Salisbury ³	---						
324007.2	Chaces I., Newbury ²	USFWS						
324008	Plum I. River Group, Newbury (marshes-incl. Pine I., Little Pine I. and Jericho Creek) ⁴	USFWS		8				
324009	Parker River Group (marshes)	USFWS		21				
324009.1	Plum I. Beach, Newbury-Rowley-Ipswich	USFWS				10		
324010	Roger I., Ipswich ²	ECG						
324010.2	Bagwell I., Ipswich	ECG		18				
324010.3	Rowley Salt Marshes	ECG		14				
324010.4	Lords I., Ipswich	ECG		20				
324010.5	Ipswich Salt Marshes	ECG		20				
324011	Crane Beach, Ipswich	TTOR				220		
324038	Tinker's I., Salem	MAS		14				
324038.1	Saugus River Bridge, Lynn-Revere	Zendeh		42				
324040.1	Mystic River, Everett/Boston	Zendeh		9				
324040.3	Belle Isle Marsh, Boston ²	Zendeh						

COLONY NUMBER	COLONY NAME, TOWN	Censusing Agency ¹	ROST	COTE	ARTE	LETE	BLSK	LAGU
324040.6	Central Square Piers, East Boston	Zendeh		176				
324042	Snake I., Winthrop	Zendeh		24				
324042.1	Logan Airport, Boston ²	Smith						
324049.1	Lovell I., Boston	MAS				15		
324052.2	Rainsford I., Boston	MAS				9		
324053	Hog I. Pier ("Spinnaker I."), Boston	MAS		88				
324057	North R. Mouth, Scituate	MAS				44		
324058	Duxbury Beach, Duxbury	MAS				2		
324060	Wood End-Long Point Area, Provincetown	NPS				10		
324061	Race Point Light Area, Provincetown ²	NPS						
324062	Race Point CG Station, Provincetown ²	NPS						
324062.1	Mission Bell, Provincetown	NPS		(1)		43(87)		
324062.2	Tasha's Area, Provincetown ²	NPS						
324062.3	Beach Point, Pilgrim Beach, Provincetown ²	MAS						
324063	High Head, Truro	NPS				63(134)		
352000	Miscellaneous sites, map 352 ²	---						
352001	Plymouth Beach, Plymouth	MAS			1	45		
352001.1	Ellisville Harbor, Plymouth	MAS				8		
352002	N. Sandwich Area (Town Beach-Springhill and Old Harbor Beaches	MAS		1		23		

COLONY NUMBER	COLONY NAME, TOWN	Censusing Agency ¹	ROST	COTE	ARTE	LETE	BLSK	LAGU
352003	Scorton Creek, Sandwich	MAS				7		
352004	Craigville-Long Beach, Barnstable	MAS		12				
352004.1	Squaw I., Barnstable ²	MAS						
352005	Dunbar Point (Kalmus Park), Barnstable	MAS		2		1,420		
352005.1	Great I., Yarmouth ²	MAS						
352006	Sandy Neck, Barnstable	Barnstable				148		
352007	Gray's Beach, Yarmouth	MAS	(1)	953		6		1
352008	West Dennis Beach, Dennis	MAS		7				
352009	Nauset-Orleans (Chatham line north to Nauset Harbor Inlet)	Orleans		495		62		
352010	Nauset-New Island, Orleans	NPS	(3)	2,176	2			784
352011	Nauset-Eastham("Coast Guard Beach" & "Plover I.")	NPS				40		
352012	Marconi Beach, Wellfleet	NPS				51		
352012.1	Pamet Harbor Bar, Truro	MAS		3		38		
352012.2	Great I.-Jeremy Pt., Wellfleet	NPS				83		
352013	Nauset-Chatham (incl. S. Beach I.)	MAS/DFW				4		
352013.1	Tern I., Chatham ²	MAS						
352014	Harding's Beach and Point, Chatham ²	MAS						
352015	Monomoy-North, Chatham	USFWS		56				
352016	Monomoy-South, Chatham	USFWS	27	5,480		103	3	19

COLONY NUMBER	COLONY NAME, TOWN	Censusing Agency ¹	ROST	COTE	ARTE	LETE	BLSK	LAGU
352017	Dead Neck-Sampson I., Barnstable	MAS		24		87		
352017.1	Popponesset Spit, Mashpee ²	MAS						
352018	South Cape Beach-Waquoit, Mashpee ²	DEM						
352018.1	Washburn I., Falmouth ²	DEM						
352020	Great Point (including "The Galls"), Nantucket	TTOR				4		
352021	Coskata-Coatue, Nantucket	TTOR		1		100		
352021.1	Squam Head & Pond, Nantucket ²	NCF						
352022	Quidnet (including Sesachacha Pd.), Nantucket	MAS				45		
352023	Siasconset (Sankaty-Low Beach), Nantucket	NMD NLB				10		
352023.1	Tom Nevers Head, Nantucket ²	NMD						
352024	Quaise, Nantucket	MAS				(17)		
352025.1	Surfside, Nantucket ²							
352025.2	Cisco Beach, Nantucket	NCF				136		
352025.3	Eel Point, Nantucket ²	NCF						
352026	Esther I.-Smith Pt., Nantucket	NMD				100		
352027	Tuckernuck I., Nantucket	Veit				75		
352028	Muskeget I., Nantucket	Veit	5	40		35		
352030	Cape Poge Elbow, Edgartown ²	TTOR						

COLONY NUMBER	COLONY NAME, TOWN	Censusing Agency ¹	ROST	COTE	ARTE	LETE	BLSK	LAGU
352031	Little Neck, Edgartown ²	TTOR						
352031.1	East Beach-Dike Bridge, Edgartown ²	TTOR						
352032	Wasque, Edgartown ²	TTOR						
352033	Norton Beach ("Katama"), Edgartown ²	Dukes Co.						
352033.1	Edgartown Great Pd., Edgartown ²	SMF						
352034	Sarson I., Sengekontacket Pd., Oak Bluffs ²	MAS						
352034.1	Haystack Pt., Sengekontacket Pd., Edgartown	SMF		160				
352034.2	Little Beach, Edgartown	SMF				(28)		
352035	Sylvia State Beach, Oak Bluffs	Dukes Co.				230		
352035.1	Harthaven Beach, Oak Bluffs	SMF				2		
352036	Watcha Pd., West Tisbury ²	SMF						
352036.1	Oyster Pd., Edgartown	SMF				2		
352037	Quansoo Area (Tisbury Great Pond, W. Tisbury & Black Point Pond, Chilmark) ²	SMF						
352037.2	Chilmark Pd., Chilmark ²	SMF						
352038	Lobsterville (incl. "Dogfish Bar"), Gay Head ²	SMF						
352038.1	Menemsha Pd., Gay Head-Chilmark (encompasses Edys I., Chilmark) ²	SMF						
352038.2	Stonewall Beach, Chilmark ³	SMF						

COLONY NUMBER	COLONY NAME, TOWN	Censusing Agency ¹	ROST	COTE	ARTE	LETE	BLSK	LAGU
352038.3	Long Beach, Gay Head & Squibnocket Beach, Chilmark ²	SMF						
352039	Nomans Land, Chilmark ³	USFWS						
352040	Tashmoo, Tisbury	SMF				19		
352040.1	Eastville Beach, Oak Bluffs	Dukes Co.				10		
352040.2	Lamberts Cove-James Pd., W. Tisbury ²	SMF						
352041	Nashawena I., Gosnold	MDFW		48		5		
352041.1	Pasque I., Gosnold	MDFW				8		
352042	Penikese I., Gosnold	MDFW		101	6			
352042.1	Cuttyhunk I., Gosnold	MDFW		2		32		
352043	Ram I., Mattapoissett	MDFW	630	1,887				
352043.1	Strawberry Pt., Mattapoissett	MDFW				1		
352044	Fish I., Fairhaven ²	MDFW						
352044.1	Long I., Fairhaven ³	MDFW						
352044.2	West I., Fairhaven ²	LCE						
352044.3	Winsegansett Hts., Fairhaven ²	LCE						
352044.5	So. Shore Marshes WMA, Little Bay, Fairhaven ²	MDFW						
352045	Bird I., Marion	MDFW	1,148	1,836				
352045.1	Salter's Pt. and Pd., Dartmouth ²	LCE						
352045.2	Demarest Lloyd State Park, Dartmouth ²	LCE						

COLONY NUMBER	COLONY NAME, TOWN	Censusing Agency ¹	ROST	COTE	ARTE	LETE	BLSK	LAGU
352046	Barney's Joy-Allen's Pd.-Little Beach, Dartmouth	LCE		1		61		
352046.1	Gooseberry Neck, Westport ²	LCE						
352047.1	Speaking Rock, Westport ²	LCE						
352048	Cockeast Pd.-Acoaxet, Westport ³	LCE						
352048.1	Richmond Pd., Westport ²	RINHP						
352048.2	Horseneck Beach, Westport ²	LCE						
352054.1	Bay Point, S. Swansea ²	Waring						
	TOTAL 1999 NESTING PAIRS:		1,810	13,979	9	3,416	3	804
	TOTAL 1998 NESTING PAIRS:		1,693	13,214	12	3,085	4	709
	PERCENT + (-) FROM 1998:		7	6	(25)	11	(25)	13
	TOTAL 1999 NESTING SITES:		6	34	3	44	1	3

¹ in addition to the names of towns and individuals, the following abbreviations are used: DEM=Massachusetts Department of Environmental Management; DFW=Massachusetts Division of Fisheries & Wildlife (*MassWildlife*); ECG=Essex County Greenbelt Assoc.; LCE=Lloyd Center for the Environment; MAS=Massachusetts Audubon Society—Coastal Waterbird Program; NCF=Nantucket Conservation Foundation; NLB=Nantucket Land Bank; NMD=Town of Nantucket Marine Department; NPS=National Park Service; RINHP=Rhode Island Natural Heritage Program; SMF=Sheriff's Meadow Foundation; TTOR=The Trustees of Reservations; and USFWS=United States Fish & Wildlife Service.

² no nesting activity found

³ colony not checked in 1999

⁴ a single pair of Forster's Terns also present at this location; no nest located