

Field Season Overview

We are so grateful for the exceptional field staff who joined us this season and for our ongoing strong partnerships with local beach communities. An integral part of conservation work is understanding that progress is not always linear. Therefore, while we are sad to report that the state's Piping Plovers and Least Terns had a disappointing nesting season, we are hopeful that these nesting bird populations will be able to absorb the losses of this year.

Although no major storms impacted the birds this year, high monthly tides in May caused many clutches to be overwashed on narrow beaches. Plover fledglings produced were approximately 35% less than last year, while approximately two-thirds of tern colonies produced no fledglings. With this difficult year for plovers and terns, we are particularly happy to report that American Oystercatchers did quite well on sites protected by the Coastal Waterbird Program.



Kathy Parsons, Director
Coastal Waterbird Program

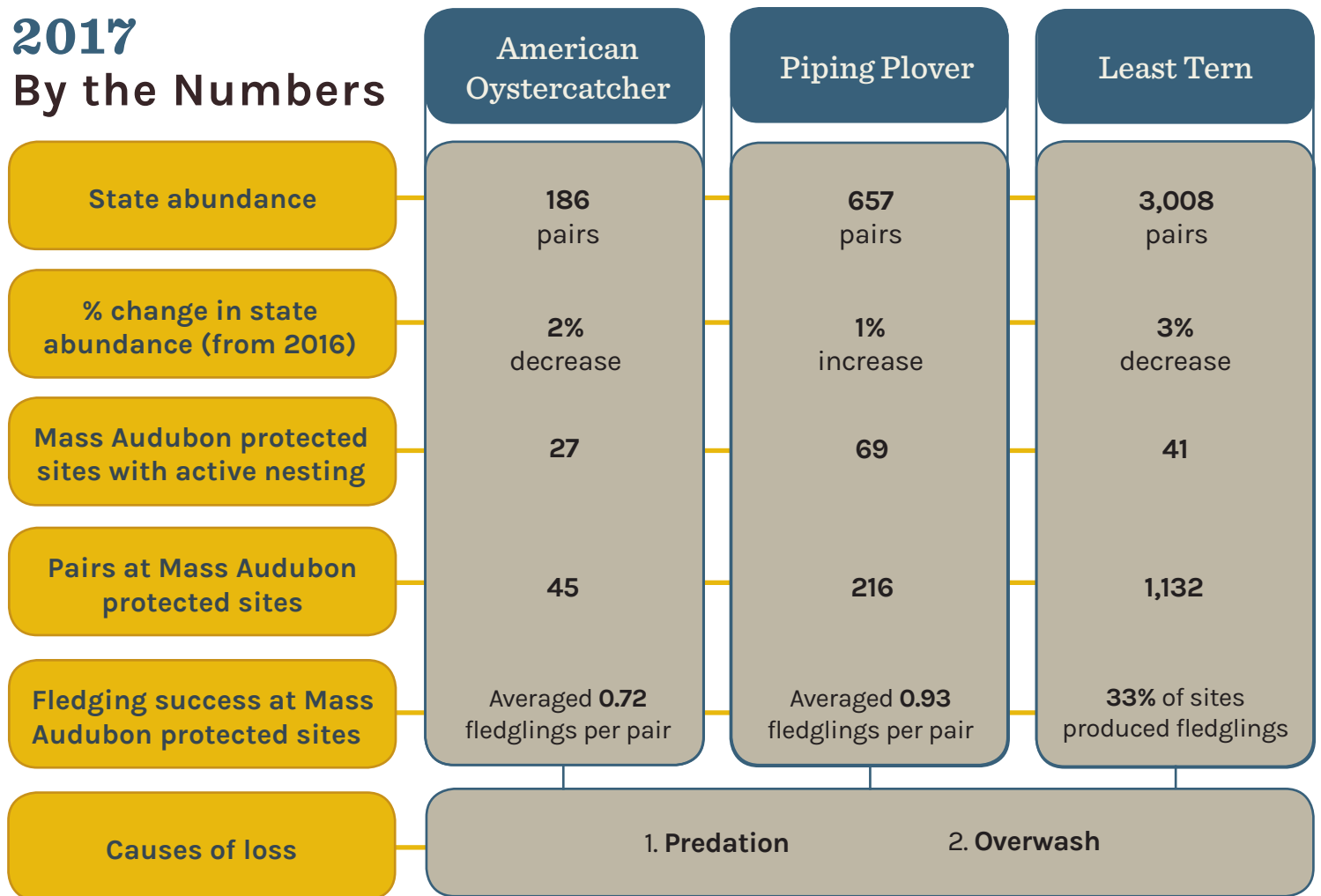


Overcoming Overwash

Researching an important nesting threat

Overwash, the flow of water and sediment over dunes during storms or other high-water situations, is a major cause of egg loss for the species we monitor. As illustrated in our "By the Numbers" feature (page 2), overwash was the second greatest threat to the nesting success of American Oystercatchers, Piping Plovers, and Least Terns. Because some factors affecting the nesting success of coastal birds, such as weather, are out of our control, we focus on beach management practices that can limit the effect of overwash. This includes helping to guide policy on beach engineering projects and promoting "soft" solutions to beach erosion that help maintain wide beaches. We know that the narrowing of beaches has a direct impact on the likelihood of nest overwash, thanks to our evaluation of overwash patterns using the Coastal Waterbird Program long-term database. Our research, spanning 20 Cape Cod beaches and 5 years, provided us with the average distances to the high tide line of both overwashed and hatched Piping Plover nests. **(Cont. page 3)**

2017 By the Numbers



Birds and the City

An opportunity to teach urban populations about wildlife conservation



In 2017, we continued public outreach and educational programming in the urban communities of Revere, Winthrop, as well as to visitors of the Boston Harbor Islands through our ongoing partnerships with the Massachusetts Department of Conservation and Recreation and the National Park Service. This year, we focused on implementing increased education for the community of Revere Beach, where the threatened Piping Plover nests. With over 100,000 visitors during summer weekends, Revere is a true urban beach, with all of the challenges and opportunities of protecting wildlife in an urban area. With increasing numbers of both

Piping Plover pairs and beach visitors, it is essential that we expand education and engagement opportunities for beachgoers to learn how to interact with this protected population. Leading up to the beach season, we offered environmental education programs for school groups and teachers within the metro-Boston area, followed by inclusive, onsite public engagement during the summer months.

Overcoming Overwash (Cont.)

On average, overwashed nests were 8.9 meters from the high tide line, while hatched nests were 13.9 meters from the high tide line. The probability of a nest being overwashed depended on distance to the tide line, beach width, tidal range, and beach location. Beach vegetation and predator presence also affect where plovers place their nests, sometimes pushing them toward the high tide line. Our long-term database empowers us and our partners to advocate for specific nesting habitat protection initiatives and demonstrate the incremental effects of climate change.

You Are Where You Eat

Studying the feeding habits of Common and Roseate Terns may tell us why their numbers on the outer Cape have been falling



Since 2000, we've observed a decrease in use of the outer Cape Cod beaches by Roseate Terns during the post-breeding season. Our 10-year study of terns staging (getting ready for southward migration) on the outer Cape shows that up to 90% of all the young terns fledging from regional nesting colonies come to Cape Cod and Nantucket for most of July through September. During this time, fledglings are still fed by an accompanying adult and are eventually taught to feed by themselves. Although the total Roseate Tern population has fluctuated over the 30 years since the species was declared "endangered," the number of terns staging on Cape Cod has consistently declined. With this knowledge,

we began a study to examine whether changes in tern foraging ecology on the staging grounds could account for smaller tern flocks. We hypothesized that, if there were factors affecting the ease of finding food—mainly small fish—during this stage, this could be a contributing factor to flock size changes.

To test this hypothesis, in 2016, we expanded the scope of our monitoring efforts to research the feeding habits of Roseate and Common Terns during their staging period. Common Terns are often studied simultaneously with their Roseate counterparts, as they regularly nest and stage together. Monitoring showed that 82% of all the fish brought to young birds in staging flocks were Sand Lance, a forage fish species. With such a high percentage of Roseate and Common Tern diet being comprised of one fish, competition for this species would have great implications for the success of the staging process—and there is much competition. Sand Lance is important to many seabirds, predatory fish, and marine mammals, such as the seals who are increasingly inhabiting the outer Cape.

The results of our 2016-2017 field study on Common and Roseate Tern foraging ecology will help us to better understand the relationship between Sand Lance and terns and how this relationship affects tern use of foraging and roosting habitat on the outer Cape. Additionally, the results add new information that marine biologists and conservationists can use to better understand changes in coastal ecosystems and their multi-layered impacts.

The work of the Coastal Waterbird Program is made possible through the support of our individual donors, institutional funders, and government contracts.

Following is a list of donors, funders, and contracting agencies who supported the CWP from July 1, 2016 through June 30, 2017.

Institutional Funders

Cape Cod Bird Club
Island Foundation, Inc.
John J. Sacco & Edith L. Sacco Charitable Foundation
Martha's Vineyard Real Estate, Inc.
Nasketucket Bird Club
National Fish & Wildlife Foundation
The Old Spouter Gallery
Save Popponesset Bay
Three Bays Preservation, Inc.

Government Contracts

Massachusetts Department of Conservation and Recreation
Hanscom Air Force Base/US Air Force
Mass Natural Heritage & Endangered Species Program
River Stewardship Council
Town of Chatham
Town of Falmouth
Town of Harwich
Town of Sandwich
Town of Scituate
Town of Truro
Town of Yarmouth
U.S. Fish & Wildlife Service



Individual Donors

Anonymous (4)
Deborah Abbott & William Smith
Reed Anthony
Charles & Christina Bascom
Arthur Beale
Lynn Bernard & Ron Mucock
Peter & Judy Berrien
Nancy Boulanger
Mr. & Mrs. Frederick Bowes III
Betsy Brainerd & Tom Berentes
Elisabeth Broughton
J. T. & D'Ann Brownrigg
Vasha & Frank Brunelle
Robin Bunshaft Fan & Samuel Fan
Lewis Bushnell
Kathryn Cade
Margaret Cain
Ellen Carroll Guiney & Kate Guiney
Cynthia Casner
Mr. & Mrs. Truman Casner
Margaret Chapman
Frances Chew & Richard Bryan
Sharon Chown & Michael T. Huguenin
Antonie Chute
Cricket Clifford
Joanne Coffey
Elizabeth Collins
Myles & Kathy Conway
Steven Cook
Linda Coollick
Molly N. Cornell
Robert Creedon Jr. & Geraldine Creedon
Troy Daniels & Jennifer Janies
Ralph & Jacqueline Dormitzer
Wendy Dwyer
Mr. & Mrs. George P. Edmonds Jr.
Sally Ellis
Jen Enck
Rachel Farrell
Susan & Brooke Fishback
Shirley & Peter Fisher
Elaine Frongillo
Karen & William Goggins

Susan Goldsmith
John & Therese Goodchild
James & Anne Gould
John Graham
Pat Greenwood
Sarah Groves
Kay Guild
Warren K. Hall
Mr. & Mrs. William J. Hayes
Diane Heart
John & Judith Hepburn
Shane & Barbara Hunt
Robert Hutchinson
Delmont Irving
Anne Isbister and Christopher Ballog
Cynthia Kaplan
Ken & Mj Keenan
Barbara Keough
Dr. Stephen Kerzner & Valerie Kerzner
Dale Keyes
Paul & Joyce Kohout
Bruce Kozuma & Dr. Livia Racz
Claudette LaBonte
Jean & Bert Lampen
Kathleen W. Lampert
Dr. Gerald Lazar & Marian Lazar
Elizabeth Leavell
Richard Lombard
Paula Long
Thomas Loring
John & Dina Lyons
Jan Machnik & Susan Greco
William & Amanda Madar
Martha Maness & Susan Lush
Dr. Robert Mayer & Susan Mayer
Lisa & John McLellan
Eric & Anne McNulty
Caroline & W. Scott Meeks
Constance Melahoures
Ellen Merritt
Wendy Miller
Janet Morehouse
Heather Mucha

John & Mary Nelson
Lawrence Odence
J. David Officer & Dr. Marcia J. Wade
Peggy Olney
Peter Olszowka
Julie O'Neil
Stuart & Katharine Parsons
Dawn & Marilyn McCrory
Susan Pellowe
Cathy Perry
Mary Person
Ann Pinkham
Russell & Mary Pollard
Thomas Porcher & Catherine Leonard
Woodruff Price
Doug Reece
Ian Reid & Wendy Wheeler
Gretchen Reilly
Mary & John Richmond
Jacqueline Rigolio
Eric Robillard
Anne Rutter
Stewart & Nancy Sanders
Dr. Jeffrey Scherz & Rachel Mele
Richard Scheuch
Gilbert Isaac Schrank & Nancy Jones
Anne Serrell
Susan Sinnott
Christopher & Ann Ryan Small
Sandra Sutherland
Jeff & Laura Taylor
Virginia Ursin
Peter & Fay Vale
Barbara Volkle & Stephen Moore
William & Edith Ward
Paul West
Margaret Williams
Sandra Wonders
Lauretta Woods in honor of
Stephanie Schmidt
Peter Wright & Sally Dricks