INVENTORY OF TERNS, LAUGHING GULLS, AND BLACK SKIMMERS NESTING IN MASSACHUSETTS IN 2019



Least Tern, © Jeff Denoncour

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ABSTRACT

Cooperators in Massachusetts surveyed 260 coastal sites in 2019 for the presence of breeding Roseate Terns (*Sterna dougallii*), Common Terns (*Sterna hirundo*), Arctic Terns (*Sterna paradisaea*), Least Terns (*Sternula antillarum*), Black Skimmers (*Rhynchops niger*), and Laughing Gulls (*Larus atricilla*). Approximately 106 sites were occupied by nesting birds. Compared to 2018, Roseate Terns decreased to 2,066 pairs (-11%), Least Terns increased to 4,289 pairs (+23%); Arctic Terns increased to 1.5 pairs (vs. 0.5 pairs), and the other species increased to record numbers: Common Terns, 20,291 pairs (+3%); Black Skimmers, 12 pairs (+9%); and Laughing Gulls, 3,659 pairs (+12%). Earliest and median first egg dates across sites were 16 May/26 May for Roseate Terns, 16 May/1 June for Common Terns, 8 June/(n/a) for Arctic Terns, 17 May/2 June for Least Terns, and 28 May/(n/a) for Laughing Gull. (No precise chronology data are available for Black Skimmer.)

INTRODUCTION

Coastal waterbirds are a vulnerable group of species. Of Massachusetts' four nesting tern species, the Common Tern, Least Tern, and 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 2019 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 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 MassWildlife's long-standing 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 include: 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.

If birds were territorial, courting, and/or scraping at a site, but no eggs were observed, they are not included in statewide totals, as they may have been counted elsewhere. It is possible, however, that eggs went undetected and nests were lost, particularly for Least Terns nesting on mainland beaches.

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 arrived: 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 five 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 AND DISCUSSION

In 2019, 260 sites were surveyed for nesting terns, Laughing Gulls, and Black Skimmers. Approximately 106 sites were occupied by nesting birds of one or more of these species (**Appendix A**).

Nesting Chronology

Timing of nesting season events is shown in Table 1 and Fig. 1.

Table 1. Nesting chronology for terns, Black Skimmers, and Laughing Gulls in Massachusetts in 2019.

2019		Roseate Tern	Common Tern	Arctic Tern ^c	Least Tern	Black Skimmer	Laughing Gull
Date first adults observed	Earliest date (site)	1-May (Bird I., Marion)	30-Apr (Salters Pd., Dartmouth; S. Monomoy I., Chatham)	26-May (Penikese I., Gosnold)	6-May (Eel Pt., Nantucket; Horseneck Bch., Westport)	24-Apr (Little Bch./Eel Pd., Edgartown)	30-Apr (S. Monomoy I., Chatham)
	Median ^a (n) ^b	10-May (6)	16-May (20)	n/a	24-May (95)	n/a	n/a
Date first eggs laid	Earliest date (site)	16-May (Bird I., Marion)	16-May (Bird I., Marion)	8-Jun (Penikese I., Gosnold)	17-May (Spring Hill Bch., Sandwich)	22- to 27-May (Little Bch./Eel Pd., Edgartown)	28-May (S. Monomoy I., Chatham)
	Median (n)	26-May (5)	1-Jun (11)	n/a	2-Jun (81)	n/a	n/a
Date first chicks hatched	Earliest date (site)	9-Jun (Ram I., Mattapoisett)	8-Jun (Bird I., Marion; Ram I., Mattapoisett)	6-Jul (Penikese I., Gosnold)	8-Jun (Dowses Bch., Barnstable)	19- to 23-Jun (Little Bch./Eel Pd., Edgartown)	nd
natenca	Median (n)	16-Jun (4)	18-Jun (7)	n/a	27-Jun (60)	n/a	n/a
Last date young	Latest date (site)	nd	19-Aug (Bird I., Marion)	nd	11-Sep (Exit 9, Provincetown)	24-Aug (Little Bch./Eel Pd., Edgartown)	nd
observed	Median (n)	nd	14-Aug (6)	n/a	15-Aug (49)	n/a	n/a

^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. For sites reporting a date range of ≤5 days (instead of a single value), the median value for the range was used in analyses; ranges >5 days were not used in analyses.

^b n – number of sites

^c Arctic Tern values are for a pure pair and do not include a mixed Arctic Tern/Common Tern pair on Penikese I.

^d n/a – not applicable (used if species nested at a single site)

e nd – no data

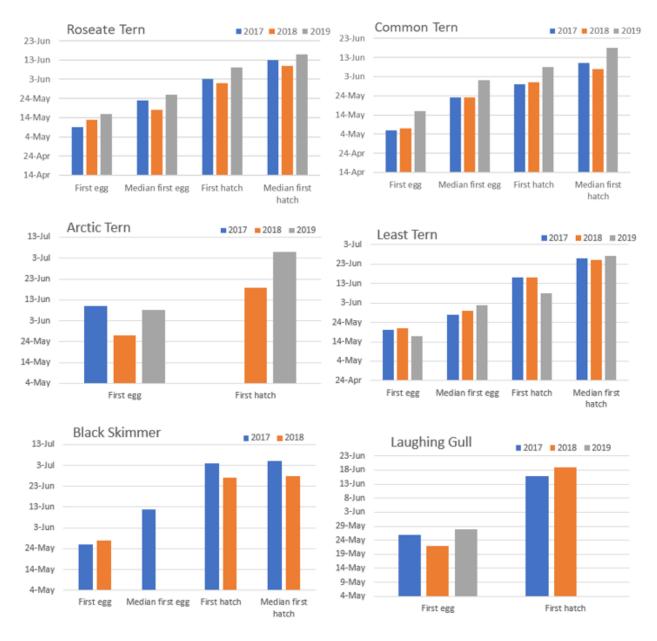


Figure 1. Key tern, Black Skimmer, and Laughing Gull nesting dates, 2017 - 2019. "First egg" and "first hatch" indicate the earliest egg laying and hatching dates reported statewide. Median dates refer to the among-site values (i.e., the median of the "first" dates reported by different sites), not the within-site median dates for individual birds or nests. For sites reporting a date range of ≤5 days (instead of a single value), the median value for the range was used in analyses; ranges >5 days were not used in analyses.

Abundance and Distribution

Roseate Tern

Summary, 2019	
Number of nesting sites:	5
Number of pairs, A-period:	2066
% change in number of pairs from 2018:	-10.6%
2 largest sites, percent of total A-period pairs:	97.8%
Average number of A-period pairs, 1985 - present (range):	1655 (1269 - 2310)

Roseate Terns declined 11% in 2019. **Table 2** provides site-specific data for all sites where nesting was confirmed. The Northeast U.S. population (Maine through New York) as a whole declined about 5% to 4,311 pairs (Roseate Tern Recovery Team, unpubl. data).

Table 2. Abundance and productivity of Roseate Terns at nesting sites in Massachusetts, 2019.

Site	No. pairs, A-period (2019)	Productivity (2019)	No. pairs, A-period (2018)
Bird Island, Marion	1101	0.79 fledg./nest	1175
Ram Island, Mattapoisett	919	0.80 fledg./nest	1093
Norton Point Beach, Edgartown	19	0	0
Penikese Island, Gosnold	15	0.33 fledg./nest	12
South Monomoy Island, Chatham	12	0.75 fledg./nest	30

Since 1985, Roseate numbers in the state have fluctuated, but were strongly increasing from 2012 to 2018 (Fig. 2).

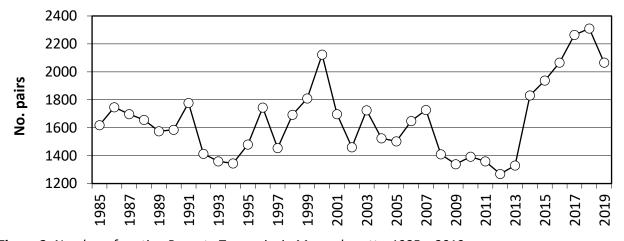


Figure 2. Number of nesting Roseate Tern pairs in Massachusetts, 1985 – 2019.

Common Tern

Summary, 2019	
Number of nesting sites:	35
Number of pairs, A-period:	20291
% change in number of pairs from 2018:	+2.8
10 largest sites, percent of total A-period pairs	99.1
3 largest sites, percent of total A-period pairs	92.8
Average number of A-period pairs, 1985 - present (range)	13597 (6483 - 20291)

In 2019, Massachusetts' Common Tern population increased 3% to the highest number recorded in recent history, mainly due to growth of the South Monomoy I. colony, where productivity was good. The Buzzards Bay colonies (Bird, Ram, and Penikese) suffered a prey failure and productivity was abysmal. **Table 3** provides site-specific data for the largest sites.

Table 3. Abundance and productivity of Common Terns at the 10 largest nesting sites in Massachusetts, 2019.

Site	No. pairs, A-period (2019)	Productivity (2019)	No. pairs, A- period (2018)
South Monomoy Island, Chatham	14343	1.00 fledg./nest	13272
Ram Island, Mattapoisett	2631	0.03 fledg./nest	3053
Bird Island, Marion	1855	0.15 fledg./nest	2079
Penikese Island, Gosnold	887	0.28 fledg./nest	1004
Norton Point Beach, Edgartown	173	0	3
Haystack Island, Edgartown	48	fair	32
Central Square, Boston	44	unknown	89
General Edwards Bridge, Revere-Lynn	44	unknown	32
Nomans Land Island NWR, Chilmark	43	0	5
Little Beach/Eel Pond, Edgartown	41	poor	2

Common Tern numbers rose rapidly in Massachusetts during 1982 - 2003, slowed or leveled off during 2004 - 2016, and now appear to be increasing more rapidly (**Fig. 3**).

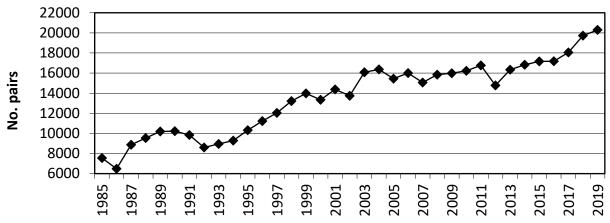


Figure 3. Number of nesting Common Tern pairs in Massachusetts, 1985 – 2019.

Arctic Tern

Summary, 2019	
Number of nesting sites:	1
Number of pairs, A-period:	1.5
% change in number of pairs from 2018:	+200%
Additional pairs, B-period:	0
Average number of A-period pairs, 1985 - present (range):	7 (0 - 29)

On Penikese I., Gosnold, an Arctic Tern pair and a mixed Arctic Tern/Common Tern pair nested. **Table 4** provides more detail.

Table 4. Abundance and productivity of Arctic Terns in Massachusetts, 2019.

Site	No. pairs, A-period (2019)	Productivity (2019)	No. pairs, A-period (2018)	Notes
Penikese Island, Gosnold	1.5	poor	0.5	A pair of Arctic Terns nested but its 2 chicks did not survive to fledging. One Arctic Tern nested with a Common Tern producing 1 hybrid chick that likely fledged.

Since 1985, there has been an overall downward trend in abundance of this very rare, range-edge species (Fig. 4).

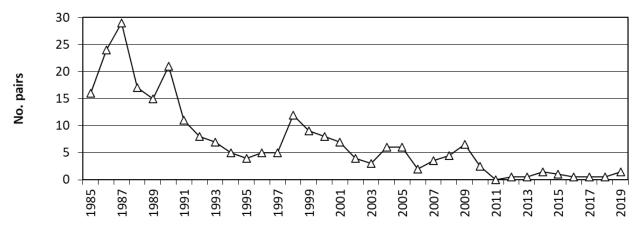


Figure 4. Number of nesting Arctic Tern pairs in Massachusetts, 1985 – 2019.

Least Tern

Summary, 2019	
Number of nesting sites:	77
Number of pairs, A-period:	4289
% change in number of pairs from 2018:	+22.8%
10 largest sites, percent of total A-period pairs:	63.5%
3 largest sites, percent of total A-period pairs:	32.3%
Average number of A-period pairs, 1985 - present (range):	3013 (2109 - 4309)

Least Terns increased 23% to the second-highest number of pairs on record. **Table 5** provides site-specific data for the largest sites.

Table 5. Abundance and productivity of Least Terns at the 11 largest A- or B-period nesting sites in Massachusetts, 2019.

Site	No. pairs, A- period (2019)	No. pairs, B- period (2019)	Productivity (2019)	No. pairs, A- period (2018)
Norton Point Beach, Edgartown	618		0 to poor	297
South Beach - Middle Island, Chatham	400		fair	176
South Monomoy Island, Chatham	400	0	poor	499
Little Beach / Eel Pd., Edgartown	346		fair to good	155
Smith Point / Esther Is., Nantucket	298	410	0 to poor	0
Crane Beach, Ipswich	190		good	151
South Beach (South of Break), Chatham	155	38	fair	70
Sandy Neck Beach Park, Barnstable	150	96	0 to fair	97

No. pairs, A- period (2019)	No. pairs, B- period (2019)	Productivity (2019)	No. pairs, A- period (2018)
120	150	fair to	27
			27
	_		72 16
	•	No. pairs, A- period (2019) 129 100 9	No. pairs, A- period (2019) pairs, B- period (2019) (2019) fair to excellent 100 9 0

The overall trend in Least Tern numbers since 1985 has been positive, but there has been considerable volatility in the numbers (**Fig. 5**); some of this may reflect the difficulties inherent in estimating Least Tern population sizes.

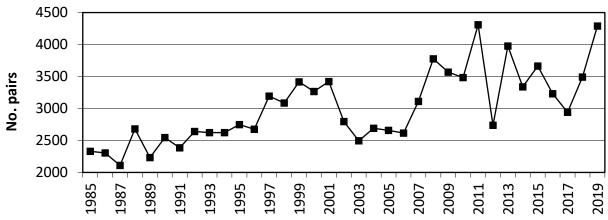


Figure 5. Number of nesting Least Tern pairs in Massachusetts, 1985 – 2019.

Black Skimmer

Summary, 2019	
Number of nesting sites:	1
Number of pairs, A-period:	12
% change in number of pairs from 2018:	+9.1%
Additional pairs, B-period:	0
Average number of A-period pairs, 1985 - present (range):	9 (0 - 12)

Black Skimmers increased by one pair to a record high 12 pairs. They nested at a single site, Little Beach/Eel Pond, Edgartown, and productivity was very good (**Table 6**).

Table 6. Abundance and productivity of Black Skimmers in Massachusetts, 2019.

Site	No. pairs, A- period (2019)	Productivity (2019)	No. pairs, A- period (2018)
Little Beach/Eel Pond, Edgartown	12	1.2 fledg./pair	11

Black Skimmers, which are at the northern end of their breeding range in Massachusetts, have been rapidly increasing since 2014 (**Fig. 6**).

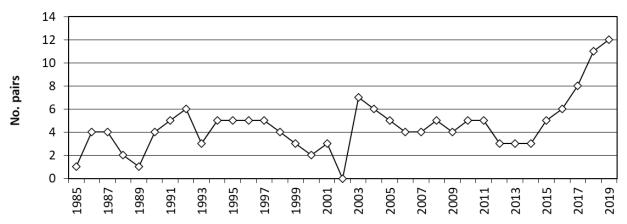


Figure 6. Number of nesting Black Skimmer pairs in Massachusetts, 1985 – 2019.

Laughing Gull

Summary, 2019	
Number of nesting sites:	1
Number of pairs, A-period:	3659
% change in number of pairs from 2018:	+11.8%
Average number of A-period pairs, 1985 - present (range):	1433 (542 - 3659)

Laughing Gulls increased 12% to a record high. They nested only at South Monomoy I., Chatham and productivity was good (**Table 7**).

Table 7. Abundance and productivity of Laughing Gulls in Massachusetts, 2019.

Site	No. pairs, A-period	Productivity	No. pairs, A-
	(2019)	(2019)	period (2018)
South Monomoy Island, Chatham	3659	good	3272

Laughing Gulls have been increasing rapidly since 1998, with the rate of increase accelerating since 2012 (**Fig. 7**). Because Laughing Gulls compete with Common and Roseate Terns for space and resources and are predators of terns, population monitoring is very important.

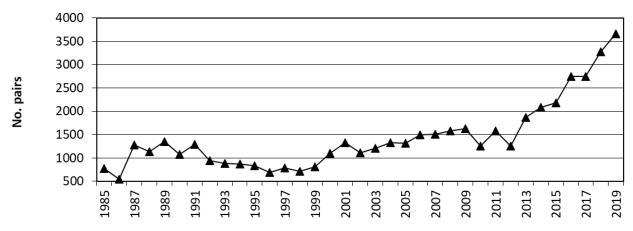


Figure 7. Number of nesting Laughing Gull pairs in Massachusetts, 1985 – 2019.

ACKNOWLEDGEMENTS

We thank dozens of cooperators who worked at these sites and collected and submitted data for this report.



Least Tern, © Jeff Bernier

Appendix A. Numbers of pairs and productivity of terns, Laughing Gulls, and Black Skimmers nesting in Massachusetts in 2019. 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. An asterisk (*) indicates that the Notes column should be consulted for more information.

	Rose	eate T	ern	Comr	non T	ern	Arct	ic Ter	'n	Le	east Ter	'n	Black	Skim	mer	Laugh	ing G	ull		
	No.			No.			No.			No.			No.			No.				
Site	pairs	M ^a	Pb	pairs	М	P	pairs	М	Р	pairs	М	Р	pairs	М	P	pairs	М	Р	Notes	Source
NORTH SHORE																				
Bagwell Island,	0						0			0			0			0				
Ipswich	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				ECGA
Belle Isle Marsh,	nd			nd			nd			nd			nd			nd				
Boston	(nd)			(nd)			(nd)			(nd)			(nd)			(nd)				
Blackwater River	0						0			0			0			0				
Group, Salisbury	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				ECGA
Carson Beach, South	0						0			0			0			0				
Boston	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Central Square, East																				
Boston	0			44	Α		0			0			0			0				Zendeh
Chaces Island,	nd			nd			nd			nd			nd			nd				
Newbury	(nd)			(nd)			(nd)			(nd)			(nd)			(nd)				
Chelsea Creek, East																				
Boston-Chelsea	0			2	Α		0			0			0			0				Zendeh
Clubhead Creek,	0						0			0			0			0				
Rowley	(nd)			1 (nd)	AN		(nd)			(nd)			(nd)			(nd)				ECGA
Constitution Beach,	0						0			0			0			0				
Boston	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Crane Beach,																				
Ipswich	0 (0)			0 (0)			0 (0)			190	N	G	0 (0)			0 (0)				TTOR
General Edwards																				
Bridge, Rte 1A,																				
Revere-Lynn	0			44	Α		0			0			0			0				Zendeh
	0						0			0			0			0				
Georges Is., Boston	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Ipswich Salt	0						0			0			0			0				
Marshes, Ipswich	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				ECGA
Jeffrey's Point, East]																
Boston	0			20	Α		0			0			0			0				Zendeh
L Street Bathhouse,	0			0 (1)			0			0			0			0				N445
Dorchester	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)		<u> </u>		MAS

	Rose	eate T	ern	Comr	non T	ern	Arct	ic Ter	'n	Le	ast Ter	n	Black	Skim	nmer	Laughi	ing G	ull		
	No.			No.			No.			No.			No.			No.				
Site	pairs	Mª	Pb	pairs	М	Р	pairs	М	Р	pairs	M	P	pairs	М	Р	pairs	М	P	Notes	Source
Logan Airport,																				
Boston	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				Smith
	0						0			0			0			0				
Lords Island, Ipswich	(nd)			6 (nd)	Α		(nd)			(nd)			(nd)			(nd)				ECGA
Lovell's Beach,										100	Α									
Boston	0 (0)			0 (0)			0 (0)			(9)	(N)	0	0 (0)			0 (0)				MAS
Mystic River Bridge,																				
Somerville-Everett	0			6	Α		0			0			0			0				Zendeh
Newbury Town																				
Beach, Newbury	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				MAS
Newburyport																				
Beach,	- (-)			. (5)			- (-)			55	Α (1)	_	- (-)							
Newburyport	0 (0)			0 (0)			0 (0)			(7)	(A)	0	0 (0)			0 (0)				DCR
										[22]	[A]									
Parker River NWR,	0 (0)			0 (0)			0 (0)			34	Α (Δ)	•	0 (0)			0 (0)				LICENAC
Newbury / Rowley	0 (0)			0 (0)			0 (0)			(90)	(A)	G	0 (0)			0 (0)				USFWS
Plum Island River	0			33			0			0			0			0				LICEVAC
Group, Newbury	(nd)			(nd)	Α		(nd)			(nd)			(nd)			(nd)				USFWS
Rainsford Island,	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				NAAC
Boston	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				MAS
Roger Island, Ipswich	(nd)			0 (nd)			0 (nd)			0 (nd)			(nd)			0 (nd)				ECGA
Rowley Salt	0			U (IIU)			0			0			0			0				ECGA
Marshes, Rowley	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				ECGA
iviaisiles, Nowiey	(IIu)			o (na)			(IIu)			15	Α		(IIII)			(IIu)				LCGA
Sandy Point, Ipswich	0 (0)			0 (0)			0 (0)			(27)	(A)	F	0 (0)			0 (0)				DCR
Snake Island,	0 (0)			0 (0)			0 (0)			(27)	(* 1)	•	0 (0)			0 (0)				DON
Winthrop	0 (0)			1	N	Ε	0 (0)			0 (0)			0 (0)			0 (0)				MAS
Spectacle Island,	0				''		0			0			0			0				
Boston	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Tinker's Island,	nd			nd			nd			nd			nd			nd				
Marblehead	(nd)			(nd)			(nd)			(nd)			(nd)			(nd)				
Winthrop Beach,	` ,			, ,			, ,			` ′	Α		, ,			<u> </u>				
Winthrop	0 (0)			0 (0)			0 (0)			6 (2)	(N)	0	0 (0)			0 (0)				DCR

	Rose	eate T	ern	Comr	non To	ern	Arct	ic Ter	'n	Le	ast Ter	'n	Black	Skin	nmer	Laughi	ing G	ull		
	No.			No.			No.			No.			No.			No.				
Site	pairs	Ma	Pb	pairs	M	P	pairs	М	Р	pairs	M	Р	pairs	М	P	pairs	М	Р	Notes	Source
Woodbridge Island,	0						0			0			0			0				
Newburyport	(nd)			3 (nd)	Α		(nd)			(nd)			(nd)			(nd)				USFWS
Yirrell Beach,																				
Winthrop	0			0			0			0			0			0				Winthrop
SOUTH SHORE																				
Duxbury Beach,										129	ΑI									
Duxbury	0 (0)			0 (0)			0 (0)			(159)	(1)	F,G,E	0 (0)			0 (0)				MAS
Ellisville Harbor																				
State Park,	0						0			0			0			0				
Plymouth	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Ellisville Shifting																				
Lots Preserve,										6										
Plymouth	0 (0)			0 (0)			0 (0)			(10)	A (I)		0 (0)			0 (0)				MAS
										[40]										
										12	[A]									
Fourth Cliff, Scituate	0 (0)			0 (0)			0 (0)			(3)	A (I)	Р	0 (0)			0 (0)				MAS
Musquashicut Pond,	nd						nd			nd			nd			nd				
Scituate	(0)			nd (6)	(A)		(0)			(3)	Α		(0)			(0)				MAS
Nantasket Beach,	0						0			0			0			0				
Hull	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Plymouth Long										98	N									
Beach, Plymouth	0 (0)			0 (0)			0 (0)			(47)	(N)	Р	0 (0)			0 (0)				Plymouth
Rexhame Beach,	0						0			0			0			0				
Marshfield	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Sagamore Beach,	0						0			0			0			0				
Bourne	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Saquish Beach,																				
Plymouth	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				MAS
Spinnaker Island,	0			30			0			0			0			0				
Hull	(nd)			(nd)	Α		(nd)			(nd)			(nd)			(nd)				NPS
	0						0			0			0			0				
The Glades, Scituate	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
										48	Α									
Third Cliff, Scituate	0 (0)			0 (0)			0 (0)			(58)	(A)	Р	0 (0)			0 (0)				MAS

	Rose	eate T	ern	Comr	non T	ern	Arct	ic Ter	'n	Le	east Ter	'n	Black	Skin	nmer	Laugh	ing G	iull		
	No.			No.			No.			No.			No.			No.				
Site	pairs	Mª	Pb	pairs	М	Р	pairs	М	Р	pairs	М	P	pairs	М	Р	pairs	М	Р	Notes	Source
UPPER CAPE																				
Allens Harbor,	0						0			0			0			0				
Harwich	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Bank Street,	0						0			0			0			0				
Harwich	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Bass River Beach,	0						0			0			0			0				
Yarmouth	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Bassetts Island,	0						0			0			0			0				
Bourne	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Bayview / Howes	0						0			0			0			0				
(Private), Dennis	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Belmont Condos,	0						0			0			0			0				
Harwich	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Black Beach,	0 (0)			0 (0)			0 (0)						0 (0)			0 (0)				
Falmouth	0 (0)			0 (0)			0 (0)			6	Α	0	0 (0)			0 (0)				MAS
Bone Hill Road,	0			0 (12 4)			0			0 (== d)			0			0				N40C
Barnstable	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Chapin Beach, Dennis	nd (nd)			nd (nd)			nd (nd)			nd (nd)			nd (nd)			nd (nd)				
	(nd)			(nd)									1 1							
Craigville, Barnstable	0 (nd)			0 (nd)			0 (nd)			0 (nd)			0 (nd)			0 (nd)				MAS
	(IIu)			U (IIU)			(IIu)			5	_		(IIu)			(IIu)				IVIAS
Crosby Landing Beach, Brewster	0 (0)			0 (0)			0 (0)			(22)	A (A)	F	0 (0)			0 (0)				MAS
Dead Neck	0 (0)			0 (0)			0 (0)			[80]		Г	0 (0)			0 (0)				IVIAS
Sampsons Island,										[80] 16	[A] A									
Barnstable	0 (0)			0 (0)			0 (0)			(160)	(A)	Р	0 (0)			0 (0)				MAS
Dowses Beach,	0 (0)			0 (0)			0 (0)			(100)	(,,,	•	0 (0)			0 (0)				1417.05
Barnstable	0 (0)			0 (0)			0 (0)			1	N	Е	0 (0)			0 (0)				Barnstable
	0			- (-)			0			0			0			0				
Dr. Botero, Dennis	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
East Sandwich	, ,			, ,			, ,						, ,			<u> </u>				
Beach, East																				
Sandwich	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				Sandwich
Fortes Beach,	0						0			0			0			0				
Barnstable	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS

	Rose	eate T	ern	Comr	non T	ern	Arct	ic Ter	'n	Le	ast Ter	'n	Black	Skin	nmer	Laughi	ing G	ull		
	No.			No.			No.			No.			No.			No.				
Site	pairs	Mª	Pb	pairs	М	P	pairs	М	Р	pairs	M	Р	pairs	М	Р	pairs	М	P	Notes	Source
Grays Beach,																				
Yarmouth	0 (0)			40	Α	0	0 (0)			0 (0)			0 (0)			0 (0)				MAS
Great Island - Smith										[80]	[A]									
Point, Yarmouth	0 (0)			0 (0)			0 (0)			5	Α	0	0 (0)			0 (0)				MAS
Great Island																				
Causeway,	0						0			0			0			0				
Yarmouth	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Kalmus Beach,																				
Barnstable	0 (0)			0 (0)			0 (0)			30	- 1	G	0 (0)			0 (0)				Barnstable
Little Island Beach,	0						0			0			0			0				
Falmouth	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Long Beach,																				
Barnstable	0 (0)			0 (0)			0 (0)			14	AN	0,P	0 (0)			0 (0)				MAS
Maushop Village -																				
Rock Landing,	0						0			0			0			0				
Mashpee	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Memorial Beach /	0						0			0			0			0				
Covell's, Barnstable	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Menauhant Beach,																				
Falmouth	0			0			0			0			0			0				MAS
Miramar Beach										10	Α									
(Swan River), Dennis	0 (0)			0 (0)			0 (0)			(5)	(A)	0	0 (0)			0 (0)				MAS
Mussel Point,	nd			nd			nd			nd			nd			nd				
Barnstable	(nd)			(nd)			(nd)			(nd)			(nd)			(nd)				
										, .									Roseate Tern copulations were observed in the pre-A period but	
New Seabury,	[27*]									[9]	[A]								no scraping	
Mashpee	0 (0)			0 (0)			0 (0)			18	Α	Р	0 (0)			0 (0)			occurred.	MAS
Popponesset Spit,										[14]	[A]									
Mashpee	0 (0)			0 (0)			0 (0)			1	Α	0	0 (0)			0 (0)				MAS
Radio City Beach,	0						0			0			0			0				
Yarmouth	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS

	Rose	eate T	ern	Comr	non T	ern	Arct	ic Ter	'n	Le	east Ter	'n	Black	Skin	nmer	Laugh	ing G	iull		
	No.			No.			No.			No.			No.			No.				
Site	pairs	Mª	Pb	pairs	М	Р	pairs	М	P	pairs	М	Р	pairs	М	P	pairs	М	Р	Notes	Source
Red Jacket Beach,	0						0			0			0			0				
Yarmouth	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Red River Beach,	nd			nd			nd			nd			nd			nd				
Harwich	(nd)			(nd)			(nd)			(nd)			(nd)			(nd)				
Rushy Marsh Pond,	0						0			0			0			0				
Barnstable	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Sagamore Beach,	0						0			0			0			0				
Sandwich	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Sandy Neck Beach										150	Α									
Park, Barnstable	0 (0)			0 (0)			0 (0)			(96)	(A)	0,P,F	0 (0)			0 (0)				Barnstable
Saquatucket Bluffs,	0						0			0			0			0				
Harwich	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Scorton Neck										[19]	[A]									
(Torrey), Sandwich	0 (0)			0 (0)			0 (0)			40	Α	0	0 (0)			0 (0)				MAS
Scorton Shores, East																				
Sandwich	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				Sandwich
Scusset State Park,	0						0			0			0			0				
Sandwich	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Seagull Beach,	- (-)						- (-)			- (-)			- (-)							
Yarmouth	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			Danasta and	MAS
																			Roseate and Common	
																			terns	
																			courted	
																			prior to the A-period	
																			but no	
Sippewisset,	[6*]			[32*]															scrapes or	
Falmouth	0 (0)	[A]		0 (0)	[A]		0 (0)			0 (0)			0 (0)			0 (0)			eggs were detected.	MAS
Smuggler's / Bass	, ,			. ,			, ,			. ,			, ,			` `				
River Beach,	0						0			0			0			0				
Yarmouth	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
																			A Common	
																1			Tern pair courted but	
										2.4	_								no eggs	
South Cape Beach,	0 (0)			0 (1*)		_	0 (0)			24	A (A)	_	0 (0)			0 (0)			were	NAAC
Mashpee	0 (0)			0 (1*)		0	0 (0)			(48)	(A)	F	0 (0)			0 (0)			detected.	MAS

	Rose	eate T	ern	Comr	non T	ern	Arct	ic Ter	'n	Le	east Ter	n	Black	Skin	nmer	Laughi	ing G	ull		
	No.			No.			No.			No.			No.			No.				
Site	pairs	Ma	Pb	pairs	М	Р	pairs	М	Р	pairs	M	P	pairs	М	Р	pairs	М	Р	Notes	Source
Spring Hill Beach,										59	Α									
Sandwich	0 (0)			0 (0)			0 (0)			(18)	(A)	Р	0 (0)			0 (0)				Sandwich
Squaw Island																				
Road/Causeway,	0						0			0			0			0				
Barnstable	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Squaw Island,										12	Α									
Barnstable	0 (0)			0 (0)			0 (0)			(12)	(A)	Р	0 (0)			0 (0)				MAS
Standish Way /																				
Colonial Acres,	0						0			0			0			0				
Yarmouth	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Stone Horse Yacht	0						0			0			0			0				
Club, Harwich	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Town Beach - Grey																				
Neck Rd (to Shore																				
Rd. lot)/Earle Road,	0						0			0			0			0				
Harwich	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Town Neck Beach,																				
Sandwich	0 (0)			0 (0)			0 (0)			29	Α	F	0 (0)			0 (0)				Sandwich
Trunk River,				_ ,_,			- 4-1			_ ,_,			_ ,_,			_ ,_,				
Falmouth	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				MAS
										[29]	[A]									
Washburn Island,	0 (0)			0 (0)			0 (0)			17	Α (Δ)		0 (0)			0 (0)				1
Falmouth	0 (0)			0 (0)			0 (0)			(2)	(A)	0	0 (0)			0 (0)				MAS
West Dennis Beach,	0 (0)			0 (0)			0 (0)			20	N		0 (0)			0 (0)				
Dennis	0 (0)			0 (0)			0 (0)			(27)	(N)	G	0 (0)			0 (0)				Dennis
Wing's Island,	0			0 (1)			0			0			0			0				2446
Brewster	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Winstead Inn / Inn							0						0							
on the Beach,	0			0 (===1)			0			0			0			0				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Harwich	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Woodneck Beach,	0						0			0			0			0				1,,,,,
Falmouth	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS

	Rose	eate T	ern	Comr	non T	ern	Arct	ic Ter	rn	Le	ast Ter	'n	Black	Skin	nmer	Laughi	ng G	ull		
	No.			No.			No.			No.			No.			No.				
Site	pairs	Ma	Pb	pairs	М	P	pairs	М	Р	pairs	M	Р	pairs	M	Р	pairs	М	P	Notes	Source
				[0]						[36*]	[A]								Common Terns courted but no scrapes were detected. Least Terns courted and scraped but no eggs	
Wychmere, Harwich	0 (0)			24*		0	0 (0)			16*	A	0	0 (0)			0 (0)			were detected.	MAS
LOWER CAPE	- (0)						- (0)						- (0)			- (0)			Ectotica.	
Armstrong Beach, Provincetown	0 (0)			0 (0)			0 (0)			[36] 54 (52)	[A] A (A)	P,F	0 (0)			0 (0)				NPS
Ballston Beach,	. ,						. ,				. ,	,	. ,			. ,				
Truro	0 (0)			0 (0)			0 (0)			6 (0)	Α	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)			2 (0)	Α	0	0 (0)			0 (0)				MAS
Bound Brook, Wellfleet	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				NPS
Cahoon Hollow, Wellfleet	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				NPS
Coast Guard Beach, Eastham	0 (0)			0 (0)			0 (0)			[13] 11 (15)	[A] A (N)	G	0 (0)			0 (0)				NPS
Coast Guard Truro, Truro	0 (0)			0 (0)			0 (0)			0 (9)	(1)	Р	0 (0)			0 (0)				NPS
Cockle Cove, Chatham	0 (nd)			0 (nd)			0 (nd)			0 (nd)			0 (nd)			0 (nd)				MAS
Corn Hill Beach, Truro	0 (0)			0 (0)			0 (0)			10 (16)	A (A)	F	0 (0)			0 (0)				MAS
Duck Harbor, Wellfleet	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				NPS
Exit 9, Provincetown	0 (0)			0 (0)			0 (0)			[0] 0 (1)	(AI)	G	0 (0)			0 (0)				NPS

	Rose	eate T	ern	Comr	non T	ern	Arct	ic Ter	'n	Le	east Ter	n	Black	Skin	nmer	Laughi	ing G	ull		
	No.			No.			No.			No.			No.			No.				
Site	pairs	Mª	Pb	pairs	М	Р	pairs	М	Р	pairs	M	P	pairs	М	P	pairs	М	Р	Notes	Source
											[N]									
										[3] 2	Α									
Fisher Beach, Truro	0 (0)			0 (0)			0 (0)			(0)	(A)	0	0 (0)			0 (0)				MAS
Forest Beach,										[32]										
Chatham	0 (0)			0 (0)			0 (0)			0 (0)	[A]	0	0 (0)			0 (0)				MAS
Great Is., Wellfleet	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				NPS
Harding Beach,																				
Chatham	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				MAS
Hardings Shores,	0						0			0			0			0				
Chatham	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Hatches Harbor,																				
Provincetown	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				NPS
										[36]	[A]									
Head of the										37	Α									
Meadow, Truro	0 (0)			0 (0)			0 (0)			(24)	(A)	Р	0 (0)			0 (0)				NPS
										[34]	[AN]									
Jeremy Point,										40	N									
Wellfleet	0 (0)			0 (0)			0 (0)			(4)	(N)	0	0 (0)			0 (0)				NPS
Lecount Hollow,																				
Wellfleet	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				NPS
Lieutenant Island -	nd			nd			nd			nd			nd			nd				
NW, Wellfleet	(nd)			(nd)			(nd)			(nd)			(nd)			(nd)				
Marconi Beach,																				
Wellfleet	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				NPS
										[9]	[AN]									
Marconi Station,	_ , .			.						28	AN					l . ,				
Wellfleet	0 (0)			0 (0)			0 (0)			(18)	(AN)	Р	0 (0)			0 (0)				NPS
Minimoy Island,																				
Chatham	0 (0)			1		0	0 (0)			0 (0)			0 (0)			0 (0)				USFWS
Morris Island NW																				
(dredge spoil),	0						0			0			0			0				
Chatham	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS

	Rose	eate T	ern	Comr	non T	ern	Arct	ic Ter	'n	Le	ast Ter	'n	Black	Skim	nmer	Laugh	ing G	ull		
	No.			No.			No.			No.			No.			No.	T			
Site	pairs	Mª	Pb	pairs	М	Р	pairs	М	Р	pairs	M	P	pairs	М	Р	pairs	М	Р	Notes	Source
Nauset - New Is.,	nd			nd			nd			nd			nd			nd				
Orleans	(nd)			(nd)			(nd)			(nd)			(nd)			(nd)				
Nauset Light Beach,																				
Eastham	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				NPS
Newcomb Hollow,																				
Wellfleet	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				NPS
North (Nauset)										0										
Beach, Chatham	0 (0)			0 (0)			0 (0)			(35)	(E)	Р	0 (0)			0 (0)				Chatham
North Beach Island,																				
Chatham	0			0			0			0			0			0				Chatham
North Monomoy Is.,																				11051416
Chatham	0			0			0			0			0			0				USFWS
North Spit, Orleans	0 (0)			0 (0)			0 (0)			83 (25)	N (N)	Р	0 (0)			0 (0)				Orleans
Pleasant Street	0 (0)			0 (0)			0 (0)			0	(IN)	Р	0 (0)			0 (0)				Orieans
Beach, Chatham	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Quitnesset,	(IIII)			o (na)			(IIII)			(Hu)			(IIII)			(iiu)				IVIAS
Chatham	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				MAS
	, ,						` '			[3]	[A]									
Race Point Beach,										10	Α									
Provincetown	0 (0)			0 (0)			0 (0)			(14)	(A)	Р	0 (0)			0 (0)				NPS
										[40]	[A]									
Race Point North,										88	Α									
Provincetown	0 (0)			0 (0)			0 (0)			(80)	(A)	Р	0 (0)			0 (0)				NPS
Race Point South,										[0] 5	Α									
Provincetown	0 (0)			0 (0)			0 (0)			(26)	(A)	Р	0 (0)			0 (0)			6	NPS
																			Common Terns	
																			courted but	
																			did not lay eggs. Least	
																			Terns	
																			courted and	
																			scraped, but no eggs	
Ridgevale Beach,										_									were	
Chatham	0 (0)			8* (0)			0 (0)			48*	Α	0	0 (0)			0 (0)			detected.	MAS

	Rose	eate T	ern	Comr	non T	ern	Arct	ic Ter	rn	Le	ast Ter	n	Black	Skin	nmer	Laugh	ing G	iull		
	No.			No.			No.			No.			No.			No.				
Site	pairs	Mª	Pb	pairs	М	P	pairs	М	P	pairs	M	Р	pairs	М	Р	pairs	М	P	Notes	Source
South Beach -																				
Middle Island,																				
Chatham	0 (0)			3	ı	F	0 (0)			400	AI	F	0 (0)			0 (0)				MAS
South Beach -	0						0			0			0			0				
North, Chatham	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
South Beach										50	N									
(Nauset), Orleans	0 (0)			0 (0)			0 (0)			(12)	(N)	F	0 (0)			0 (0)				Orleans
																			Common	
																			Terns courted and	
																			scraped but	
South Beach (South										155	AI								no eggs	
of Break), Chatham	0 (0)			1* (0)	Α	0	0 (0)			(38)	(AI)	0,P	0 (0)			0 (0)			were detected.	MAS
South Monomoy	5 (5)		0.75	- (0)	, ,	1.00	J (0)			400	(,,	٥,٠	3 (3)			3659			detected.	
Island, Chatham	12	N	fl/n	14343	N	fl/n	0 (0)			(0)	Α	Р	0 (0)			(0)	N	G		USFWS
South Sunken						,	- (-)			(-)			- (-)			()				
Meadow, Eastham	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				MAS
Tern Island,	- (-)			- (-,			- (-)			- (-)			- (-)			- (-,				_
Chatham	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				MAS
White Crest Beach,	- (-)			- (-/			- (-)			- (-)			- (-)			- (-,				_
Wellfleet	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				NPS
Wood End / Long	, ,			, ,			,			,			. ,			, ,				
Point, Provincetown	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				NPS
BUZZARDS BAY				, ,						. ,			. ,			` _				
	0						0			0			0			0				
Acoaxet, Westport	(nd)			3 (nd)	Α		(nd)			(nd)			(nd)			(nd)				MAS
Barney's Joy / Little																				
Beach, Dartmouth	0 (0)			0 (0)			0 (0)			98	Α	Р	0 (0)			0 (0)				MAS
	nd			nd			nd			nd			nd			nd				
Bay Point, Swansea	(nd)			(nd)			(nd)			(nd)			(nd)			(nd)				
			0.79			0.15						·								
Bird Island, Marion	1101	N	fl/n	1855	Ν	fl/n	0 (0)			0 (0)			0 (0)			0 (0)				DFW
Blankenship Cove,	0						0			0			0			0				
Marion	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Cedar Island,	0				-		0			0			0			0				
Wareham	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS

	Rose	eate T	ern	Comr	non T	ern	Arct	ic Ter	'n	Le	ast Ter	n	Black	Skin	nmer	Laughi	ing G	ull		
	No.			No.			No.			No.			No.			No.				
Site	pairs	M ^a	Pb	pairs	М	Р	pairs	М	Р	pairs	M	P	pairs	М	Р	pairs	М	Р	Notes	Source
Cromeset,	nd			nd			nd			nd			nd			nd				
Wareham	(nd)			(nd)			(nd)			(nd)			(nd)			(nd)				
										[20]	[AI]									
Demarest Lloyd,										23	ΑI									
Dartmouth	0 (0)			0 (0)			0 (0)			(12)	(AI)	Р	0 (0)			0 (0)				DCR
East Beach,	0						0			0			0			0				
Westport	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
	nd			nd			nd			nd			nd			nd				
Fish Is., Fairhaven	(nd)			(nd)			(nd)			(nd)			(nd)			(nd)				
Fishing Rock,	0						0			0			0			0				
Westport	(nd)			2 (nd)	- 1		(nd)			(nd)			(nd)			(nd)				MAS
Gooseberry Neck,	nd			nd			nd			nd			nd			nd				
Westport	(nd)			(nd)			(nd)			(nd)			(nd)			(nd)				
Gravel Island,	0						0			0			0			0				
Marion	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Haskell Island,	nd			nd			nd			nd			nd			nd				
Marion	(nd)			(nd)			(nd)			(nd)			(nd)			(nd)				
										[7]	[AI]									
Horseneck Beach,										11	ΑI									
Westport	0 (0)			0 (0)			0 (0)			(19)	(AI)	0	0 (0)			0 (0)				DCR
	nd			nd			nd			nd			nd			nd				
Jug Rock, Westport	(nd)			(nd)			(nd)			(nd)			(nd)			(nd)				
Little Harbor Beach,	0						0			0			0			0				
Wareham	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
	0						0			0			0			0				
Little Island, Marion	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Long Beach Point																				
Wareham,	0						0			0			0			0				
Wareham	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Long Island,	nd			nd			nd			nd			nd			nd				
Fairhaven	(nd)			(nd)			(nd)			(nd)			(nd)			(nd)				
Meadow Island,	0						0			0			0			0				
Marion	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Nonquitt,																				
Dartmouth	0			5	Α		0			0			0			0				MAS

	Rose	eate T	ern	Comr	non T	ern	Arct	ic Ter	'n	Le	ast Ter	'n	Black	Skin	nmer	Laughi	ing G	ull		
	No.			No.			No.			No.			No.			No.				
Site	pairs	Mª	Pb	pairs	М	P	pairs	М	Р	pairs	M	Р	pairs	М	Р	pairs	М	Р	Notes	Source
Pine Island (Angelica																				
Pt. and Strawberry	0						0			0			0			0				
Pt.), Mattapoisett	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				DFW
Planting Island	0						0			0			0			0				
Cove, Marion	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Planting Island,	0						0			0			0			0				
Marion	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Ram Is.,			0.80			0.03														
Mattapoisett	919	Ν	fl/n	2631	N	fl/n	0 (0)			0 (0)			0 (0)			0 (0)				DFW
Richmond Pond,																				
Westport	0			0			0			0			0			0				TNCRI
Round Hill Beach,	0						0			0			0			0				
Dartmouth	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Salters Pond,																				
Dartmouth	0 (0)			5	Α		0 (0)			0 (0)			0 (0)			0 (0)				MAS
South Shore																				
Marshes, Fairhaven	0			0			0			0			0			0				DFW
Speaking Rock,	0						0			0			0			0				
Westport	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Stewart's Island,	0						0			0			0			0				
Marion	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Swift's Beach,	0						0			0			0			0				
Wareham	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Timmy's Rock,	0				N		0			0			0			0				
Dartmouth	(nd)			3 (20)	(A)		(nd)			(nd)			(nd)			(nd)				MAS
Ward's Rock,																				
Fairhaven	0			0			0			0			0			0				DFW
West Is., Fairhaven	0			0			0			0			0			0				LCE
Westport Town																				
Beach, Westport	0 (0)			0 (0)			0 (0)			2	- 1	0	0 (0)			0 (0)				MAS
Winsegansett																				
Heights, Fairhaven	0			0			0			0			0			0				LCE
ELIZABETH ISLANDS																				

	Rose	eate T	ern	Comr	non T	ern	Arct	ic Tei	rn	Le	ast Ter	'n	Black	Skin	nmer	Laughi	ing G	ull		
	No.			No.			No.			No.			No.			No.				
Site	pairs	M ^a	Pb	pairs	М	P	pairs	М	Р	pairs	M	P	pairs	М	Р	pairs	М	Р	Notes	Source
Barges Beach,																				
Cuttyhunk Is.,										[24]	[A]									
Gosnold	0 (0)			0 (0)			0 (0)			24	Α	Р	0 (0)			0 (0)				MAS
Churches Beach,																				
Cuttyhunk Is.,	0						0			0			0			0				
Gosnold	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Copicut Neck,																				
Cuttyhunk Is.,	0						0			0			0			0				
Gosnold	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Nashwena Island,	nd			nd			nd			nd			nd			nd				
Gosnold	(nd)			(nd)			(nd)			(nd)			(nd)			(nd)				
Pasque Island,	nd			nd			nd			nd			nd			nd				
Gosnold	(nd)			(nd)			(nd)			(nd)			(nd)			(nd)			A pair of	
Penikese Island, Gosnold	15	N	0.33 fl/n	887	N	0.28 fl/n	1.5* (0)	N	p*	0 (0)			0 (0)			0 (0)			Arctic Terns nested but its 2 chicks did not survive to fledging. One Arctic Tern nested with a Common Tern producing 1 hybrid chick that likely fledged.	DFW
West Pd., Cuttyhunk	0						0			0			0			0				
Is., Gosnold	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
MARTHA'S																				
VINEYARD																				
Arruda's Point / The																				
Jetties, Edgartown	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				TTOR
Beach Road	0						0			0			0			0				
Causeway, Tisbury	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Bend in the Road,	0						0			0			0			0				
Edgartown	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS

	Rose	eate T	ern	Comr	non T	ern	Arct	ic Ter	'n	Le	east Ter	n	Black	Skin	nmer	Laugh	ing G	ull		
	No.			No.			No.			No.			No.			No.				
Site	pairs	Ma	Pb	pairs	М	Р	pairs	М	Р	pairs	M	P	pairs	М	Р	pairs	М	Р	Notes	Source
Big Gravel Island,	0						0			0			0			0				
Oak Bluffs	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Black Point Pond,	0						0			0			0			0				
Chilmark	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				BW
Caleb's Pond,	nd			nd			nd			nd			nd			nd				
Edgartown	(nd)			(nd)			(nd)			(nd)			(nd)			(nd)				
Cape Higgon,	0						0			0			0			0				
Chilmark	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				BW
Cape Pogue Elbow /																				
The Narrows,																				
Edgartown	0 (0)			0 (0)			0 (0)			58	I	Р	0 (0)			0 (0)				TTOR
Cedar Tree Neck,																				
West Tisbury	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				BW
Chilmark Pond,										[1] 0										
Chilmark	0 (0)			0 (0)			0 (0)			(0)	[N]	0	0 (0)			0 (0)				BW
Coskata-East Beach,																				
Nantucket	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				TTOR
Cow Bay, Edgartown	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				MAS
Cracktuxet Trust	0						0			0			0			0				
Beach, Edgartown	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				BW
Dogfish Bar,										34										
Aquinnah	0 (0)			0 (0)			0 (0)			(5)	A (I)	Р	0 (0)			0 (0)				BW
Dougs Cove																				
Preserve, Oak Bluffs	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				MVLBC
East Tashmoo,	0						0			0			0			0				
Tisbury	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
										[24]	[A]									
Eastville Beach, Oak										14	Α									
Bluffs	0 (0)			0 (0)			0 (0)			(0)	(A)	0	0 (0)			0 (0)				MAS
Edgartown Great																				
Pond (Job's Neck),																				
Edgartown	0 (0)			0 (0)			0 (0)			3 (1)	I (I)	0	0 (0)			0 (0)				BW
Edgartown Great																				
Pond, Edgartown	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				MVLBC

	Rose	eate T	ern	Comr	non T	ern	Arct	ic Ter	'n	Le	ast Ter	'n	Black	Skin	nmer	Laugh	ing G	ull		
	No.			No.			No.			No.			No.			No.				
Site	pairs	Mª	P _p	pairs	М	P	pairs	М	Р	pairs	M	P	pairs	М	P	pairs	М	Р	Notes	Source
Edys Island,																				
Chilmark	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				MAS
Harthaven Beach,	0						0			0			0			0				
Oak Bluffs	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
Haystack Island,																				
Edgartown	0 (0)			48	Α	F	0 (0)			0 (0)			0 (0)			0 (0)				MAS
Lamberts Cove,	0						0			0			0			0				
West Tisbury	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				BW
Leland / East Beach,																				
Edgartown	0 (0)			0 (0)			0 (0)			64	Α	0	0 (0)			0 (0)				TTOR
Lighthouse Beach,										[1*]									Least Terns courted sporadically during the season but no eggs were	
Edgartown	0 (0)			0 (0)			0 (0)			0 (0)	[N]	0	0 (0)			0 (0)			detected.	BW
Little Beach / Eel Pd., Edgartown	0 (0)			41 (70)	A (A)	Р	0 (0)			346	Α	F,G	12	AI	1.2 fl/pr	0 (0)				BW
Little Gravel Island, Oak Bluffs	0			0			0			0			0			0				MAS
Little Neck, Edgartown	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				TTOR
Lobsterville Beach, Aquinnah	0 (nd)			0 (nd)			0 (nd)			0 (nd)			0 (nd)			0 (nd)				MAS
Long Point, West Tisbury Lucy Vincent Beach,	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				TTOR
Chilmark	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				BW
Mink Meadows / West Chop, Tisbury	0 (0)			0 (0)			0 (0)			[24] 1	[A] A	0	0 (0)			0 (0)				MAS

	Rose	eate T	ern	Comr	non T	ern	Arct	ic Tei	'n	Le	ast Ter	n	Black	Skim	nmer	Laughi	ing G	ull		
	No.			No.			No.			No.			No.			No.				
Site	pairs	Ma	Pb	pairs	М	P	pairs	М	Р	pairs	М	P	pairs	М	Р	pairs	М	Р	Notes	Source
Nomans Land Island	0*			[18]	[N]														On 6/18 six ROST landed and preened in colony area but there	
NWR, Chilmark	(0)			43 (0)	N	0	0 (0)			0 (0)			0 (0)			0 (0)			was no sign of nesting.	USFWS
Norton Point Beach, Edgartown	19	А	0	173	А	0	0 (0)			618	Α	0,P	0 (0)			0 (0)			or mesting.	TTOR
Oyster Pond,																				
Edgartown	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				BW
Paqua Pond, Edgartown	nd (0)			nd (0)			nd (0)			nd (0)			nd (0)			nd (0)				BW
Paul's Point, West Tisbury	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				BW
Pease's Pond, Edgartown	[0] nd (nd)			[0] nd (nd)			[0] nd (nd)			[0] nd (nd)			[0] nd (nd)			[0] nd (nd)				BW
Philbin Beach, Aquinnah	0 (nd)			0 (nd)			0 (nd)			0 (nd)			0 (nd)			0 (nd)				BW
Quansoo, Chilmark	0 (0)			0 (0)			0 (0)			60 (40)	A (A)	0,G	0 (0)			0 (0)				MAS
Sarsons Island, Oak Bluffs	0 (0)			2 (1)	A (N)	0	0 (0)			0 (0)			0 (0)			0 (0)				MAS
Seven Gates, West Tisbury	[0] nd (nd)			[0] nd (nd)			[0] nd (nd)			[0] nd (nd)			[0] nd (nd)			[0] nd (nd)				BW
South Beach,	0						0			0			0			0				
Edgartown	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				BW
Spring Point, Chilmark	0 (nd)			0 (nd)			0 (nd)			0 (nd)			0 (nd)			0 (nd)				BW
Squibnocket Beach/Long Beach, Chilmark	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				BW

	Rose	eate T	ern	Comr	non T	ern	Arct	ic Ter	'n	Le	ast Ter	n	Black	Skin	nmer	Laughi	ing G	ull		
	No.			No.			No.			No.			No.			No.				
Site	pairs	M ^a	Pb	pairs	М	P	pairs	М	Р	pairs	M	P	pairs	М	P	pairs	М	Р	Notes	Source
Stonewall Beach,										[1] 0	[N]									
Chilmark	0 (0)			0 (0)			0 (0)			(2)	(1)	0	0 (0)			0 (0)				BW
Sylvia State Beach,																				
Edgartown	0			0			0			0			0			0				MAS
Sylvia State Beach,										[40]	[A]									
Oak Bluffs	0 (0)			0 (0)			0 (0)			1	Α	Р	0 (0)			0 (0)				MAS
Tisbury Great Pond,																				
West Tisbury	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				MVLBC
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
West Tashmoo,																				
Tisbury	0 (0)			0 (0)			0 (0)			10	I	Р	0 (0)			0 (0)				BW
Yorke-Allen Point,	0						0			0			0			0				
Edgartown	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
NANTUCKET																				
Capaum Pond,																				
Nantucket	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				NCF
Coatue, Nantucket	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				NCF
Coskata-West																				
Beach, Nantucket	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				TTOR
East Hallowell St.,	0						0			0			0			0				
Nantucket	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
											[N]									
										[10]	N									
Eel Point, Nantucket	0 (0)			0 (1)	(N)	0	0 (0)			4 (6)	(N)	0	0 (0)			0 (0)				NCF
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
Little Neck,																				
Nantucket	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				NCF
Long Pond,																				
Nantucket	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				NCF

	Rose	eate T	ern	Comr	non T	ern	Arct	ic Ter	rn	Le	ast Ter	'n	Black	Skin	nmer	Laugh	ing G	ull		
	No.			No.			No.			No.			No.			No.				
Site	pairs	M ^a	Pb	pairs	М	Р	pairs	М	Р	pairs	M	P	pairs	М	Р	pairs	М	Р	Notes	Source
Low Beach,	nd			nd			nd			nd			nd			nd				
Nantucket	(nd)			(nd)			(nd)			(nd)			(nd)			(nd)				
Monomoy Creeks,																				
Nantucket	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				NCF
Muskeget Is., Nantucket Muskeget Shoals /	[0*] nd (0)			[0*] nd (560*)	(A)		nd (0)			nd (10)	(A)		nd (0)			nd (0)			During 5/25 - 6/5, 75 Roseate and 250 Common terns were present but showed no signs of nesting. On 6/28, Common Tern copulation, fish exchanges, and 1 nest confirmed; proportion of flock that was staging vs. prenesting is uncertain.	MAS, Veit
Minimusk, Nantucket	nd (nd)			nd (nd)			nd (nd)			nd (nd)			nd (nd)			nd (nd)				
Nantucket Nantucket NWR (Great Point), Nantucket	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				USFWS
Polpis Harbor (Medouie Creek and Pocomo Meadows), Nantucket	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				NCF
	nd			nd			nd			nd			nd			nd				
Quaise, Nantucket	(nd)			(nd)			(nd)			(nd)			(nd)			(nd)				

	Rose	eate T	ern	Comr	non T	ern	Arct	ic Tei	'n	Le	ast Ter	n	Black	Skin	nmer	Laughi	ing G	ull		
	No.			No.			No.			No.			No.			No.				
Site	pairs	Mª	P _p	pairs	M	P	pairs	М	Р	pairs	M	P	pairs	М	Р	pairs	М	Р	Notes	Source
Quidnet/Sesachacha Pond/Greenhills,	0 (0)			0 (0)			0 (0)			32*		0	0 (0)			0 (0)			Least Terns courted, but no eggs were	
Nantucket	0 (0)			0 (0)			0 (0)			(0)	Α	0	0 (0)			0 (0)			detected.	MAS
Sheep Pond, Nantucket	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				NCF
Siasconset, Nantucket	nd (nd)			nd (nd)			nd (nd)			nd (nd)			nd (nd)			nd (nd)				
Smith Point / Esther Is., Nantucket	0 (0)			2	N	0	0 (0)			298 (410)	N (N)	0,P	0 (0)			0 (0)				Nantucket
Smith's Point, Nantucket	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				MAS
South Pastures (Madequecham Valley to Tom Nevers), Nantucket	0 (nd)			0 (nd)			0 (nd)			0 (nd)			0 (nd)			0 (nd)				NCF
Squam Pond, Nantucket	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				NCF
The Galls, Nantucket	0 (0)			0 (0)			0 (0)			0 (7)	(N)	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)			[1] 1	[N] N	E	0 (0)			0 (0)			0 (0)			0 (0)				NCF
Tom Nevers, Nantucket	0 (0)			0 (0)			0 (0)			38	N	Р	0 (0)			0 (0)				Nantucket
Tom Nevers / Wanoma, Nantucket	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				MAS
Tuckernuck Is Bigelow's Point, Nantucket	0 (0)			0 (10)	U	0	0 (0)			0 (0)			0 (0)			0 (0)				TLT

	Rose	eate T	ern	Comr	non Te	ern	Arct	ic Ter	'n	Le	ast Ter	n	Black	Skin	nmer	Laugh	ing G	ull		
	No.			No.			No.			No.			No.			No.				
Site	pairs	M ^a	Pb	pairs	M	Р	pairs	М	P	pairs	М	Р	pairs	М	P	pairs	М	Р	Notes	Source
Tuckernuck Is																				
Whale Point,				[10]	[۱]					[40]	[E]									
Nantucket	0 (0)			10	IN	0	0 (0)			40	AN	0	0 (0)			0 (0)				TLT
UMass Field Station, Nantucket	0 (0)			[3] 3	[N] N	E	0 (0)			0 (0)			0 (0)			0 (0)				NCF
Washing Pond Rd.,	0						0			0			0			0				
Nantucket	(nd)			0 (nd)			(nd)			(nd)			(nd)			(nd)				MAS
																			Common Terns courted but no scrapes or eggs	
Wauwinet,	0 (0)			_ 4			0 (0)			11	Α (Δ)	_	0 (0)			0 (0)			were	
Nantucket	0 (0)			5*	Α	0	0 (0)			(34)	(A)	0	0 (0)			0 (0)			detected.	MAS
Western Ave, Nantucket	0 (0)			0 (0)			0 (0)			0 (0)			0 (0)			0 (0)				MAS
TOTAL 2019 NESTING PAIRS	2066			20291			1.5			4289			12			3659				
TOTAL 2018 NESTING PAIRS	2310			19729			0.5			3492			11			3272				
% CHANGE FROM 2018	-10.6			2.8			200			22.8			9.1			11.8				

^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 Environment; 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.