

SUMMARY OF THE 2013 MASSACHUSETTS PIPING PLOVER CENSUS



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ABSTRACT

This report summarizes data on abundance, distribution, and reproductive success of Piping Plovers (*Charadrius melodus*) in Massachusetts during the 2013 breeding season. Observers reported breeding pairs of Piping Plovers present at 133 sites; 121 additional sites were surveyed at least once, but no breeding pairs were detected at them. The *Index Count* (statewide census conducted 1-9 June) was 638 pairs, and the *Adjusted Total Count* (estimated total number of breeding pairs statewide for the entire 2013 breeding season) was 666 pairs. A total of 564 chicks were reported fledged in 2013, for an overall productivity of 0.87 chicks fledged per pair, based on data from 648 of 666 (97%) pairs.

INTRODUCTION

Piping Plovers are small, sand-colored shorebirds that nest on sandy beaches and dunes along the Atlantic Coast from North Carolina to Newfoundland. The U.S. Atlantic Coast population of Piping Plovers has been federally listed as *Threatened*, pursuant to the U.S. Endangered Species Act, since 1986. The species also is listed as *Threatened* by the Massachusetts Division of Fisheries and Wildlife pursuant to Massachusetts' Endangered Species Act.

Population monitoring is an integral part of recovery efforts for Atlantic Coast Piping Plovers (U.S. Fish and Wildlife Service 1996, Hecht and Melvin 2009a, b). It allows wildlife managers to identify limiting factors, assess effects of management actions and regulatory protection, and track progress toward recovery. In this report, we summarize data on abundance, distribution, and reproductive success of Piping Plovers breeding in Massachusetts in 2013, as observed and reported by a coast-wide network of cooperators.

METHODS

Monitoring and management of Piping Plovers and other coastal waterbirds in Massachusetts is carried out by wildlife biologists, seasonal shorebird monitors, beach managers, researchers, and volunteers affiliated with over 30 federal and state agencies, local municipalities, local and regional land trusts, private conservation organizations, and universities. Cooperators monitored a total of 254 sites in Massachusetts in 2013 for the presence of breeding Piping Plovers.

Abundance

We measure abundance of Piping Plovers in terms of breeding pairs, defined as pairs observed with either a nest or unfledged chicks or that exhibited site tenacity and evidence of pair bonding and territoriality for at least two weeks. We report three different measures of abundance: the *Index Count*, *Unadjusted Total Count*, and *Adjusted Total Count*. The *Index Count*, as reported since 1990, is the total

number of pairs tallied statewide each year during a 9-day count period in late May and early June, standardized each year for the entire Atlantic Coast. In 2013, the *Index Count* period was 1-9 June. The objective of the *Index Count* is to estimate population size with minimal double-counting of pairs that may move between or within sites, thereby providing an index to population trends that is likely to be more precise than counts based on observations made over the entire breeding season. The *Index Count* likely minimizes double-counting because it occurs over such a short time period. However, it probably underestimates the actual number of breeding pairs because it does not include pairs that leave the state before, arrive after, or are present but simply go undetected during the 9-day *Index Count* period.

For sites for which "0" is reported for the *Index Count* but "nd" is reported for the *Total Count*, this indicates that the site was surveyed during the *Index Count* period (1-9 June) and no breeding pairs were detected, but during the rest of the breeding season it was either not surveyed, or was surveyed too infrequently during May and June to confidently conclude that no pairs were present for at least 2 weeks.

Since 2000, we have reported two different "Total Counts". The *Unadjusted Total Count* is simply a tally of the total number of pairs reported for all sites over the course of the entire nesting season, with limited effort made to adjust for any pairs that may have been double-counted if they nested unsuccessfully at one location and then re-nested at another. We then derive an *Adjusted Total Count* by calculating the average of the *Index Count* and the *Unadjusted Total Count*, rounded to the nearest whole number of pairs.

The *Unadjusted Total Count* likely overestimates the actual population by double-counting pairs that establish nesting territories at more than one location in a given year. Without color-banded birds, however, it is impossible to accurately determine whether late-nesting pairs may have nested earlier at a different site, or simply did not arrive or begin breeding activities until June. It is too subjective, and likely inaccurate, to try to adjust the *Total Count* of pairs each year by not tallying late-nesting pairs (*i.e.*, pairs reported as "new" pairs that nested after the first week in June), based on the assumption that these birds were probably already counted earlier in the season. We believe that the *Adjusted Total Count* is the most accurate estimate of the actual number of breeding pairs in Massachusetts because it falls midway between the *Index Count* and *Unadjusted Total Count*, which we suspect slightly underestimate and overestimate, respectively, the actual breeding population.

Reproductive success

The primary measure of reproductive success that we report is *Productivity*, measured as number of chicks fledged per pair. The denominator of this ratio is the number of breeding pairs for which fledging data were reported; this includes not only pairs that successfully fledged chicks, but also pairs that cooperators believed did not nest, pairs that nested unsuccessfully (eggs did not survive to hatch), and pairs whose chicks failed to fledge. Since 2000, we have reported two different estimates of *Number of pairs with fledge data*. As with counts of breeding pairs, estimates of the number of pairs for which fledging data are reported will be biased if double-counting of pairs occurs. Double-counting will overestimate the number of pairs in the denominator of the productivity ratio, and thereby will underestimate actual productivity. To reduce the potential bias associated with double-counting, we multiply the *Unadjusted number of pairs with fledge data* (a tally of the total number of pairs with fledge data reported for all sites, with limited effort made to adjust for pairs that may have been double-counted) by the ratio of the *Adjusted Total Count* to the *Unadjusted Total Count* to arrive at the *Adjusted number of pairs with fledge data*.

Data reporting and quality control

All data were reported by cooperators who filled out a standard Massachusetts Piping Plover Census Form for each site monitored. These forms are used to report data on number of breeding pairs (*Index Count* and *Total Count*); frequency of site visits; design(s) and installation dates of predator exclosures; dates of nest discovery, completion, and hatching or failure; number of eggs on the date the nest was discovered; total numbers of eggs laid, eggs hatched, and chicks fledged; reasons for egg and chick loss, if determined; and comments regarding census results, limiting factors, and management needs. Maps of

sites showing the locations of all nests were submitted with census forms. After reviewing census forms, if necessary, we contacted cooperators to obtain missing or incomplete data, resolve inconsistencies, and clarify ambiguities.

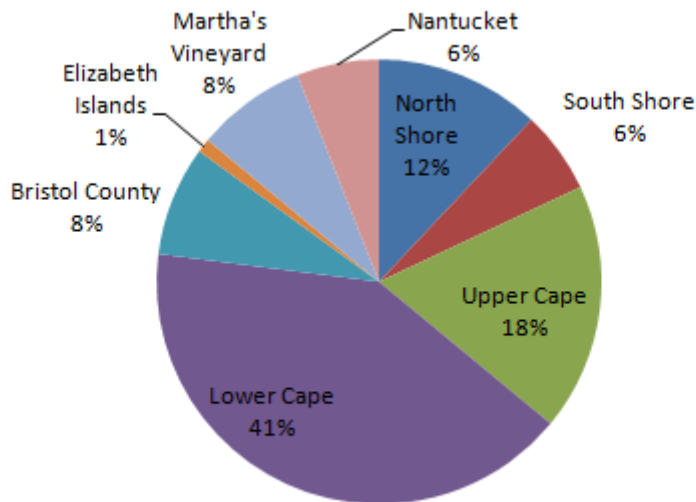
RESULTS

Observers reported breeding Piping Plovers at 133 sites in Massachusetts in 2013. An additional 121 sites were surveyed one or more times during May and June, but no breeding pairs were detected at them (Table 1).

The *Adjusted Total Count* in 2013 was 666 pairs (Table 1). The *Index Count* in 2013 was 638 pairs, or 96% of the *Adjusted Total Count*. A total of 564 chicks were reported fledged in 2013, resulting in overall productivity of 0.87 chicks fledged per pair, based on data from 648 of 666 (97%) pairs (Table 1). This represents a 2.4% increase in productivity and a 1.5% decrease in Adjusted Total Count relative to 2011.

Distribution of breeding pairs by region is shown in Figure 1. Seventeen sites with ten or more breeding pairs accounted for 53% of the Massachusetts breeding population, while 91 sites with one to three pairs accounted for 23%.

Figure 1. Distribution of piping plover breeding pairs by Massachusetts region, 2013



ACKNOWLEDGEMENTS

We extend our sincere thanks to the many biologists, seasonal shorebird monitors, beach managers, landowners, and volunteers who participated in conservation efforts on behalf of Piping Plovers and other coastal waterbirds in Massachusetts in 2013. We also thank the more than 30 state and federal agencies, local municipalities and county government, local and regional land trusts, private conservation organizations, and universities that supported their efforts. We especially thank all the individuals who participated in population monitoring and submitted the data that are summarized in this report. Carolyn Mostello, Jennifer Longsdorf, and Jon Regosin (MDFW) assisted with the finalization of this report.

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Table 1. Abundance, distribution, and productivity of Piping Plovers in Massachusetts, 2013.

Location	Number of pairs		No. chicks fledged ^c	No. pairs with fledge data ^c	Source ^d
	Index Count ^a	Total Count ^b			
NORTH SHORE					
Salisbury Beach State Reservation, Salisbury	0	0	0	0	DCR, MAS
Plum I. town beaches, Newburyport/Newbury	0	0	0	0	USFWS, DCR, MAS
Parker River NWR, Newbury/Rowley	32	32	43	32	USFWS
Sandy Point State Res., Ipswich	2.5	3.5 ^e	6	3.5 ^e	USFWS
Crane Beach, Ipswich	26	28	31	28	TTOR
Coffin's Beach, Gloucester	2	2	4	2	DFW
Wingaersheek Beach, Gloucester	0	0	0	0	DFW
Good Harbor Beach, Gloucester	nd	nd	nd	nd	nd
Revere Beach, Revere	9	9	11	9	MAS, DCR
Winthrop Beach, Winthrop	3	4 ^f	6	4 ^f	MAS, DCR
Yirrell Beach, Winthrop	2	2.5 ^g	3	2.5 ^g	Winthrop
L Street Beach, Boston	0	0	0	0	MAS
SOUTH SHORE					
The Glades, Scituate	0	nd	nd	0	MAS
Third Cliff, Scituate	2	2	5	2	MAS
Fourth Cliff, Scituate	1	1	3	1	MAS
Humarock, Scituate	0	nd	nd	0	MAS
Rexhame Beach, Marshfield	0	nd	nd	0	MAS
Duxbury Beach, Duxbury/Plymouth	17	17	33	17	MAS, Duxbury
Saquish, Plymouth	0	nd	nd	0	MAS
Plymouth Long Beach, Plymouth	13	15.5 ^h	18	15.5 ^h	Plymouth
Ellisville, Plymouth	3 ⁱ	3 ⁱ	1	3 ⁱ	FEM, MAS
Sagamore Beach, Bourne, Sandwich, and Plymouth	3	3	6	3	MAS
Scusset Beach State Res., Sandwich	0	1 ^j	0	1 ^j	MAS
UPPER CAPE					
Mashnee Dike, Bourne	0	0	0	0	ACOE

Location	Number of pairs		No. chicks fledged ^c	No. pairs with fledge data ^c	Source ^d
	Index Count ^a	Total Count ^b			
Bassetts I., Bourne	0	nd	nd	0	MAS
Old Silver Beach, Falmouth	0	nd	nd	0	MAS
Little I. Beach, Falmouth	0	nd	nd	0	MAS
Chappaquoit Beach, Falmouth	0	nd	nd	0	MAS
Black Beach, Falmouth	3	2	4	3	MAS
Sippewisset, Falmouth	2	2	0	2	MAS
Woodneck Beach, Falmouth	1	1	0	1	MAS
Falmouth Heights, Falmouth	nd	nd	nd	nd	MAS
Acapesket Beach, Falmouth	0	nd	nd	0	MAS
Menauhant Beach, Falmouth	0	0	0	0	MAS
Washburn I., Falmouth	1	1	0	1	WBNERR
South Cape Beach, Mashpee	4	4	6	4	WBNERR
New Seabury, Mashpee	2	2	0	2	WBNERR
Rock Landing/Maushop Village, Mashpee	0	nd	nd	0	MAS
Popponeset Spit, Mashpee	4	4	1	4	MAS
Town Neck Beach, Sandwich	2	3	3	3	MAS
Spring Hill Beach, Sandwich	9	9	5 or 6	9	MAS
East Sandwich Beach, Sandwich	4	5	9	5	MAS
Scorton (Neck) Creek, Sandwich	2	3	2	3	MAS
Scorton Shores, Sandwich	2	2	3	2	MAS
Sandy Neck, Barnstable	20	27	16	27	Barnstable
Rushy Marsh Pond Beach, Barnstable	nd	nd	nd	nd	MAS
Loop Beach, Barnstable	nd	nd	nd	nd	nd
Sampson's Is.-Dead Neck, Barnstable	16	16	0	16	MAS
Bone Hill Road, Barnstable	0	nd	nd	0	MAS
Dowses Beach, Barnstable	1	1	0	1	Barnstable
Long Beach, Barnstable	4	5 ^k	5	5 ^k	MAS
Craigville Beach, Barnstable	0	1 ^l	0	1 ^l	MAS
Memorial Beach, Barnstable	0	nd	nd	0	MAS
Squaw I., Barnstable	6	7	2	7	MAS
Squaw Is. Road / Causeway, Barnstable	1	1	1	1	MAS
Sea St./ Keyes Beach, Barnstable	0	nd	nd	0	MAS
Kalmus Park, Barnstable	3	3	2	3	Barnstable

Location	Number of pairs		No. chicks fledged ^c	No. pairs with fledge data ^c	Source ^d
	Index Count ^a	Total Count ^b			
Fortes Beach, Barnstable	0	nd	nd	0	MAS
Colonial Acres-Standish Way, Yarmouth	0	nd	nd	0	MAS
Gray's Beach, Yarmouth	0	nd	nd	0	MAS
Great I. - Smith Point, Yarmouth	2	2	0	2	MAS
Great I. Causeway, Yarmouth	2	3 ^m	0	3 ^m	MAS
Radio City Beach, Yarmouth	1	1 ⁿ	0	1 ⁿ	MAS
Seagull Beach, Yarmouth	8	8	15	8	MAS
Red Jacket Inn, Yarmouth	0	nd	nd	0	MAS
Bass River Beach / Smugglers, Yarmouth	0	nd	nd	0	MAS
West Dennis Beach, Dennis	6	6	7	6	Dennis
South Village Beach, Dennis	0	0	0	0	Dennis
Miramar Beach (Swan River), Dennis	1	1	0	1	MAS
Haigis to Inman Rd., Dennis	0	nd	nd	0	Dennis, MAS
Bayview, Dennis	nd	nd	nd	nd	MAS
Chapin Beach, Dennis	3	3	0	3	Dennis
Mayflower Beach, Dennis	0	0	0	0	Dennis
Corporation Beach, Dennis	0	0	0	0	Dennis
Howes St. Beach, Dennis	0	nd	nd	0	MAS
Sesuit Harbor Beach, Dennis	0	nd	nd	0	MAS
Cold Storage Beach, Dennis	0	0	0	0	Dennis
Sea St. (north side), Dennis	0	nd	nd	0	Dennis, MAS
Crowes Pasture (Coles Pond) / Quivett Neck, Dennis	1	2	0	2	Dennis
Wings I., Brewster	0	0	0	0	MAS
Paine's Creek, Brewster	0	nd	nd	0	MAS
Mants Landing, Brewster	0	nd	nd	0	MAS
Robbins Hill Beach, Brewster	0	nd	nd	0	MAS
Saint's Landing, Brewster	nd	nd	nd	nd	MAS
Breakwater Beach, Brewster	0	nd	nd	0	MAS
Point of Rocks Landing, Brewster	0	nd	nd	0	MAS
Ellis Landing, Brewster	nd	nd	nd	nd	MAS
Linnell Landing Beach, Brewster	0	nd	nd	0	MAS
Crosby Landing Beach, Brewster	2	2	0	2	MAS

Location	Number of pairs		No. chicks fledged ^c	No. pairs with fledge data ^c	Source ^d
	Index Count ^a	Total Count ^b			
Earle Rd. Beach, Harwich	nd	nd	nd	nd	MAS
Grey Neck Road Beach, Harwich	0	0	0	0	MAS
Allens Harbor, Harwich	0	0	0	0	MAS
Belmont Condos, Harwich	0	0	0	0	MAS
Bank St./Merkel Beach/Wychmere, Harwichport	4	4	4	4	MAS
Saquatucket Beach, Harwich	0	0	0	0	MAS
Red River Beach, Harwich	0	1 ^o	0	1 ^o	MAS
LOWER CAPE					
Pleasant St. Beach, Chatham	1 ^o	1 ^o	0	1 ^o	MAS
Forest Beach, Chatham	2 ^p	2 ^p	2	2 ^p	MAS
Chatharbor Lane (Mill Ck., Cockle Cove), Chatham	0	1 ^q	0	1 ^q	MAS
Ridgevale Beach, Chatham	2	2	0	2	MAS
Harding Shores, Chatham	0	0	0	0	MAS
Harding Beach, Chatham	3	4	2	4	MAS
North Monomoy I., Chatham	1	1	1	1	USFWS
Minimoy I., Chatham	0	1	1	1	USFWS
South Monomoy I., Chatham	44	50	17	50	USFWS
South Beach, Chatham	60	64	32	64	MAS
Morris I. dredge spoil, Chatham	1	2	4	2	MAS
Chatham Lighthouse Beach north to Andrew Harding Way, Chatham	0	nd	nd	0	MAS
Claflin Landing/ Chatham Bars Inn, Andrew Harding Way, Chatham	0	nd	nd	0	MAS
Tern I., Chatham	1	2	0	2	MAS
Linnell Lane, Chatham	0	nd	nd	0	MAS
North Beach I., Chatham	20	22	4	19	Chatham
North (Nauset) Beach, Chatham	12	13	6	12	Chatham
North (Nauset) Beach, Orleans	14	14	12	14	Orleans
Nauset Spit (Heights) (includes Skaket Public Beach), Orleans	14	14	11	14	Orleans
Little Sipson I., Orleans	0	nd	nd	0	MAS

Location	Number of pairs		No. chicks fledged ^c	No. pairs with fledge data ^c	Source ^d
	Index Count ^a	Total Count ^b			
New I., Orleans/Eastham	2	2	0	2	NPS, Orleans
Rock Harbor (north and south sides), Eastham	0	nd	nd	0	MAS
Dyer Prince Beach, Eastham	0	nd	nd	0	MAS
Boat Meadow, Eastham	0	nd	nd	0	MAS
First Encounter Beach, Eastham	0	0	0	0	MAS
Eastern South Sunken Meadow to Eastern First Encounter Beach, incl. Cooks and Campground beaches	0	nd	nd	0	MAS
So. Sunken Meadow, Eastham	0.5 ^r	0.5 ^r	0	0.5 ^r	MAS
Coast Guard Beach, Eastham	4	4	3	4	NPS
Nauset Light Beach, Eastham	0	0	0	0	NPS
Marconi Beach, Wellfleet	10	10	8	10	NPS
Marconi Station, Wellfleet	0	0	0	0	NPS
Lecount Hollow, Wellfleet	0	0	0	0	NPS
White Crest Beach, Wellfleet	1	1	0	1	NPS
Cahoon Hollow, Wellfleet	0	0	0	0	NPS
Lieutenant I. - SW, Wellfleet	0	0	0	0	MAS
Lieutenant I. - NW, Wellfleet	0	0	0	0	MAS
Old Wharf Point, Wellfleet	0	nd	nd	0	MAS
Field Point /Fox Is. WMA, Wellfleet	0	0 ^s	0	0 ^s	MAS
Indian Neck, Wellfleet	0	nd	nd	0	MAS
Herring River mouth - Powers Landing - Mayo Beach, Wellfleet	0	nd	nd	0	MAS
Jeremy Point, Wellfleet	7	7	0	7	NPS
Great I., Wellfleet	9	9	2	9	NPS
Duck Harbor, Wellfleet	2	2	0	2	NPS
Bound Brook, Wellfleet	0	0	0	0	NPS
Ryder Beach, Truro	0	0	0	0	MAS
Fisher Beach (Pamet Harbor -South), Truro	3	3	3 ^t	3	MAS
Corn Hill Beach (Pamet Harbor - North), Truro	2	2.5	4	2.5	MAS
Between Corn Hill Beach and Beach Point, Truro	0	nd	nd	0	MAS
Pilgrim Beach/Beach Point, Truro	1	2.5	2	2.5	MAS

Location	Number of pairs		No. chicks fledged ^c	No. pairs with fledge data ^c	Source ^d
	Index Count ^a	Total Count ^b			
Newcomb Hollow, Wellfleet / Truro	1	2	0	2	NPS
Ballston Beach, Truro	8	8	11	8	NPS
Longnook Beach, Truro	2	2	2	2	NPS
Coast Guard Beach, Truro	2	2	3	2	NPS
Dead Forest / Head of the Meadow, Truro	5	5	0	5	NPS, MAS
High Head, Truro	2	2	0	2	NPS
Race Point-South Beach, Provincetown / Truro	14	14	10	14	NPS
Race Point-North/Hatches Harbor, Provincetown	7	7	1	7	NPS
Long Point/Wood End, Provincetown	9	9	6	9	NPS
Herring Cove Beach, Provincetown	0	0	0	0	NPS
BRISTOL COUNTY					
Stony Point Dike, Wareham	2	2	0	2	ACOE
Long Beach Point, Wareham	0	nd	nd	0	MAS
Little Harbor Beach, Wareham	1	1	3	1	MAS
Ram I., Marion	nd	nd	nd	nd	MAS
Ram I., Mattapoisett	0	0	0	0	DFW
Strawberry Pt., Angelica Pt., and Pine I., Mattapoisett	nd	≥1	nd	0	MAS
South Shore Marshes WMA, Fairhaven	2	2	nd	0	DFW
Round I., Fairhaven	0	0	0	0	DFW
West I., Fairhaven	5	6	5	6	LCE
Winsegansett Heights, Fairhaven	0	nd	nd	0	LCE
Round Hill Beach, Dartmouth	0	0 ^u	0	0	MAS
Salters Pond, Dartmouth	1	1	2	1	MAS
Nonquitt, Dartmouth	2	3	4	3	MAS
Demarest Lloyd State Park, Dartmouth	6	7	16	7	LCE
Little Beach/Barney's Joy, Dartmouth	13	14	20	14	MAS
Gooseberry Neck, Westport	0	0	0	0	LCE
Horseneck Beach State Reservation, Westport	9	9	2	9	LCE
Baker's Beach / Westport Town Beach, Westport	2	3	5	3	MAS

Location	Number of pairs		No. chicks fledged ^c	No. pairs with fledge data ^c	Source ^d
	Index Count ^a	Total Count ^b			
Acoaxet, Westport	0	0	0	0	TNC-RI
Cockeast Pond (Elephant Rock), Westport	2	2	0	2	TNC-RI
Richmond Pond, Westport	3	3	0	3	TNC-RI
Bay Point, Swansea	nd	nd	nd	nd	A. Waring
ELIZABETH ISLANDS					
Naushon I. – Tarpaulin Cove	0	≥1	nd	nd	R. Thieler
Naushon I. – Robinson’s Hole	nd	nd	nd	nd	DFW
Naushon I. – West Beach	0	nd	nd	0	DFW
Naushon I. – Crescent Beach	1	1	nd	0	DFW
Naushon I. – Kettle Cove	0	nd	nd	0	DFW
Pasque I. - Robinson’s Hole	0	nd	nd	0	DFW
Pasque I. - Cobby	nd	nd	nd	nd	DFW
Pasque I. - Quicks Hole	nd	nd	nd	nd	DFW
Nashawena I. - Quicks Hole	1	1	nd	0	DFW
Nashawena I. - Canapitsit	nd	nd	nd	nd	DFW
Cuttyhunk I., Gosnold	2	2	nd	0	DFW
Penikese I., Gosnold	0	0	0	0	DFW
MARTHA'S VINEYARD					
Eastville Beach, Oak Bluffs	0	0	0	0	MAS
Harthaven, Oak Bluffs	1 ^v	1 ^v	3	1 ^v	MAS
Sylvia State Beach, Oak Bluffs	2 ^w	2 ^w	2	2 ^w	MAS
Sylvia State Beach / Bend-in-the-Road Beach, Edgartown	0	0	0	0	MAS
Cow Bay, Edgartown	1	1	4	1	MAS
Sarson I., Oak Bluffs	0	0	0	0	MAS
Little Gravel I., Oak Bluffs	0	0	0	0	MAS
Big Gravel I., Oak Bluffs	0	0	0	0	MAS
Haystack I., Edgartown	0	0	0	0	MAS
Yorke - Allen Point, Edgartown	0	0	0	0	MAS
Little Beach / Eel Pd., Edgartown	2	2	0	2	BW
Lighthouse Beach, Edgartown	0	0	0	0	BW

Location	Number of pairs		No. chicks fledged ^c	No. pairs with fledge data ^c	Source ^d
	Index Count ^a	Total Count ^b			
Chappaquiddick Point Beach, Chappaquiddick	0	0	0	0	MVLB
Tom's Neck Farm/Pease Pond, Chappaquiddick	0	0	0	0	BW
Caleb's Pond, Chappaquiddick	0	0	0	0	BW
Cape Pogue Elbow / The Narrows, Chappaquiddick	3	3	8	3	TTOR
Little Neck, Chappaquiddick	0	0	0	0	TTOR
Arruda's Point / The Jetties, Chappaquiddick	0	0	0	0	TTOR
Leland / East Beach, Chappaquiddick	5	6	12	6	TTOR
Wasque, Chappaquiddick	0	0	0	0	TTOR
Norton Point Beach, Chappaquiddick	0	0	0	0	TTOR
Norton Point Beach, Edgartown	5	6	0	6	TTOR
South Beach, Edgartown	0	0	0	0	BW
Crackatuxet Pond, Edgartown	1	1	2	1	BW
Edgartown Great Pond, Edgartown	7	7	3	7	BW, MVLB
Paqua Pond, Edgartown	nd	nd	nd	nd	BW
Oyster Pond, Edgartown	1.5	2	0	2	BW
Watcha Pond, W. Tisbury	1	1	2	1	BW
Paul's Point, West Tisbury, Martha's Vineyard	1	1	3	1	BW
Tisbury Great Pond / Quansoo, Chilmark	3	5	0	5	MAS, MVLB
Black Point Pond, Chilmark	1	1	0	1	BW
Chilmark Pond, Chilmark	1	1	0	1	BW
Lucy Vincent Beach, Chilmark	0	0	0	0	BW
Stonewall Beach, Chilmark	0	0	0	0	BW
Squibnocket Beach/Long Beach, Chilmark	1	2.5	0	2.5	BW
Long Point, Chilmark/West Tisbury	0	0	0	0	TTOR
Philbin Beach, Aquinnah	0	0 ^x	0	0	BW
Moshup Beach, Aquinnah	0	0 ^y	0	0	MVLB
Dogfish Bar, Aquinnah	5	5	12	5	BW
Lobsterville Beach, Aquinnah	0	0	0	0	MAS
Menemsha Neck	0	0	0	0	MVLB
Menemsha Beach, Chilmark	nd	nd	nd	nd	MAS
Edey's I.	0	0	0	0	MAS

Location	Number of pairs		No. chicks fledged ^c	No. pairs with fledge data ^c	Source ^d
	Index Count ^a	Total Count ^b			
Spring Point	nd	nd	nd	nd	nd
Cape Higgon, Chilmark	1	1	2	1	BW
Lambert's Cove, West Tisbury	0 ^z	nd	0	0	BW
Cedar Tree Neck, W. Tisbury	2	2.5	3	2.5	BW
Great Rock Bight Preserve, Chilmark	0	nd	nd	0	MVLB
Sepiessa Point Reservation, West Tisbury	0	0	0	0	MVLB
West Tashmoo, Tisbury	2	2	5	2	BW
East Tashmoo, Tisbury	0	0 ^{aa}	0	0	MAS
Mink Meadows /West Chop, Tisbury	2	2	5	2	MAS
Northern Pines Shores, Tisbury	nd	nd	nd	nd	nd
Wilfrid's Pond Preserve, Vineyard Haven	0	0	0	0	MVLB
Maciel Marine/Ferry Boat I./Lagoon Pond, Vineyard Haven	0	0	0	0	MAS
Nomans Land I. NWR	0	nd	nd	0	USFWS
NANTUCKET					
Great Point	2	2	3	2	TTOR
The Galls	4	5 ^{bb}	6	5 ^{bb}	TTOR
Coskata-West Beach	3	4 ^{cc}	0	4 ^{cc}	TTOR
Coatue	4	4	0	4	NCF
Coskata-East Beach	0	1	0	1	TTOR
Coskata Inlet/The Haulover	1	1	1	1	NCF
Wauwinet	0	0	0	0	MAS
Squam Pond / Squam Road	0	0	0	0	MAS, NCF
Quidnet/Sesachacha Pond/Greenhills	1	2	3	2	MAS
Low Beach	0 ^{dd}	0 ^{dd}	0 ^{dd}	0 ^{dd}	Nantucket
Tom Nevers	nd	nd	nd	nd	Nantucket, NCF
Surfside (Town-owned portion only)	0 ^{dd}	0 ^{dd}	0 ^{dd}	0 ^{dd}	Nantucket
Surfside (Western Ave. portion only)	2	2	2	2	MAS
Hummock Pond	0	0	0	0	NCF
Smith Point / Esther I.	3 ^{dd}	4 ^{dd}	nd	nd	Nantucket
Eel Point	9	9	14	9	NCF

Location	Number of pairs		No. chicks fledged ^c	No. pairs with fledge data ^c	Source ^d
	Index Count ^a	Total Count ^b			
Dionis Beach	0 ^{dd}	0 ^{dd}	0 ^{dd}	0 ^{dd}	Nantucket
East Hallowell Lane	nd	nd	nd	nd	MAS
Jetties Beach	2 ^{dd}	2 ^{dd}	nd	nd	Nantucket
Monomoy Creeks	0	0	0	0	NCF
UMass Field Station	0	0	0	0	NCF
Quaise Point	0 ^{dd}	0 ^{dd}	0 ^{dd}	0 ^{dd}	Nantucket
Polpis Harbor, Ram I., and Medouie Point	0	0	0	0	NCF
Long Pond	0	0	0	0	NCF
Madaket Beach	nd	nd	nd	nd	Nantucket
Tuckernuck I. - Whale Point	3	3	4	3	TLT
Tuckernuck I. - Bigelow's Point	2	2	2	2	TLT
Tuckernuck I. - North Pond	0	0	0	0	TLT
Tuckernuck I. - East Pond	0	0	0	0	TLT
Muskeget I.	3 ^{ee}	4 ^{ee}	3 ^{ee}	2 ^{ee}	Manomet, MAS
"Minimusk" I.	nd	nd	nd	nd	Manomet, MAS
UNADJUSTED TOTALS	638	695	564	676	
ADJUSTED TOTALS		666		648	

^a *Index Count* = number of pairs counted between 1-9 June 2013, the standardized *Index Count* period for the Atlantic Coast population.

^b *Total Count* = total number of territorial or breeding pairs present at a site for at least 2 weeks during the breeding season.

^c *Chicks fledged* are defined as chicks ≥ 25 days of age or observed in flight, whichever occurs first. *Number of pairs with fledge data* includes all pairs for which number of *chicks fledged* was determined; this includes not only pairs that successfully fledged chicks, but also pairs for which no nests were found, pairs that nested unsuccessfully, and pairs whose chicks failed to fledge.

^d Source = the primary source(s) that provided monitoring data: ACOE = U.S. Army Corps of Engineers, Barnstable = Town of Barnstable, BW = BiodiversityWorks, Chatham = Town of Chatham, DCR = Massachusetts Department of Conservation and Recreation, Dennis = Town of Dennis, DFW = Massachusetts Division of Fisheries and Wildlife, Duxbury = Town of Duxbury, FEM = Friends of Ellisville Marsh, LCE = Lloyd Center for the Environment, Manomet = Manomet Center for Conservation Sciences, MAS = Massachusetts Audubon Society, MVLB = Martha's Vineyard Land Bank, Nantucket = Town of Nantucket, NCF = Nantucket Conservation Foundation, NPS = National Park Service, Orleans = Town of Orleans, Plymouth = Town of Plymouth, TLT =

Tuckernuck Land Trust, TNC-RI = The Nature Conservancy - Rhode Island Chapter, TTOR = The Trustees of Reservations, USFWS = U.S. Fish and Wildlife Service, WBNERR = Waquoit Bay National Estuarine Research Reserve, Winthrop = Town of Winthrop

^e A single male raised 3 young to fledging; the female mate was never observed and was presumed to have died very soon after the eggs were laid.

^f Total Count and Pairs with Fledge Data include two single, territorial/courting birds present for two or more weeks in April and May.

^g A single, territorial plover was present for more than 2 weeks.

^h One female of a pair was killed prior to the Index Count and the mate re-paired during the Index. The dead individual is counted in the Total Count, but not the Index Count.

ⁱ One pair nested and failed at Scusset Beach prior to the Index Count and then moved to Ellisville. It is included in the Index, Total Count, and Pairs with Fledge Data for Ellisville, but is only counted once in statewide totals for Total Count and Pairs with Fledge Data.

^j One pair nested and failed prior to the Index Count and then moved to Ellisville. It is included in the Total Count and Pairs with Fledge Data for Scusset, but is only counted once in statewide totals for Total Count and Pairs with Fledge Data.

^k One pair nested and failed at Craigville Beach prior to the Index Count and then moved to Long Beach. It is included in the Index, Total Count, and Pairs with Fledge Data for Long Beach, but is only counted once in statewide totals for Total Count and Pairs with Fledge Data.

^l One pair nested and failed prior to the Index Count and then moved to Long Beach. It is included in the Total Count and Pairs with Fledge Data for Craigville, but is only counted once in statewide totals for Total Count and Pairs with Fledge Data.

^m One pair nested and failed at Radio City prior to the Index Count and then moved to Great Island. It is included in the Total Count and Pairs with Fledge Data for Great I. Causeway, but is only counted once in statewide totals for Total Count and Pairs with Fledge Data.

ⁿ One pair nested and failed, then moved to Great I. Causeway after the Index period. It is included in the Index, Total Count, and Pairs with Fledge Data for Radio City, but is only counted once in statewide totals for Total Count and Pairs with Fledge Data.

^o One pair nested and failed at Red River Beach, Harwich, then was presumed to have moved to Pleasant St. Beach, where it was counted during the Index period. It is included in the Index, Total Count, and Pairs with Fledge Data for Pleasant St., but is only counted once in statewide totals for Total Count and Pairs with Fledge Data.

^p One pair nested and failed at Chatharbor Lane, Chatham, then was presumed to have moved to Forest Beach, where it was counted during the Index period. It is included in the Index, Total Count, and Pairs with Fledge Data for Forest Beach, but is only counted once in statewide totals for Total Count and Pairs with Fledge Data.

^q One pair nested and failed prior to the Index Count period and then was presumed to have moved to Forest Beach, Chatham. It is included in the Total Count and Pairs with Fledge Data for Chatharbor Lane, but is only counted once in statewide totals for Total Count and Pairs with Fledge Data.

^r A banded, unpaired individual was present from 4/24 to 7/12. Scrapes were found, but no eggs. This individual is counted as a half-pair.

^s Observations included plover tracks on 5/15, a scrape and a plover on 5/17, and a foraging plover on 5/20. No other activity was noted.

^t Includes one chick that hatched from Fisher Beach and moved to Bound Brook

^u There were a few plover sightings between 4/5 and 5/20, including a male with 4 scrapes on 5/15.

^v One pair nested and failed at Sylvia State Beach, Oak Bluffs, during the Index period, then was suspected to have moved to Harthaven, where it re-nested at the end of the Index period. It is included in the Index, Total Count, and Pairs with Fledge Data for Harthaven, but is only counted once in statewide totals for Index Count, Total Count, and Pairs with Fledge Data.

^w One pair nested and failed during the Index Count period and then was suspected to have moved to Harthaven, Oak Bluffs. It is included in the Index, Total Count, and Pairs with Fledge Data for Sylvia State Beach, but is only counted once in statewide totals for Index Count, Total Count, and Pairs with Fledge Data.

^x Single, vocalizing male plover seen 5/14-5/21.

^y One pair acting territorial on 5/11; present on lower beach, not on upper beach in nesting area.

^z Three plovers were seen on 5/17 and a single bird in "courtship" flight on 6/5, but site was not monitored after that time.

^{aa} Pair and courtship flights seen on 5/22 and 5/27; appeared to be associated with adjacent sites.

^{bb} One pair nested and failed at Coskata-West Beach, Nantucket, then moved to The Galls where it nested during the Index Count period. It is included in the Index, Total Count, and Pairs with Fledge Data for The Galls, but is only counted once in statewide totals for Total Count and Pairs with Fledge Data.

^{cc} One pair nested and failed prior to the Index Count and then moved to The Galls, Nantucket. It is included in the Total Count and Pairs with Fledge Data for Coskata-West Beach, but is only counted once in statewide totals for Total Count and Pairs with Fledge Data.

^{dd} These are preliminary data from 7/31/2013; final data were not submitted.

^{ee} All data are estimates because visits were infrequent. Used data from 5/27 for Index Count.