

INVENTORY OF TERNS, LAUGHING GULLS, AND BLACK SKIMMERS NESTING IN MASSACHUSETTS IN 2016



A Common Tern feeding a fledgling at Ram Island, Mattapoisset, MA. © Bill Byrne/MassWildlife, 2016.

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MASSWILDLIFE

Abstract

Cooperators in Massachusetts surveyed approximately 209 coastal sites in 2016 for the presence of breeding Roseate Terns (*Sterna dougallii*), Common Terns (*Sterna hirundo*), Arctic Terns (*Sterna paradisaea*), Least Terns (*Sternula antillarum*), Laughing Gulls (*Larus atricilla*), and Black Skimmers (*Rhynchops niger*). Of approximately 177 sites with a history of nesting by these species, 80 sites were occupied by nesting birds. Compared to 2015 numbers, total nesting pairs of Roseate Terns (**2,066 pairs**) increased 7%, Least Terns (**3,230 pairs**) decreased 12%, and Laughing Gulls (**2,751 pairs**) increased 26%. Common Terns (**17,175 pairs**), Arctic Terns (**0.5 pairs**), and Black Skimmers (**6 pairs**) were roughly stable. Earliest and median first egg dates were 6 May/18 May for Common Terns, 12 May/27 May for Least Terns, 15 May/19 May for Roseate Terns, 20 May/20 May for Laughing Gull, and 26 May/26 May for Black Skimmer.

Introduction

Coastal waterbirds are a vulnerable group of species. Of Massachusetts' four nesting tern species, the Common Tern, the Least Tern, and the Arctic Tern are listed as "Special Concern" pursuant to the Massachusetts Endangered Species Act. The Roseate Tern is listed as "Endangered" pursuant to both the Massachusetts and U.S. Endangered Species Acts.

Terns, Laughing Gulls, and Black Skimmers in Massachusetts are protected and monitored by an extensive network of cooperators throughout the state. These cooperators provide census data and other reproductive information to the Massachusetts Division of Fisheries & Wildlife (MassWildlife). This allows wildlife managers to determine abundance and status of, and threats to, these species.

This report summarizes data on distribution, abundance, and productivity of terns, Laughing Gulls, and Black Skimmers in Massachusetts during the 2016 nesting season.

Methods

Sites surveyed: Cooperators are asked to survey all sites at which terns, Laughing Gulls, and Black Skimmers have been known to nest. Some cooperators also survey additional sites with no history of nesting by these species. Any new nesting sites are reported.

Timing of Census: Depending upon the species, either one or two censuses are conducted. The "A-period count" (or "peak season" count) is conducted between 5 and 20 June. Laughing Gulls, Black Skimmers, and all tern species are censused during the A-period. For Roseate and Common Terns, the count is ideally conducted as closely as possible to the first hatch. Laughing Gull and Black Skimmer counts are timed to be coincident with Common Tern counts, and Arctic Tern counts with counts of any sympatric nesting seabird species. Least Tern colonies ideally are visited multiple times during the A-period window, and maximum estimates are reported. The "B-period count" (or "post-peak" count) is conducted after 20 June. For Roseate Terns, the B-count is timed 25 days after the A-count. For Arctic Terns and Black Skimmers, which nest in very low numbers in the state, any additional pairs that appear after 20 June are reported. A B-count for Least Terns is not necessary unless there is a significant change in

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numbers from the A-count, or a site that was not used during the A-period window was used after 20 June. Because Least Terns frequently shift among sites in response to disturbance, B-counts do not contribute to the overall census numbers (to avoid double-counting the same birds); however, the B-count does document use of the site. B-counts are not required for Common Terns or Laughing Gulls.

Survey Method: Observers are asked to classify their survey method as one of the following: Nest Count, Partial/Extrapolated Nest Count, Incubation Count, or Adult Count. All counts are expressed as “number of pairs”. Nests must contain at least one egg to be counted, unless it is obvious that chicks have already hatched. Empty scrapes and abandoned nests are not counted, unless they are known to have been active during the census window. Adults are only counted if it appears that they are nesting at a site; birds that are not suspected to be nesting at a site (*e.g.*, resting or feeding birds) are not counted as nesting pairs. The number of breeding adults present (*i.e.*, in the nesting area, not loafing on the shoreline) is multiplied by a correction factor of 0.8 to arrive at the number of pairs.

Survey Quality and Productivity Estimate: Observers are asked to rate the quality of their survey as Low Confidence, Reasonable Confidence, or High Confidence. Observers also provide a qualitative assessment of productivity: none, poor, fair, good, or excellent. In a few cases, typically for Roseate and Common Terns at large colonies where detailed monitoring occurs, quantitative estimates of productivity (*e.g.*, fledglings/nest) are provided. In **Appendix A**, productivity assessments expressed as ranges indicate uncertainty; multiple estimates separated by commas represent values for different subcolonies within a site.

Data Reporting and Quality Control: A majority of observers enter data into the Tern Online Data Entry System (TERNODES); others complete a standard “Massachusetts Tern Census Form”. Data requested includes: monitoring effort; management and research actions/needs; dates of pre-A-, A-, and B-counts; number of pairs observed during counts; survey method; quality of survey; qualitative and quantitative productivity estimates; number of fledglings; method of determining productivity; dates of first adults observed, first eggs laid, first eggs hatched, first young fledged, and last young observed; comments; and other site uses. Maps delineating the nesting areas are submitted. All data are reviewed by MassWildlife. If necessary, observers are contacted to obtain missing data and clarify ambiguities. When the needed information could not be obtained, best professional judgment was used to assign final values or data were noted as preliminary in **Appendix A**.

Notes on Chronology: “Date first adults observed” is not synonymous with date adults arrive on site, because adults may not be observed when they first arrive: frequency of site visits prior to egg-laying is relatively low and attendance of birds at colony sites early in the nesting season is sporadic. Similarly, “Last date young observed” is not synonymous with last fledgling departure date: the date the last fledgling departs may be missed (*e.g.*, due to low frequency of monitoring late in the season); fledglings at the site may not have hatched there (*e.g.*, some may just be staging); and, in some colonies, no young survive to fledge (*i.e.*, the date could refer to the last date that live, unfledged chicks were seen). Clarification of terminology in TERNODES in the future will help to reduce ambiguities.

When dates were reported as a range, the median of the date range was used in calculations if the range spanned five days or fewer. Ranges spanning greater than 5 days were excluded from analyses. Median dates refer to the among-site values (*i.e.*, the median of the “first” or “last” dates reported by different sites), not the within-site median dates for individual birds or nests.

Results & Discussion

In 2016, 177 sites with a history of nesting terns, Laughing Gulls, or Black Skimmers were surveyed. Eighty sites were occupied by nesting birds of one or more of these species. Results for each site are summarized in **Appendix A**. Thirty-two additional sites with no record of nesting terns, Laughing Gulls, or Black Skimmers were surveyed (**Appendix B**); no nesting birds were recorded at these sites in 2016.

Nesting Chronology

Timing of nesting season events is summarized in **Table 1**.

Table 1. Nesting chronology for terns, Black Skimmers, and Laughing Gulls in Massachusetts in 2016.

2016		Roseate Tern	Common Tern	Arctic Tern	Least Tern	Black Skimmer	Laughing Gull
Date first adults observed	Earliest date (site)	22-Apr (Bird I., Marion)	22-Apr (Bird I., Marion)	17-May (Penikese I., Gosnold)	1-May (Cape Pogue Elbow/The Narrows, Edgartown)	10-May (Little Beach/Eel Pd., Edgartown)	7-May (S. Monomoy I., Chatham)
	Median ^a (n) ^b	5-May (6)	10-May (23)	17-May (1)	14-May (67)	10-May (2)	7-May (1)
Date first eggs laid	Earliest date (site)	15-May (Bird I., Marion & Ram I., Mattapoissett)	6-May (Haystack I., Edgartown)	none laid	12-May (Popponeset Spit, Mashpee)	26-May (Little Beach/Eel Pd. & Norton Pt. Beach, Edgartown)	20-May (S. Monomoy I., Chatham)
	Median (n)	19-May (6)	18-May (14)	n/a ^c	27-May (57)	26-May (2)	20-May (1)
Date first chicks hatched	Earliest date (site)	6-Jun (Bird I., Marion & Ram I., Mattapoissett)	31-May (Bird I., Marion)	n/a	10-Jun (Western Ave., Nantucket)	25-Jun (Norton Pt. Beach, Edgartown)	25-Jun (S. Monomoy I., Chatham)
	Median (n)	11-Jun (5)	12-Jun (9)	n/a	22-Jun (41)	25-Jun (1)	25-Jun (1)
Last date young observed	Latest date (site)	4-Sep (Bird I., Marion)	7-Sep (Bird I., Marion)	n/a	14-Sep (Tern I., Chatham)	nd ^d	nd
	Median (n)	4-Sep (1)	12-Aug (4)	n/a	15-Aug (35)	nd	nd

^a Median dates refer to the among-site values (i.e., the median of the "first" or "last" dates reported by different sites), not the within-site median dates for individual birds or nests.

^b n – number of sites

^c n/a – not applicable

^d nd – no data

Abundance and Distribution

Roseate Tern: Roseate Terns increased 6.6% to **2,066 pairs** (vs. 1,938 pairs in 2015). The Northeast U.S. population (Maine through New York) increased 3.0% to 4,021 pairs (vs. 3,901 pairs) (Roseate Tern Recovery Team, unpubl. data).

Roseates nested at five or six sites in 2016. The largest colony was at Bird I., Marion (1,153 vs. 1,127); productivity was 1.16 fledglings/nest. Ram I., Mattapoissett was the second-largest site at 886 pairs (vs. 735); productivity was 1.49 fledglings/nest. S. Monomoy I., Chatham supported 12 pairs (vs. 11);

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productivity was 1.17 fledglings/pair. Penikese I., Gosnold supported 11 pairs (vs. 23); productivity was only 0.10 fledglings/nest due to intense predation. Four pairs (vs. 35) nested at Norton Point Beach, Edgartown; productivity was poor. Fifty pairs (vs. 7) were present at Little Beach/Eel Pond, Edgartown prior to the A-period and eggs were suspected around 18 May; however, the Roseates deserted by 1 June, possibly due to disturbance or predation by skunks.

The two largest A-period colonies supported 99% of the state's Roseate Tern pairs.

Since 1985, Roseate numbers in the state have fluctuated between 1,269 and 2,124 pairs, averaging 1,603 pairs during this time period (**Fig. 1**).

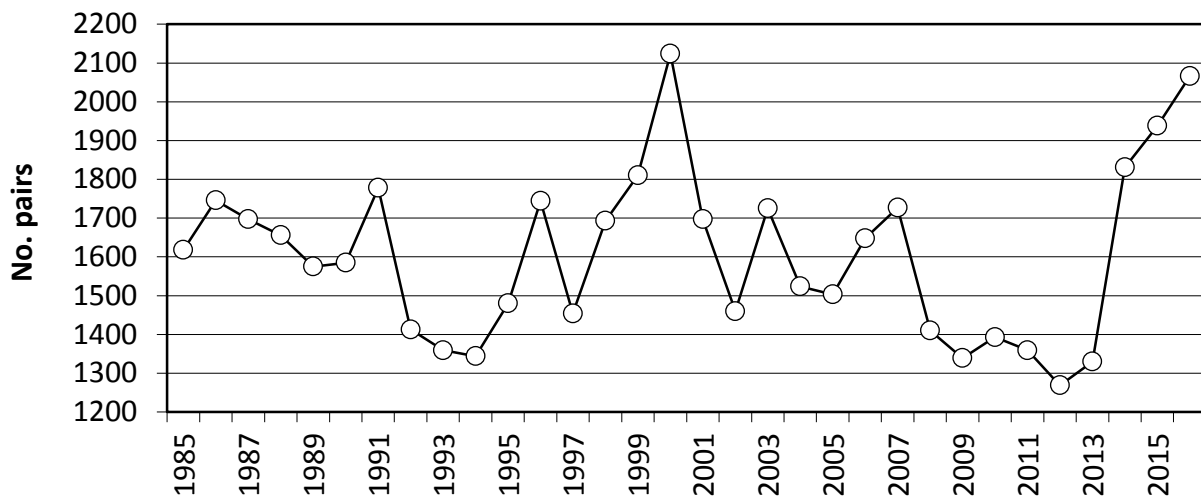


Figure 1. Number of nesting Roseate Tern pairs in Massachusetts, 1985 – 2016.

Common Tern: Massachusetts' Common Tern population remained essentially stable at 17,175 pairs (vs. 17,155.5 pairs in 2015, +0.1%) distributed across 29 – 30 sites.

The S. Monomoy I. Common Tern colony grew to 10,505 pairs (vs. 9,203) and had excellent productivity (1.96 fledglings/pair). Numbers increased at Ram I. (3,527 vs. 3,330; 0.91 fledglings/nest), the second-largest colony. Bird I. supported 2,193 pairs (vs. 2,247; 0.81 fledglings/nest). Numbers dropped at Penikese I. (531 vs. 1,216.5) due to predation; productivity was poor (0.04 fledglings/nest). Norton Point Beach supported 160 pairs (vs. 82); productivity was excellent. No other sites numbered more than 100 pairs of Common Terns. Following severe predation in 2015, when 663 pairs nested, Plymouth Long Beach did not support nesting Common Terns in 2016.

The ten largest A-period colonies supported 99% of the state's Common Tern pairs; 95% of the state's pairs were concentrated in the three largest colonies.

From 1985 to 2003, Common Tern numbers rose rapidly in Massachusetts. Although the rate of population growth has slowed since then, numbers have continued to inch upwards. Since 1985, population size has ranged from 6,483 to 17,175 pairs (mean, 13,056 pairs) (**Fig. 2**).

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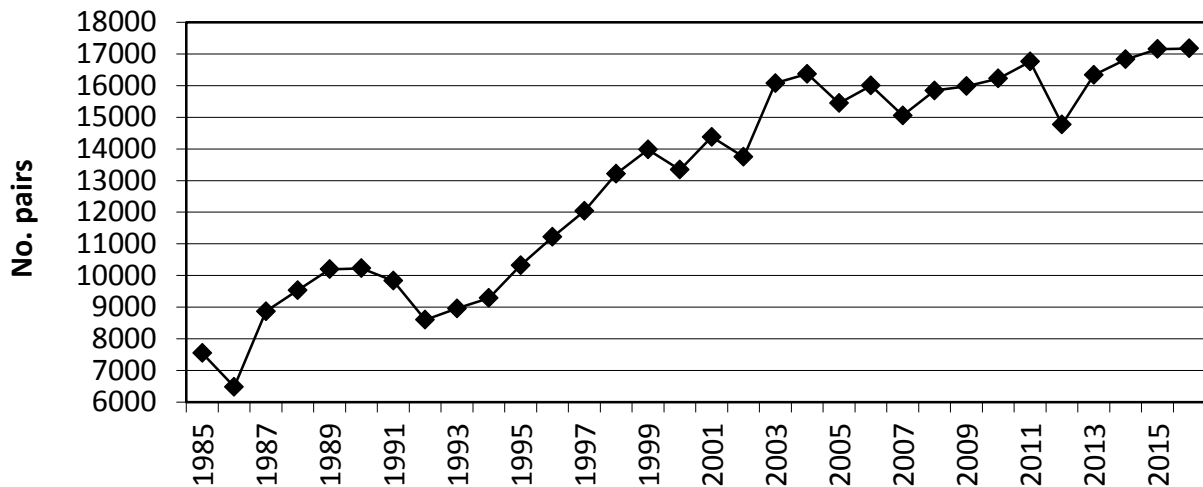


Figure 2. Number of nesting Common Tern pairs in Massachusetts, 1985 – 2016.

Arctic Tern: In 2016, an unpaired Arctic Tern was present at Penikese throughout the breeding season, but despite considerable effort, it did not find a mate. In 2015, there was one nesting pair in the state, also at Penikese.

Since 1985, numbers of this range-edge species have ranged from 0 to 29 pairs (mean, 8 pairs), with an overall downward trend (**Fig. 3**).

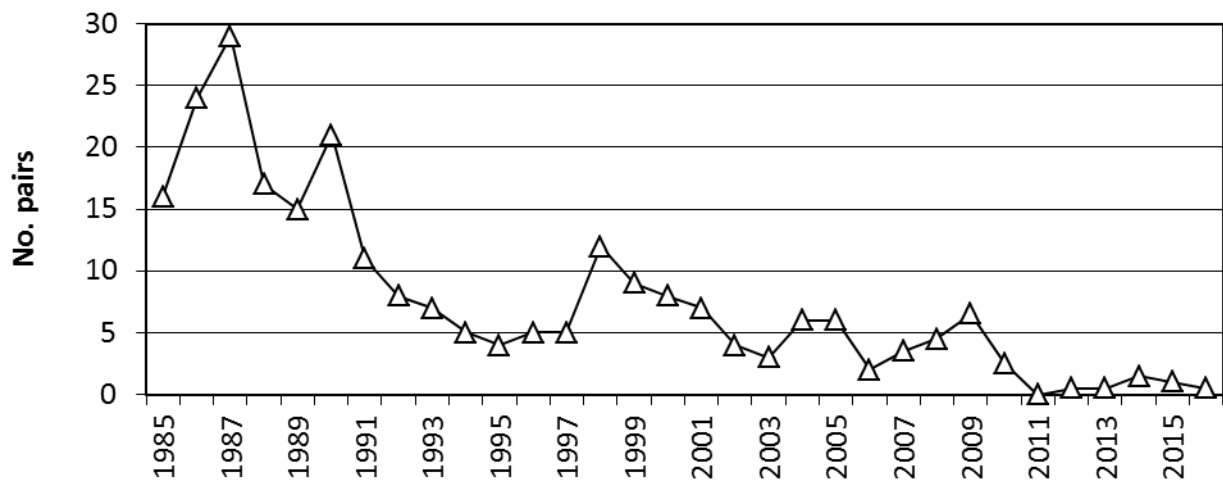


Figure 3. Number of nesting Arctic Tern pairs in Massachusetts, 1985 – 2016.

Least Tern: Least Terns nested at 58 sites in Massachusetts in 2016 and numbered **3,230 pairs** (vs. 3,665 in 2015; -11.9%).

South Monomoy I. had the largest Least Tern colony, 839 pairs (vs. 522); productivity varied with subcolony (zero to excellent). Other sites with at least 100 pairs were Tuckernuck I., Nantucket (412 vs. 0; excellent?), Norton Point Beach (350 vs. 54; excellent), Smith’s Point (251 [preliminary] vs. >677; poor), Duxbury Beach, Duxbury/Plymouth (151 vs. 205; zero to fair, depending on subcolony), Western

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Ave., Nantucket (128 vs. 139; excellent), Crane Beach, Ipswich (115 vs. 105; poor), and South Beach (south of break), Chatham (107 vs. 54; zero to good, depending on subcolony).

The ten largest A-period Least Tern sites supported 78% of the pairs. The three largest A-period sites supported 50% of the pairs.

Since 1985, numbers of Least Terns have ranged from 2,109 to 4,309 pairs with a mean of 2,960 pairs (**Fig. 4**). The overall trend is positive, but there has been considerable volatility in the numbers. How much of this is due to the difficulties inherent in estimating Least Tern population sizes versus true changes in abundance is unknown.

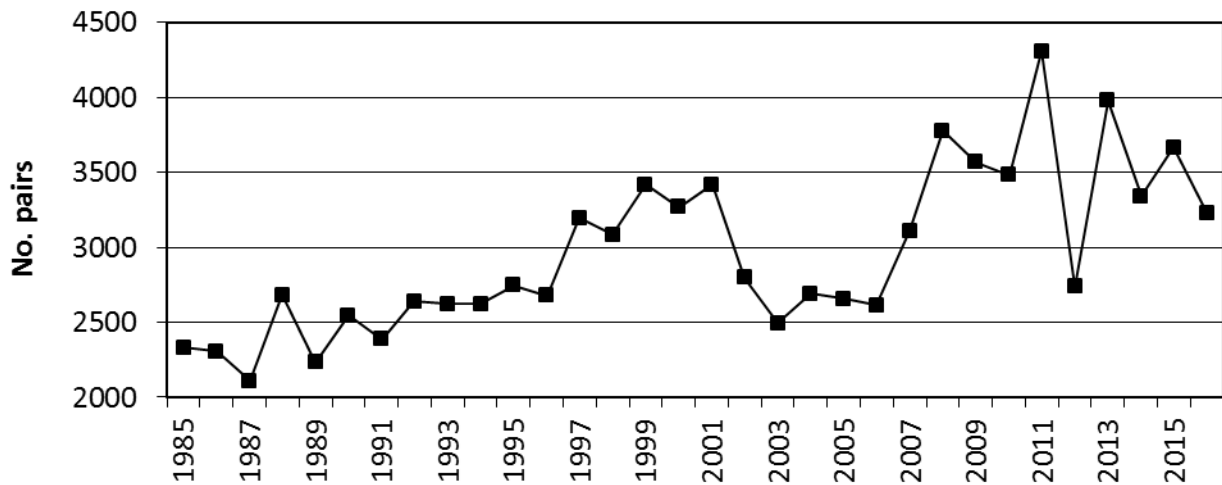


Figure 4. Number of nesting Least Tern pairs in Massachusetts, 1985 – 2016.

Black Skimmer: In 2016, **six pairs** of Black Skimmers nested during the A-period; no additional nesting pairs were located during the B-period (vs. 5 A-period and 7 B-period in 2015). One or two sites were occupied. During the A-period, six pairs nested at Norton Point Beach (vs. 5 B-period in 2015); productivity was excellent. Four pairs were recorded at Little Beach/Eel Pond, Edgartown prior to the A-period (vs. 5 A-period in 2015). They made nest scrapes and eggs were suspected on 26 May; however, they deserted by 31 May, possibly due to skunk disturbance or predation.

Black Skimmers, at the northern end of their breeding range here, have ranged from 0 to 7 pairs (mean, 4) since 1985, with no clear population trend (**Fig. 5**).

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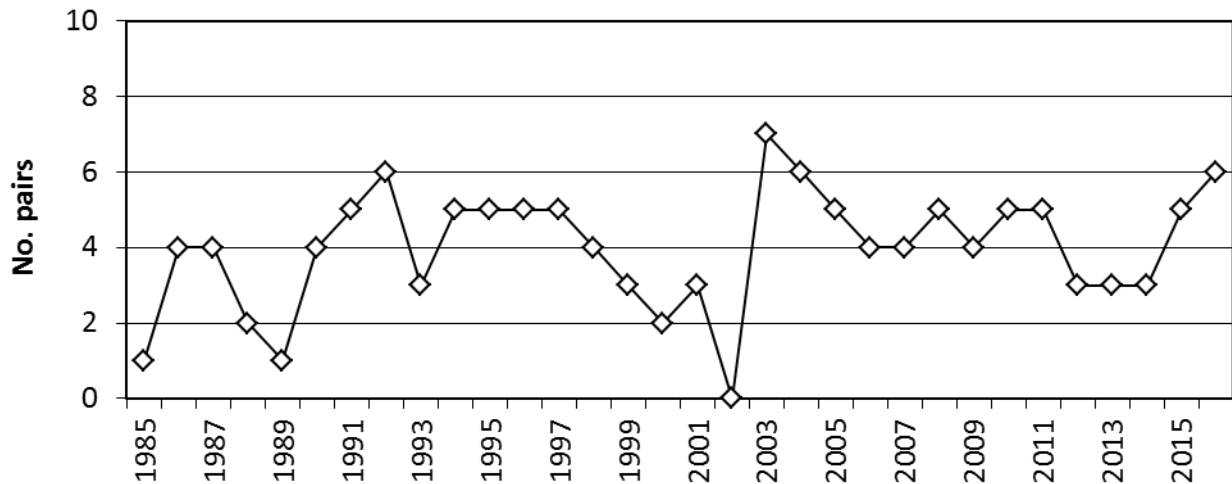


Figure 5. Number of nesting Black Skimmer pairs in Massachusetts, 1985 – 2016.

Laughing Gull: Laughing Gull numbers increased 26.0% in 2016 to **2,751 pairs** (vs. 2,183 in 2015), another record high for Massachusetts. They nested at the usual two sites: S. Monomoy I. (2,738 vs. 1,424; excellent) and Plymouth Long Beach (13 vs. 759; none).

From 1985 to present, Laughing Gulls have averaged 1,265 pairs, ranging between 542 and 2,751 pairs (**Fig. 6**). The overall trend since 1998 has been strongly upward: the population has nearly quadrupled since then. Because Laughing Gulls compete with Common and Roseate Terns for space and resources and are predators of terns, documenting their distribution, numbers, and interactions with our terns is important.

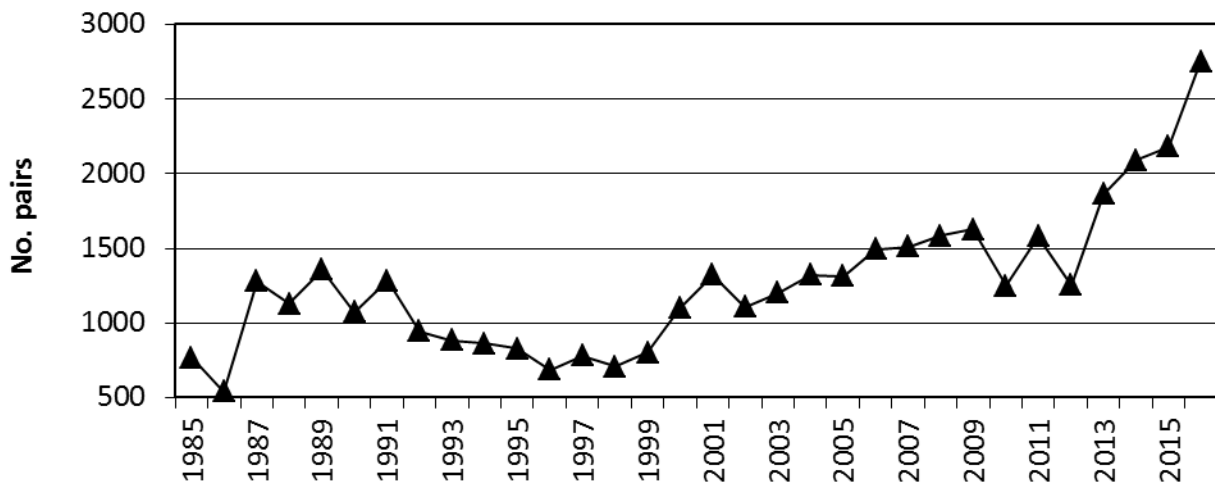


Figure 5. Number of nesting Laughing Gull pairs in Massachusetts, 1985 – 2016.

Acknowledgements

We thank dozens of cooperators who worked at these sites and collected and submitted data for this report. We also thank the Massachusetts Audubon Society for working with us to develop and implement TERNODES. Bill Byrne (MassWildlife) graciously provided the cover photo.

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Appendix A. Numbers of pairs and productivity of terns, Laughing Gulls, and Black Skimmers nesting in Massachusetts in 2016. All sites were censused unless noted as “nd” (no data). Data in parentheses refer to B-period (post-peak) counts. Data in brackets were collected prior to the A-period census window.

Site Name, Town	Roseate Tern			Common Tern			Arctic Tern	Least Tern			Black Skimmer			Laughing Gull			Source	Notes
	No pairs	M	P	No pairs	M	P	No pairs	No pairs	M	P	No pairs	M	P	No pairs	M	P		
NORTH SHORE																		
Bagwell Island, Ipswich	0			0			0	0			0			0			ECGA	
Belle Isle Marsh, Boston	nd (nd)			nd (nd)			nd (nd)	nd (nd)			nd (nd)			nd (nd)				
Blackwater River Group, Salisbury	0			0			0	0			0			0			ECGA	
Central Square, East Boston	0			48	A		0	0			0			0			Zendeh	
Chaces Island, Newbury	0			0			0	0			0			0			USFWS	
Chelsea Creek, East Boston, Chelsea	nd (nd)			nd (nd)			nd (nd)	nd (nd)			nd (nd)			nd (nd)				
Clubhead Creek, Rowley	0			1	A		0	0			0			0			ECGA	
Crane Beach, Ipswich	0			3	N	0	0	115	N	P	0			0			TTOR	
General Edwards Bridge, Rte 1A, Revere, Lynn	0			28	A		0	0			0			0			Zendeh	
Ipswich Salt Marshes, Ipswich	0			0			0	0			0			0			ECGA	
Jeffrey's Point, East Boston	0			16	A		0	0			0			0			Zendeh	
Logan Airport, Boston	0			0			0	0			0			0			Smith	
Lords Island, Ipswich	0			9	A		0	0			0			0			ECGA	

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Site Name, Town	Roseate Tern			Common Tern			Arctic Tern	Least Tern			Black Skimmer			Laughing Gull			Source	Notes
	No pairs	M	P	No pairs	M	P	No pairs	No pairs	M	P	No pairs	M	P	No pairs	M	P		
Lovell's Beach, Boston	0 (0)			0 (0)			0 (0)	5 (4)	A, I (A, I)	E	0 (0)			0 (0)			MAS	
Mystic River Bridge, Somerville, Everett	0			10	A		0	0			0			0			Zendeh	
Parker River NWR, Newbury, Rowley	0			0			0	77	N	G	0			0			USFWS	
Plum Island River/Parker River Group, Newbury	0			0			0	0			0			0			USFWS	
Rainsford Island, Boston	0			0			0	5	A, I, N		0			0			MAS	
Roger Island, Ipswich	0			0			0	0			0			0			ECGA	
Rowley Salt Marshes, Rowley	0			0			0	0			0			0			ECGA	
Sandy Point State Reservation Beach, Ipswich	0			0			0	46 (24)	A (A)	F	0			0			MAS	
Snake Island, Winthrop	0			0			0	0			0			0			NPS	
Tinker's Island, Marblehead	0			0*			0	0			0			0			Pivacek	Common Terns were present in May, but did not nest.
Winthrop Beach, Winthrop	0 (0)			0 (0)			0 (0)	77	I	G	0 (0)			0 (0)			DCR	
Woodbridge Island, Newburyport	0			0			0	0			0			0			USFWS	
Yirrell Beach, Winthrop	0			0			0	0			0			0			Winthrop	
SOUTH SHORE																		
Duxbury Beach, Duxbury, Plymouth	0			0			0	151 (28)	A (A)	O, F, P	0			0			MAS	

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Site Name, Town	Roseate Tern			Common Tern			Arctic Tern	Least Tern			Black Skimmer			Laughing Gull			Source	Notes
	No pairs	M	P	No pairs	M	P	No pairs	No pairs	M	P	No pairs	M	P	No pairs	M	P		
Ellisville Harbor State Park , Plymouth	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			MAS	
Ellisville Shifting Lots Preserve , Plymouth	0 (0)			0 (0)			0 (0)	[1] 0 (0)	[N] 0		0 (0)			0 (0)			MAS	
Fourth Cliff, Scituate	0			0			0	37	A P		0			0			MAS	
Plymouth Long Beach, Plymouth	0			0			0	31 (73)	N (N) F		0			13	N 0		Plymouth	
Rexhame Beach, Marshfield	0			0			0	0			0			0			MAS	
Sagamore Beach - Bourne, Bourne	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			MAS	
Sagamore Beach - Sandwich , Sandwich	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			MAS	
Scusset Beach State Reservation, Sandwich	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			MAS	
Spinnaker Island, Hull	0			38	A		0	0			0			0			NPS	
The Glades, Scituate	0			12	A, I		0	0			0			0			MAS	
Third Cliff, Scituate	0			1	A E		0	50	A G		0			0			MAS	
UPPER CAPE																		
Black Beach, Falmouth	0			0			0	[32] 6	[A] A	0	0			0			MAS	
Craigville Beach, Barnstable	0			0			0	0			0			0			MAS	
Dead Neck Sampsons Island, Barnstable	0 (0)			0 (0)			0 (0)	[4] 18 (30)	[N] I (A) P		0 (0)			0 (0)			MAS	
Dowses Beach, Barnstable	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			Barnstable	

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Site Name, Town	Roseate Tern			Common Tern			Arctic Tern	Least Tern			Black Skimmer			Laughing Gull			Source	Notes
	No pairs	M	P	No pairs	M	P	No pairs	No pairs	M	P	No pairs	M	P	No pairs	M	P		
East Sandwich, Sandwich	0			0			0	6	A	P	0			0			MAS	
Grays Beach, Yarmouth	0			7 (1)	N (1)	0, E	0	57	N	G	0			0			MAS	
Great Island Causeway, Yarmouth	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			MAS	
Great Island - Smith Point, Yarmouth	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			MAS	
Kalmus Beach, Barnstable	0 (0)			0 (0)			0 (0)	[20] 0 (0)	[A]	0	0 (0)			0 (0)			Barnstable	
Long Beach, Barnstable	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			MAS	
Menauhant, Falmouth	0			0			0	0			0			0			MAS	
Miramar Beach (Swan River), Dennis	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			MAS	
Popponesset Spit, Mashpee	0 (0)			0 (0)			0 (0)	83 (64)	A (A)	P	0 (0)			0 (0)			MAS	
Sandy Neck Beach Park, Barnstable	0 (0)			0 (0)			0 (0)	37 (46)	A (A)	F, G, P	0 (0)			0 (0)			Barnstable	
Scorton Neck (Torrey), Sandwich	0			0			0	6	N	E	0			0			MAS	
Scorton Shores, Sandwich	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			MAS	
Seagull Beach, Yarmouth	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			MAS	
Sippewisset, Falmouth	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			MAS	
South Cape Beach, Mashpee	0 (0)			0 (0)			0 (0)	6 (19)	A (A)	P	0 (0)			0 (0)			MAS	

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Site Name, Town	Roseate Tern			Common Tern			Arctic Tern	Least Tern			Black Skimmer			Laughing Gull			Source	Notes
	No pairs	M	P	No pairs	M	P	No pairs	No pairs	M	P	No pairs	M	P	No pairs	M	P		
Spring Hill, Sandwich	0			0			0	46	N	E	0			0			MAS	
Squaw Island, Barnstable	0			0			0	[16] 8	[A] A	G	0			0			MAS	
Town Neck, Sandwich	0			0			0	6	A	F	0			0			MAS	
Trunk River, Falmouth	0			0			0	0			0			0			MAS	
Washburn Island, Falmouth	0			0			0	[22] 5	[A] A	0	0			0			MAS	
West Dennis Beach, Dennis	0			0			0	0			0			0			Dennis	
LOWER CAPE																		
Ballston Beach , Truro	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			MAS	
Ballston, Truro	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			NPS	
Beach Point, Truro	0			0			0	0			0			0			MAS	
Cahoon Hollow, Wellfleet	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			NPS	
Coast Guard Beach, Eastham	0			0			0	17	I	E	0			0			NPS	
Corn Hill Beach, Truro	0 (0)			0 (0)			0 (0)	6 (19)	A (A)	0	0 (0)			0 (0)			MAS	
Fisher Beach South, Truro	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			MAS	
Forest Beach, Chatham	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			MAS	
Great Is., Wellfleet	0 (0)			0 (0)			0 (0)	1 (8)	I (I)	0	0 (0)			0 (0)			NPS	
Harding Beach, Chatham	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			MAS	
Harding Shores, Chatham	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			MAS	
Head of the Meadow, Truro	0 (0)			0 (0)			0 (0)	1 (1)	N (I)	0	0 (0)			0 (0)			NPS	

INVENTORY OF TERNS, LAUGHING GULLS, AND BLACK SKIMMERS NESTING IN MASSACHUSETTS IN 2016

Site Name, Town	Roseate Tern			Common Tern			Arctic Tern	Least Tern			Black Skimmer			Laughing Gull			Source	Notes
	No pairs	M	P	No pairs	M	P	No pairs	No pairs	M	P	No pairs	M	P	No pairs	M	P		
High Head, Truro	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			NPS	
Jeremy Point, Wellfleet	0			0			0	14	I	P	0			0			NPS	
Lecount Hollow, Wellfleet	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			NPS	
Lieutenant Island - NW, Wellfleet	0			0			0	0			0			0			MAS	
Lieutenant Island - SW, Wellfleet	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			MAS	
Marconi Beach, Wellfleet	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			NPS	
Marconi Station, Wellfleet	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			NPS	
Minimoy Island, Chatham	0 (0)			0 (0)			0 (0)	[3] 0 (0)	[N]	0	0 (0)			0 (0)			USFWS	
New Island, Orleans	0			0			0	0			0			0			NPS	
North (Nauset) Beach, Chatham	0			0			0	? (>30)			0			0			Chatham	
North Beach Island, Chatham	0			0			0	present			0			0			Chatham	
North Monomoy Island, Chatham	0 (0)			0 (2)	(N)	0	0 (0)	0 (0)			0 (0)			0 (0)			USFWS	
North Spit, Orleans	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			Orleans	
Race Point North, Provincetown	0 (0)			0 (0)			0 (0)	[6] 19 (18)	[I] I (I)	G	0 (0)			0 (0)			NPS	
Race Point South, Provincetown, Truro	0 (0)			0 (0)			0 (0)	2 (21)	A, I (I)	O, F	0 (0)			0 (0)			NPS	
Ridgevale Beach, Chatham	0			0			0	[22] 0 (0)	[A]	0	0			0			MAS	
South Beach (Nauset), Orleans	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			Orleans	
South Beach (North of Break), Chatham	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			MAS	

INVENTORY OF TERNS, LAUGHING GULLS, AND BLACK SKIMMERS NESTING IN MASSACHUSETTS IN 2016

Site Name, Town	Roseate Tern			Common Tern			Arctic Tern	Least Tern			Black Skimmer			Laughing Gull			Source	Notes
	No pairs	M	P	No pairs	M	P	No pairs	No pairs	M	P	No pairs	M	P	No pairs	M	P		
South Beach (South of Break) , Chatham	0			1	I		0	107 (24)	I (I)	O, F, G	0			0			MAS	
South Monomoy Island, Chatham	12 (2)	N (N)	1.17 fl/pr	10,505	N	1.96 fl/pr	0	839	I, N	O, E	0			2738	N	E	USFWS	
South Sunken Meadow, Eastham	0			0			0	0			0			0			MAS	
Tern Island, Chatham	0			1	A		0	28 (44)	A (A)	P	0			0			MAS	
Wood End/Long Point, Provincetown	0 (0)			0 (0)			0 (0)	0 (1)	(N)	0	0 (0)			0 (0)			NPS	
BUZZARDS BAY - NORTHWEST																		
Acoaxet, Westport	0			1	A		0	0			0			0			MAS	
Barney's Joy/Little Beach (Allen's Pond), Dartmouth	0			0			0	62	A	F	0			0			MAS	
Bird Island, Marion	1,153	N	1.16 fl/n	2,193	N	0.81 fl/n	0 (0)	0 (0)			0 (0)			0 (0)			DFW	
Demarest Lloyd State Park, Dartmouth	0			0			0	9	N	0	0			0			LCE	
Fish Island, Fairhaven	0			0			0	0			0			0			DFW	
Fishing Rock, Westport	0			3	N		0	0			0			0			MAS	
Gooseberry Neck, Westport	0			0			0	0			0			0			LCE	
Horseneck Beach State Reservation, Westport	0			0			0	50	A, E, N	E, F	0			0			LCE	
Jug Rock, Westport	nd (nd)			nd (nd)			nd (nd)	nd (nd)			nd (nd)			nd (nd)				

INVENTORY OF TERNS, LAUGHING GULLS, AND BLACK SKIMMERS NESTING IN MASSACHUSETTS IN 2016

Site Name, Town	Roseate Tern			Common Tern			Arctic Tern	Least Tern			Black Skimmer			Laughing Gull			Source	Notes
	No pairs	M	P	No pairs	M	P	No pairs	No pairs	M	P	No pairs	M	P	No pairs	M	P		
Long Island, Fairhaven	nd (nd)			nd (nd)			nd (nd)	nd (nd)			nd (nd)			nd (nd)				
Nonquitt, Dartmouth	0			18	A		0	0			0			0			MAS	
Pine Island (Angelica Point and Strawberry Point), Mattapoisett	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			DFW	
Ram Island, Mattapoisett	886	N	1.49 fl/n	3,527	N	0.91 fl/n	0 (0)	0 (0)			0 (0)			0 (0)			DFW	
Richmond Pond, Westport	0 (0)			0 (0)			0 (0)	0 (2)	(A, N)	0	0 (0)			0 (0)			TNCRI	
Round Hill, Dartmouth	0			0			0	0			0			0			MAS	
Salters Pond, Dartmouth	0			5	A		0	0			0			0			MAS	
South Shore Marshes, Fairhaven	0 (0)			0 (0)			0 (0)	4	A	P	0 (0)			0 (0)			DFW	
Speaking Rock, Westport	0			2	A, N		0	0			0			0			MAS	
Timmy's Rock (Allen's Pond), Dartmouth	0			13	A		0	0			0			0			MAS	Formerly combined with Allen's Pond.
West Island, Fairhaven	0			0			0	0			0			0			LCE	
Winsegansett Heights, Fairhaven	0			0			0	1	A	0	0			0			LCE	
ELIZABETH ISLANDS																		
Cuttyhunk Island, Gosnold	0			0			0	14	A		0			0			DFW	
Nashawena Island, Gosnold	nd (nd)			nd (nd)			nd (nd)	nd (nd)			nd (nd)			nd (nd)				
Pasque Island, Gosnold	nd (nd)			nd (nd)			nd (nd)	nd (nd)			nd (nd)			nd (nd)				

INVENTORY OF TERNS, LAUGHING GULLS, AND BLACK SKIMMERS NESTING IN MASSACHUSETTS IN 2016

Site Name, Town	Roseate Tern			Common Tern			Arctic Tern	Least Tern			Black Skimmer			Laughing Gull			Source	Notes
	No pairs	M	P	No pairs	M	P	No pairs	No pairs	M	P	No pairs	M	P	No pairs	M	P		
Penikese Island, Gosnold	11 (0)	N	0.10 fl/n	531 (202)	N (N)	0.04 fl/n	0.5*	0 (0)						0 (0)			DFW	One unpaired Arctic Tern was present and advertising for a mate throughout the season.
MARTHA'S VINEYARD																		
Arruda's Point / The Jetties , Edgartown	0 (0)			0 (0)			0 (0)	0 (0)						0 (0)			TTOR	
Bend-in-the-Road Beach, Edgartown	0 (0)			0 (0)			0 (0)	0 (0)						0 (0)			MAS	
Big Gravel Island, Oak Bluffs	0 (0)			0 (0)			0 (0)	0 (0)						0 (0)			MAS	
Black Point Pond, Chilmark	0 (0)			0 (0)			0 (0)	0 (0)						0 (0)			BW	
Cape Pogue Elbow / The Narrows, Edgartown	0			4	N	0	0	[20] 10	[N] N	0, F				0			TTOR	
Cedar Tree Neck, West Tisbury	0 (0)			0 (0)			0 (0)	0 (0)						0 (0)			BW	
Chilmark Pond Preserve, Chilmark	0			0			0	0						0			MVLBC	
Chilmark Pond, Chilmark	0 (0)			0 (0)			0 (0)	8	A	P				0 (0)			BW	
Cow Bay, Edgartown	0 (0)			0 (0)			0 (0)	0 (0)						0 (0)			MAS	
Dogfish Bar, Aquinnah	0 (0)			0 (0)			0 (0)	[8] 0 (0)	[A]	0				0 (0)			BW	
East Beach and Poucha Pond, Edgartown	0 (0)			0 (0)			0 (0)	0 (0)						0 (0)			TTOR	
East Tashmoo, Tisbury	0 (0)			0 (0)			0 (0)	0 (0)						0 (0)			MAS	
Eastville Beach, Oak Bluffs	0			0			0	12	A	P				0			MAS	

INVENTORY OF TERNS, LAUGHING GULLS, AND BLACK SKIMMERS NESTING IN MASSACHUSETTS IN 2016

Site Name, Town	Roseate Tern			Common Tern			Arctic Tern	Least Tern			Black Skimmer			Laughing Gull			Source	Notes
	No pairs	M	P	No pairs	M	P	No pairs	No pairs	M	P	No pairs	M	P	No pairs	M	P		
Edgartown Great Pond (Job's Neck), Edgartown	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			BW	
Edgartown Great Pond, Edgartown	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			MVLBC	
Edys Island, Chilmark	0			6	A	0	0	0			0			0			MAS	
Harthaven, Oak Bluffs	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			MAS	
Haystack Island, Edgartown	0			22	A	F	0	0			0			0			MAS	
Lamberts Cove, West Tisbury	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			BW	
Leland / East Beach, Edgartown	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			TTOR	
Little Beach / Eel Pd., Edgartown	[50]* 0 (0)	[A]	0	[12]* 0 (0)	[A]	0	0 (0)	[6] 0 (1)	[A] (N)	0	[4]* 0 (0)	[A]	0	0 (0)			BW	Roseate & Common tern eggs suspected 5/18, not confirmed; deserted by 6/1. Skimmers made nest scrapes; eggs suspected 5/26, not confirmed; deserted by 5/31.
Little Gravel Island, Oak Bluffs	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			MAS	
Little Neck, Edgartown	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			TTOR	
Lobsterville, Aquinnah	0			0			0	0			0			0			MAS	
Long Point, West Tisbury	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			TTOR	
Mink Meadows /West Chop, Tisbury	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			MAS	

INVENTORY OF TERNS, LAUGHING GULLS, AND BLACK SKIMMERS NESTING IN MASSACHUSETTS IN 2016

Site Name, Town	Roseate Tern			Common Tern			Arctic Tern	Least Tern			Black Skimmer			Laughing Gull			Source	Notes
	No pairs	M	P	No pairs	M	P	No pairs	No pairs	M	P	No pairs	M	P	No pairs	M	P		
Nomans Land Island, Chilmark	0			0			0	0			0			0			USFWS	
Norton Point Beach, Edgartown	4	I, N	P	160	I	E	0	350	I, N	E	6	I	E	0			TTOR	
Oyster Pond, Edgartown	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			BW	
Paqua Pond, Edgartown	nd (nd)			nd (nd)			nd (nd)	nd (nd)			nd (nd)			nd (nd)				
Paul's Point, West Tisbury	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			BW	
Pease's Pond, Edgartown	0			0			0	0			0			0			BW	
Quansoo, Chilmark	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			MAS	
Sarsons Island, Oak Bluffs	0			10	A	0	0	0			0			0			MAS	
Seven Gates, West Tisbury	0			0			0	0			0			0			BW	
South Beach, Edgartown	0			0			0	0			0			0			BW	
Squibnocket Beach/Long Beach, Chilmark	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			BW	
Stonewall Beach, Chilmark	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			BW	
Sylvia State Beach Edgartown, Edgartown	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			MAS	
Sylvia State Beach Oak Bluffs, Oak Bluffs	0			0			0	6	A	0	0			0			MAS	
Wasque, Edgartown	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			TTOR	
Watcha Pond, West Tisbury	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			BW	

INVENTORY OF TERNS, LAUGHING GULLS, AND BLACK SKIMMERS NESTING IN MASSACHUSETTS IN 2016

Site Name, Town	Roseate Tern			Common Tern			Arctic Tern	Least Tern			Black Skimmer			Laughing Gull			Source	Notes
	No pairs	M	P	No pairs	M	P	No pairs	No pairs	M	P	No pairs	M	P	No pairs	M	P		
West Tashmoo, Tisbury	0 (0)			0 (0)			0 (0)	[18] 0 (3)	[A] (I)	P	0 (0)			0 (0)			BW	
Yorke - Allen Point, Edgartown	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			MAS	
NANTUCKET																		
Coatue, Nantucket	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			NCF	
Coskata-East Beach, Nantucket	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			TTOR	
Coskata-West Beach, Nantucket	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			TTOR	
Eel Point, Nantucket	0			0			0	[105] 1	[A] N	O, E	0			0			NCF	
Fisherman's Beach (Surfside), Nantucket	nd (nd)			nd (nd)			nd (nd)	nd (nd)			nd (nd)			nd (nd)				
Great Point, Nantucket	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			TTOR	
Hummock and West Hummock Ponds, Nantucket	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			NCF	
Muskeget Is., Nantucket	[0] nd			[0] nd			[0] nd	[0] nd			[0] nd			[0] nd			MAS	
Muskeget sandbars, Nantucket	nd (nd)			nd (nd)			nd (nd)	nd (nd)			nd (nd)			nd (nd)				
Polpis Harbor (Medouie Creek and Pocomo Meadows), Nantucket	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			NCF	
Quaise, Nantucket	nd (nd)			nd (nd)			nd (nd)	nd (nd)			nd (nd)			nd (nd)				
Quidnet/Sesachacha Pond/Greenhills, Nantucket	0 (0)			0 (0)			0 (0)	0 (4)	(I)	0	0 (0)			0 (0)			MAS	

INVENTORY OF TERNS, LAUGHING GULLS, AND BLACK SKIMMERS NESTING IN MASSACHUSETTS IN 2016

Site Name, Town	Roseate Tern			Common Tern			Arctic Tern	Least Tern			Black Skimmer			Laughing Gull			Source	Notes
	No pairs	M	P	No pairs	M	P	No pairs	No pairs	M	P	No pairs	M	P	No pairs	M	P		
Siasconset, Nantucket	nd (nd)			nd (nd)			nd (nd)	nd (nd)			nd (nd)			nd (nd)				
Smith's Point, Nantucket	0 (0)			0 (0)			0 (0)	251* (5)	?	P*	0 (0)			0 (0)			Nantucket*, MAS	Preliminary data; final data were not received.
Squam Head and Pond, Nantucket	0			0			0	0			0			0			NCF, MAS	
The Galls, Nantucket	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			TTOR	
The Glades, Nantucket	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			TTOR	
The Haulover, Nantucket	0 (0)			0 (0)			0 (0)	0 (0)			0 (0)			0 (0)			TTOR	
Tom Nevers Head, Nantucket	nd (nd)			nd (nd)			nd (nd)	nd (nd)			nd (nd)			nd (nd)				
Tuckernuck Island, Nantucket	0			0			0	412	N	E?	0			0			TLT	
Wauwinet, Nantucket	0			0			0	0			0			0			MAS	
Western Ave, Nantucket	0			0			0	[296] 128	[A] A	E	0			0			MAS	Formerly combined with Surfside Beach.
TOTAL 2016 NESTING PAIRS	2,066			17,175			0.5	3,230			6			2,751				
TOTAL 2015 NESTING PAIRS	1,938			17,155.5			1.0	3,665			5			2,183				
PERCENT CHANGE FROM 2015	6.6			0.1			-50.0	-11.9			20.0			26.0				

INVENTORY OF TERNS, LAUGHING GULLS, AND BLACK SKIMMERS NESTING IN MASSACHUSETTS IN 2016

	Roseate Tern			Common Tern			Arctic Tern	Least Tern			Black Skimmer			Laughing Gull				
Site Name, Town	No pairs	M	P	No pairs	M	P	No pairs	No pairs	M	P	No pairs	M	P	No pairs	M	P	Source	Notes

^a Method: A = adult count; E = partial/extrapolated count; N = nest count. See text of "Methods" for more details.

^b Productivity: 0 = none; P = poor; F = fair; G = good; E = excellent. Quantitative estimates are given as fledglings/nest or fledglings/pair.

^c In addition to the names of towns, counties, and individuals, the following abbreviations are used: BW=BiodiversityWorks; DCR=Massachusetts Department of Conservation and Recreation; DFW=Massachusetts Division of Fisheries & Wildlife; ECGA=Essex County Greenbelt Association; LCE=Lloyd Center for the Environmental; MAS=Massachusetts Audubon Society-Coastal Waterbird Program; MVLBC=Martha's Vineyard Land Bank Commission; NCF=Nantucket Conservation Foundation; NPS=National Park Service; TLT=Tuckernuck Land Trust; TNCRI=The Nature Conservancy - Rhode Island; TTOR=The Trustees of Reservations; USFWS=U.S. Fish & Wildlife Service.

* See Notes column.

INVENTORY OF TERNS, LAUGHING GULLS, AND BLACK SKIMMERS NESTING IN MASSACHUSETTS IN 2016

Appendix B. Sites not included in **Appendix A** that were surveyed for nesting terns, Black Skimmers, and Laughing Gulls in 2016. These sites had no record of nesting birds of these species in 2016 or, to our knowledge, in any previous year.

Site Name, Town	Source
NORTH SHORE	
Newburyport Town Beach , Newburyport	MAS
Salisbury Beach State Reservation-North, Salisbury	MAS
Salisbury Beach State Reservation-South, Salisbury	MAS
UPPER CAPE	
Allens Harbor, Harwich	MAS
Bone Hill Road, Barnstable	MAS
Crosby Landing Beach, Brewster	MAS
Grey Neck Road Beach, Harwich	MAS
Inn on the Beach-Winstead Inn, Harwich	MAS
New Seabury, Mashpee	MAS
Radio City Beach, Yarmouth	MAS
Red River Beach, Harwich	MAS
Saquatucket Beach, Harwich	MAS
Woodneck Beach, Falmouth	MAS
Wychmere-Merkel-Bank St, Harwich	MAS
LOWER CAPE	
Bound Brook, Wellfleet	NPS
Coast Guard Truro, Truro	NPS
Cockle Cove , Chatham	MAS
Duck Harbor, Wellfleet	NPS
First Encounter Beach, Eastham	MAS
Morris Island Dredge Spoil, Chatham	MAS
Nauset Light Beach, Eastham	NPS
Newcomb Hollow, Wellfleet, Truro	NPS
Pleasant St. Beach, Chatham	MAS
White Crest Beach, Wellfleet	NPS
BUZZARDS BAY - NORTHWEST	
Long Beach Point, Wareham	MAS
MARTHA'S VINEYARD	
Caleb's Pond, Edgartown	BW
Cape Higgon, Chilmark	BW
Cracktuxet Trust Beach, Edgartown	BW
Lighthouse Beach, Edgartown	BW
Lucy Vincent Beach, Chilmark	BW
Philbin Beach, Aquinnah	BW
Spring Point, Chilmark	BW

⁸ See **Appendix A** for full names of Sources.