

**INVENTORY OF TERNS, LAUGHING GULLS, AND BLACK SKIMMERS
NESTING IN MASSACHUSETTS IN 2002**



Photo by C. S. Mostello

Prepared by:

Carolyn S. Mostello
Massachusetts Division of Fisheries and Wildlife
Natural Heritage and Endangered Species Program
Rte. 135, Westborough, MA 01581

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Abstract

Cooperators in Massachusetts surveyed 115 coastal sites in 2002 for the presence of breeding terns, Laughing Gulls (*Larus atricilla*), and Black Skimmers (*Rhynchops niger*); 72 sites were occupied by nesting birds of one or more of these species. Roseate Terns (*Sterna dougallii*) decreased 14.0% from 2001, to 1,460 pairs, a decline presumably precipitated by predation at Bird I. Roseate productivity was fair. The Common Tern (*Sterna hirundo*) was the most abundant breeding tern species, with 13,744 pairs reported (a 4.4% decrease from 2001). Common Tern productivity was poor at the three largest colonies due to predation and starvation. Least Terns (*Sterna antillarum*) numbered 2,796 pairs, an 18.2% decrease over an all-time high in 2001. Notably, 2002 marked the collapse, as a result of predation, of the Dunbar Point (Kalmus Park) Least Tern colony. Laughing Gulls decreased 16.3% to 1,106 pairs this year, and, with the demise of the Nauset-New I. colony, nested at just one site. Arctic Terns (*Sterna paradisaea*) continued at trace levels. No Black Skimmers nested in Massachusetts in 2002.

Introduction

Terns, Laughing Gulls, and Black Skimmers are part of Massachusetts' diverse coastal waterbird fauna. Each year in Massachusetts, these species are protected and monitored by a network of cooperators ranging from independent volunteers to representatives of private organizations and governmental agencies. Monitoring and management are important because of the vulnerability of coastal waterbirds to disturbance and mortality, and because of the overall rarity of some species: the Roseate Tern is federally and state-listed as Endangered, and Common, Least, and Arctic terns are state-listed as Special Concern. This report summarizes data on distribution, abundance, and productivity of terns, Laughing Gulls, and Black Skimmers during the 2002 nesting season. Tern restoration programs are also discussed.

Methods

Timing of Census: Depending upon the species, either one or two censuses are conducted. The "A-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-count. 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 whichever species with which it is nesting. Least Tern colonies ideally are visited multiple times during the A-count window, and maximum estimates are reported. The "B-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, 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. 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 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 to good, or excellent. In a few cases, typically for Roseate and Common terns at large colonies, quantitative estimates of productivity are provided.

Reporting: Observers completed a standard “Massachusetts Tern Census Form”. This form requests the following information for each site surveyed: observer name and affiliation, contact information, ownership of site, dates of A- and B-counts, number of pairs observed, survey method, quality of survey, productivity estimates, dates of first eggs laid and first hatched, and evidence of predation, overwash, or disturbance.

Quality Control: All census forms are reviewed by *MassWildlife*, and observers are contacted to obtain missing data and clarify ambiguities.

Results and Discussion

Census results for each site are summarized in Table 1.

Roseate Tern: Roseate Terns declined 14% to 1,460 pairs (vs. 1,697 pairs in 2001); this is the lowest level since 1997, when 1,454 pairs were counted. The presence of a Great Horned Owl in the Bird I. colony presumably precipitated this drop. Likely in response to the owl, Roseates left Bird I., Marion (which experienced a 52% decrease from 2001 numbers) and many probably moved to nearby Ram I., Mattapoisett (which experienced a 52% increase over 2001 numbers). Neither Ram I. nor any other site in the state absorbed all of the Bird I. émigrés. Roseate numbers were down 6% (3,481 vs. 3,717 pairs) for the Northeast population as a whole, driven in large part by the decline at Bird I. The only other Roseate Tern nesting site in Massachusetts this year was at S. Monomoy I., Chatham, where three pairs nested. Fair productivity (0.9-1.0 chicks/nest) was reported at the three Roseate nesting colonies. The mixed species colony at Nauset-New I., Orleans, a site traditionally battered by predators, collapsed this year. Formerly this site supported a few pairs of Roseates along with Laughing Gulls, Common Terns, Arctic Terns, and Black Skimmers. Since 1985, Roseate numbers in the state have fluctuated between 1,344 and 2,124 pairs, averaging 1,624 pairs during this time period (Fig. 1).

Common Tern: Common Terns declined slightly (4.4%) in the state with 13,744 pairs (vs. 14,378 in 2001) distributed at 31 sites. The mega-colony at S. Monomoy I. continued to grow (8,032 vs. 7,807 in 2001). As for Roseate Terns, the Common Tern colony at Bird I. shrunk (1,702 vs. 2,136), while the Ram I. colony expanded (2,307 vs. 1,890), most likely as a result of Great Horned Owl predation at Bird I. Common Tern productivity was poor to abysmal at these three colonies, which reported 0.72, 0.20, and 0.39 chicks fledged/nest, respectively. Predation was a limiting factor at S. Monomoy I. (Black-crowned Night Heron, coyote, Northern Harrier, Herring and Great Black-backed gulls, Peregrine Falcon) and Bird I. (Great Horned Owl, Canada Goose, Great Black-backed Gull). Starvation of chicks at Bird I. and Ram I. was a significant contributor to low productivity.

Other large colonies in the state this year included: Gray's Beach, Yarmouth (324 pairs vs. 865 in 2001), Penikese I., Gosnold (279 vs. 278; 0.52 chicks fledged/nest), Haystack Point, Edgartown (254 vs. 224), Dead Neck-Sampson I., Barnstable (223 vs. 133), and Sandy Neck, Barnstable (109 vs. 0). This was the first reported nesting of Common Terns at Sandy Neck since 1997, when 35 pairs nested. The large decline in pairs at Gray's Beach was attributed to mammalian predation, particularly by coyotes. Common Terns, absent from Nauset-New I. this year, numbered 493 pairs in 2001. Until 1999, when 5,000 pairs deserted the site due to fox presence, Plymouth Beach hosted the state's largest Common Tern colony; this year just 50 pairs nested. During the period from 1985 to present, the overall trend for the state's Common Tern population is positive (Fig. 1).

Least Tern: The Least Tern is Massachusetts' most widely distributed tern, nesting at 54 sites this year. Overall numbers decreased considerably (18.2%) this year, down from a record high of 3,420 pairs in 2001 to 2,796 in 2002. Given the Least Tern's propensity for nesting on mainland beaches where it is prone to disturbance, favored colony sites are always in flux. This year, the largest colonies occurred at Sylvia State Beach, Oak Bluffs (520 pairs vs. 370 in 2001; poor productivity due to Great Black-backed Gull and skunk predation); Dead Neck-Sampson I., Barnstable (451 vs. 257; good to poor productivity depending on subcolony – a variety of predators was present); and Crane Beach, Ipswich (313 vs. 155; excellent productivity in subcolony surrounded by electric fence, good productivity elsewhere). Last year, Dunbar Point (Kalmus Park), Barnstable (4 vs. 599); Tuckernuck I., Nantucket (0 vs. 432); and Sylvia State Beach were the largest. Kalmus Park, a dredge spoil deposit beach, had been a Least Tern stronghold since 1998; the colony peaked at 1,420 pairs in 1999. Other sizeable colonies in 2002 included: North River Mouth, Scituate (163 vs. 170); Siasconset, Nantucket (160 vs. 86); Allen's Pond, Dartmouth (153 vs. 80); Esther I.-Smith Point, Nantucket (148 vs. 0); and Sandy Neck, Barnstable (132 vs. 134). Since 1985, numbers of Least Terns in the state have increased fairly steadily (Fig. 1). Numbers this year were the lowest since 1996 (2,676 pairs), but because Least Tern colonies are inherently unstable, it is impossible to pinpoint which birds are "missing".

Arctic Tern: Arctic Terns nested at just two sites this year, Plymouth Beach and Penikese I., that each supported two pairs. Another territorial pair traveled between Nauset-New I. and Nauset-Eastham, but did not nest. Penikese I. produced the only Arctic Tern fledging in the state this year. The Arctic Tern is at the southernmost limit of its breeding range in Massachusetts, and there has been a gradual attrition of birds in the state during the period from 1985 to present (Fig. 2).

Laughing Gull: S. Monomoy I., with 1,106 pairs, was the only site in Massachusetts where Laughing Gulls nested this year. Productivity was described as good to fair; a diverse suite of predators operates on this large island. Overall, this species decreased 16.3% from 1,322 pairs in 2001. Last year, Nauset-New I. supported 517 pairs. Analysis of data from 1985 to present reveals wide fluctuations in numbers (from 542 to 1356 pairs in 1986 and 1989, respectively) with an average of 970 pairs (Fig. 3).

Black Skimmer: No Black Skimmers nested in Massachusetts in 2002. In recent years, small numbers have nested at Nauset-New I. and S. Monomoy I. This species is at the northernmost

limit of its breeding range in Massachusetts, and during the 1985-2002 period, it has never numbered more than six pairs (Fig. 2).

Restoration Programs: Three active restoration programs to restore Common and Roseate terns to historical nesting sites are currently underway in Massachusetts. All involve discouragement of nesting gulls, which displace terns from nesting sites, from portions of islands. Monomoy National Wildlife Refuge's Avian Diversity Program, initiated in 1996, has been tremendously successful in increasing numbers of Common Terns at S. Monomoy I.: over 8,000 pairs now nest there in comparison to 63 pairs in 1995. An accompanying surge in Roseate Terns, however, has yet to come; since the program began, numbers of this species peaked at 27 pairs in 1999. *MassWildlife's* Penikese I. tern restoration program began in 1998, and has had encouraging, yet more modest, success: 279 pairs of Common Terns nested this year as compared to 8 pairs in 1997. Predation on eggs early in the season this year may have discouraged settlement by terns; numbers were essentially the same as in 2001. Roseates, while present nearly daily on the fringes of the colony, have not yet joined the nesting colony, but this could occur at any time.

The Monomoy and Penikese programs exemplify the general reluctance of Roseates to colonize "new" sites, preferring instead to remain in highly aggregated nesting situations (nearly 100% of Roseates in Massachusetts nest at just two sites, and approximately 90% of Roseates in the Northeast population are concentrated at just three sites). Nevertheless, should traditional nesting locations become unsuitable, it is important to have suitable alternative sites for these birds. Important components of "suitability" include the presence of Common Terns (without which Roseates in the Northeast will not nest) and a lack of predators. Historically, offshore islands such as Penikese generally have been favored by Common and Roseate terns because of a relative lack of predation in comparison to mainland and nearshore sites.

Another historically important offshore island for terns is Muskeget I., the location of the newest restoration program in the state. This site, spontaneously recolonized by terns in 1999, has been actively managed since 2000. Numbers of Common Terns rose to 68 pairs in 2001, but this year just four pairs were present during the census. Predation is a limiting factor at this site. In particular, a Short-eared Owl (state-listed as Endangered) has disrupted the colony the past two years; Great Black-backed Gull predation has also been significant. Three pairs of Roseates appeared attached to the site in 2002, but none nested. (Five pairs nested in 1999.)

Acknowledgements

I would like to thank the many individuals, organizations, and agencies that dedicated their time and efforts to managing and monitoring coastal waterbirds in Massachusetts, and that contributed data for this report. Without this network of cooperators, our knowledge of the status of these birds in the state would be woefully incomplete.

Table 1. Numbers of pairs of terns, Laughing Gulls, and Black Skimmers nesting in Massachusetts in 2002.

[illegible]

COLONY NUMBER ^a	COLONY NAME, TOWN	Roseate Tern		Common Tern		Arctic Tern		Least Tern		Black Skimmer		Laughing Gull		Censusing Agency ^c
		No. pairs	M ^b	No. pairs	M	No. pairs	M	No. pairs	M	No. pairs	M	No. pairs	M	
324042	Snake I., Winthrop			15	E									NPS, Zende
324042.1	Logan Airport, Boston													Smith
324049.1	Lovell I., Boston													MAS, NPS
324052.2	Rainsford I., Boston							25	N					MAS, NPS
324053	Hog I. Pier ("Spinnaker I."), Boston			80	N									MAS
SOUTH SHORE														
324057	North R. Mouth, Scituate			3	N			163	N					MAS
324058	Duxbury Beach, Duxbury							23	N					MAS
352001	Plymouth Beach, Plymouth			50	N	2	3	18	N					MAS
352001.1	Ellisville Harbor, Plymouth							6	N					MAS
UPPER CAPE														
352002	N. Sandwich Area (Town Beach-Springhill and Old Harbor Beaches							48	A					MAS
352003	Scorton Creek, Sandwich							16	A					MAS
352004	Craigville-Long Beach, Barnstable													MAS
352004.1	Squaw I., Barnstable													MAS
352005	Dunbar Point (Kalmus Park), Barnstable							4	N					MAS
352005.1	Great I., Yarmouth													MAS
352006	Sandy Neck, Barnstable			109	A			132 (132)	A(A)					Barnstable
352007	Gray's Beach, Yarmouth			324	N			(5)	(N)					MAS
352008	West Dennis Beach, Dennis							74	N					MAS

COLONY NUMBER ^a	COLONY NAME, TOWN	Roseate Tern		Common Tern		Arctic Tern		Least Tern		Black Skimmer		Laughing Gull		Censusing Agency ^c
		No. pairs	M ^b	No. pairs	M	No. pairs	M	No. pairs	M	No. pairs	M	No. pairs	M	
352017	Dead Neck-Sampson I., Barnstable			223	N			451	N					MAS
352017.1	Popponeset Spit, Mashpee													MAS
352018	South Cape Beach- Waquoit, Mashpee													DEM
352018.1	Washburn I., Falmouth													DEM
LOWER CAPE														
324060	Wood End-Long Point Area, Provincetown							22 (84)	N(N)					NPS
324061	Race Point Light Area, Provincetown			1	N			35 (32)	N(N)					NPS
324062	Race Point CG Station, Provincetown													NPS
324062.1	Mission Bell, Provincetown							34 (23)	N/A(N)					NPS
324062.2	Tasha's Area, Provincetown							(4)	(N)					NPS
324062.3	Beach Point, Pilgrim Beach, Provincetown							1	N					MAS
324063	High Head, Truro							10 (16)	N(N)					NPS
352009	Nauset-Orleans (Chatham line north to Nauset Harbor Inlet)			2	N			62 (6)	A(N)					Orleans
352010	Nauset-New Island, Orleans					1 ^d	A							NPS
352011	Nauset-Eastham("Coast Guard Beach" & "Plover I.")			20	N	1 ^d	A	3 (1)	N(N)					NPS
352012	Marconi Beach, Wellfleet							16 (32)	A(A)					NPS

COLONY NUMBER ^a	COLONY NAME, TOWN	Roseate Tern		Common Tern		Arctic Tern		Least Tern		Black Skimmer		Laughing Gull		Censusing Agency ^c
		No. pairs	M ^b	No. pairs	M	No. pairs	M	No. pairs	M	No. pairs	M	No. pairs	M	
352012.1	Pamet Harbor Bar, Truro							78	N					Truro, MAS
352012.2	Great I.-Jeremy Pt., Wellfleet							8 (16)	N(N)					NPS
352012.3	S. Sunken Meadow, Eastham ^e							(40)	(N)					MAS
352013	Nauset-Chatham (incl. S. Beach I.)							50 (15)	A(N/A)					MAS, DFW, Chatham
352013.1	Tern I., Chatham													MAS
352014	Harding's Beach and Point, Chatham													MAS
352015	Monomoy-North, Chatham			36	N									USFWS
352016	Monomoy-South, Chatham	3 (0)	N	8032	N			6 (50)	N(N)			1106	N	USFWS
BUZZARDS BAY														
352041	Nashawena I., Gosnold			7	N									MDFW
352041.1	Pasque I., Gosnold							12	E/A					MDFW
352042	Penikese I., Gosnold			279 (42)	N	2	N							MDFW
352042.1	Cuttyhunk I., Gosnold							10	A					MDFW
352043	Ram I., Mattapoissett	952 (46)	N(N)	2307	N									MDFW
352043.1	Strawberry Pt., Mattapoissett													MDFW
352044	Fish I., Fairhaven													MDFW
352044.1	Long I., Fairhaven													MDFW
352044.2	West I., Fairhaven													LCE
352044.3	Winsegansett Hts., Fairhaven							5	A					LCE
352044.5	So. Shore Marshes WMA, Little Bay,							3	N					MDFW

COLONY NUMBER ^a	COLONY NAME, TOWN	Roseate Tern		Common Tern		Arctic Tern		Least Tern		Black Skimmer		Laughing Gull		Censusing Agency ^c
		No. pairs	M ^b	No. pairs	M	No. pairs	M	No. pairs	M	No. pairs	M	No. pairs	M	
	Fairhaven													
352045	Bird I., Marion	505 (40)	N(N)	1702	N									MDFW
352045.1	Salter's Pt. and Pd., Dartmouth							4	A/N					LCE
352045.2	Demarest Lloyd State Park, Dartmouth							4 (7)	A(A)					LCE
352046	Barney's Joy-Allen's Pd.- Little Beach, Dartmouth			1	N			153 (302)	N(N)					LCE
352046.1	Gooseberry Neck, Westport													LCE
352047.1	Speaking Rock, Westport													LCE
352048	Cockeast Pd.-Acoaxet, Westport													TNCRI
352048.1	Richmond Pd., Westport													TNCRI
352048.2	Horseneck Beach, Westport													LCE
352054.1	Bay Point, S. Swansea													Waring
MARTHA'S VINEYARD														
352030	Cape Poge Elbow, Edgartown							24	A					TTOR
352031	Little Neck, Edgartown													TTOR
352031.1	East Beach-Dike Bridge, Edgartown													TTOR
352032	Wasque, Edgartown							6	N					TTOR
352033	Norton Beach ("Katama"), Edgartown													Dukes Co.
352033.1	Edgartown Great Pd., Edgartown													SMF

COLONY NUMBER ^a	COLONY NAME, TOWN	Roseate Tern		Common Tern		Arctic Tern		Least Tern		Black Skimmer		Laughing Gull		Censusing Agency ^c
		No. pairs	M ^b	No. pairs	M	No. pairs	M	No. pairs	M	No. pairs	M	No. pairs	M	
352034	Sarson I., Sengekontacket Pd., Oak Bluffs													MAS
352034.1	Haystack Pt., Sengekontacket Pd., Edgartown			254	A									SMF
352034.2	Little Beach, Edgartown							(31)	(N)					SMF
352035	Sylvia State Beach, Oak Bluffs							520 (29)	N(N)					Dukes Co.
352035.1	Harthaven Beach, Oak Bluffs													SMF
352036	Watcha Pd., West Tisbury													SMF
352036.1	Oyster Pd., Edgartown													SMF
352037	Quansoo Area (Tisbury Great Pond, W. Tisbury & Black Point Pond, Chilmark)							2	N					SMF
352037.2	Chilmark Pd., Chilmark							4 (18)	N(N)					SMF
352038	Lobsterville (incl. "Dogfish Bar"), Gay Head							(3)	(N)					SMF
352038.1	Menemsha Pd., Gay Head-Chilmark (encompasses Edys I., Chilmark)													SMF
352038.2	Stonewall Beach, Chilmark							6	N					SMF
352038.3	Long Beach, Gay Head & Squibnocket Beach, Chilmark													SMF
352039	Nomans Land, Chilmark													USFWS

COLONY NUMBER ^a	COLONY NAME, TOWN	Roseate Tern		Common Tern		Arctic Tern		Least Tern		Black Skimmer		Laughing Gull		Censusing Agency ^c
		No. pairs	M ^b	No. pairs	M	No. pairs	M	No. pairs	M	No. pairs	M	No. pairs	M	
352040	Tashmoo, Tisbury							3	N					SMF
352040.1	Eastville Beach, Oak Bluffs							12 (35)	N(N)					Dukes Co.
352040.2	Lamberts Cove-James Pd., W. Tisbury	This site not censused this year												
352040.3	Mink Meadows, Tisbury							(15)	(N)					SMF/MAS
NANTUCKET														
352020	Great Point (including "The Galls"), Nantucket			1	N			60 (37)	A(A)					TTOR
352021	Coskata-Coatue, Nantucket							4 (35)	A(N)					NCF
352021.1	Squam Head & Pond, Nantucket													NCF
352022	Quidnet (including Sesachacha Pd.), Nantucket							50 (112)	E(N)					MAS
352023	Siasconset (Sankaty-Low Beach), Nantucket							160	N					NMCRD, NLB
352023.1	Tom Nevers Head, Nantucket													NMCRD
352024	Quaise, Nantucket							(72)	(N)					NCF
352025.1	Surfside, Nantucket													MAS
352025.2	Cisco Beach, Nantucket							(70)	(N)					NCF
352025.3	Eel Point, Nantucket													NCF
352026	Esther I.-Smith Pt., Nantucket			4	A			148 (300)	N(N)					NMCRD
352027	Tuckernuck I., Nantucket													Veit
352028	Muskeget I., Nantucket			4	N			(22)	(N)					Veit

COLONY NUMBER ^a	COLONY NAME, TOWN	Roseate Tern		Common Tern		Arctic Tern		Least Tern		Black Skimmer		Laughing Gull		Censusing Agency ^c
		No. pairs	M ^b	No. pairs	M	No. pairs	M	No. pairs	M	No. pairs	M	No. pairs	M	
	TOTAL 2002 NESTING PAIRS:	1460		13744		4		2796		0		1106		
	TOTAL 2001 NESTING PAIRS:	1697		14378		7		3420		3		1322		
	PERCENT <i>DECREASE</i> FROM 2001:	14.0		4.4		42.9		18.2		100.0		16.3		

^a Colony numbers follow or are adapted from: Erwin, R.M. and C.E. Korschgen. 1979. Coastal Waterbird Colonies: Maine to Virginia, 1977. An Atlas Showing Colony Locations and Species Composition. USFWS, Biological Services Program, FWS/OBS-79/08.

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

^c In addition to the names of towns, counties, and individuals, the following abbreviations are used: DEM=Massachusetts Department of Environmental Management; DFW=Massachusetts Division of Fisheries & Wildlife (MassWildlife); ECG=Essex County Greenbelt Association; LCE=Lloyd Center for the Environment; MAS=Massachusetts Audubon Society-Coastal Waterbird Program; NCF=Nantucket Conservation Foundation; NLB=Nantucket Land Bank; NMCRD=Town of Nantucket Marine and Coastal Resources Department; NPS=National Park Service; TNCRI=The Nature Conservancy - Rhode Island; SMF=Sheriff's Meadow Foundation; TTOR=The Trustees of Reservations; and USFWS=United States Fish & Wildlife Service.

^d One territorial pair of Arctic Terns was present at both Nauset-New I. and Nauset-Eastham, but did not nest. This was probably one pair that traveled between sites. It was not counted in the total number of pairs.

^e South Sunken Meadow, Eastham was assigned a colony number in 2002.

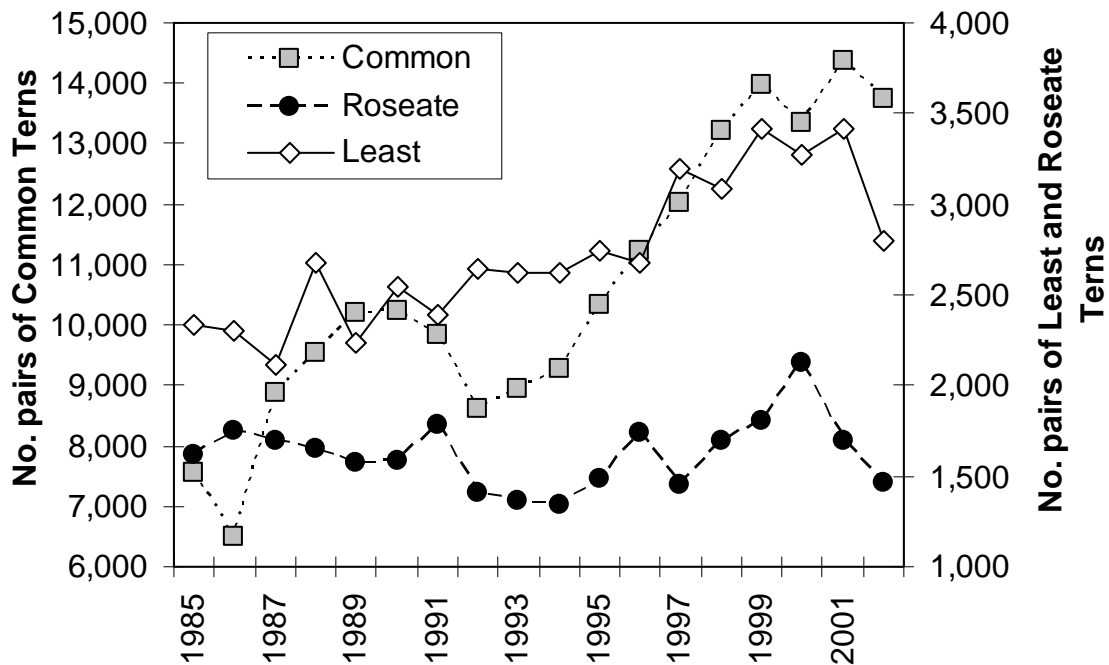


Figure 1. Numbers of nesting Common, Roseate, and Least terns in Massachusetts, 1985-2002.

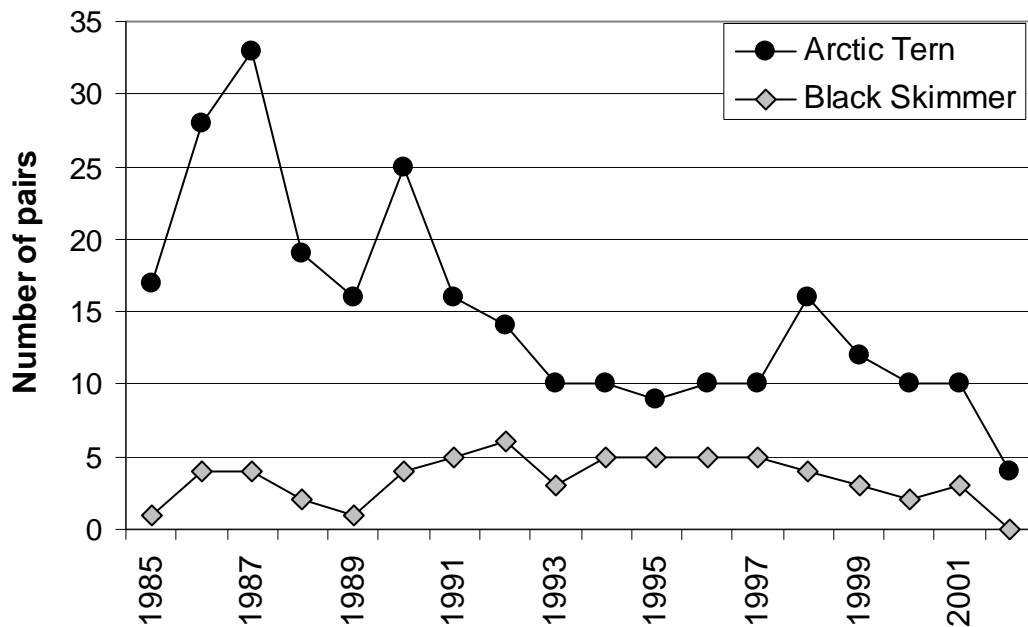


Figure 2. Numbers of nesting Arctic Terns and Black Skimmers in Massachusetts, 1985-2002.

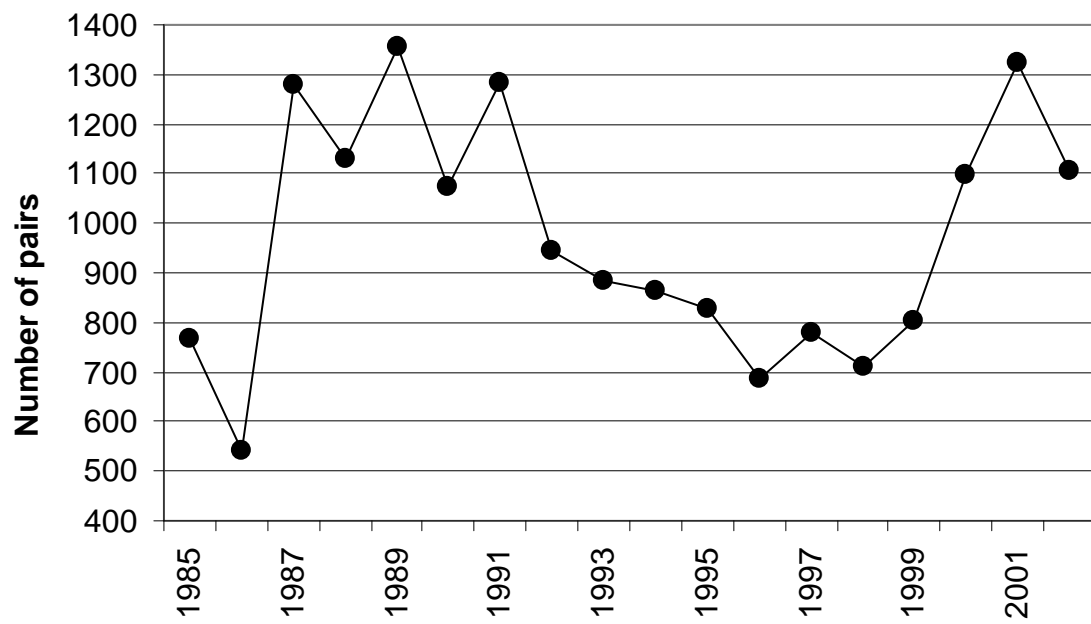


Figure 3. Numbers of nesting Laughing Gulls in Massachusetts, 1985-2002.