Climate Change: State of our Island Coast

trustees

Cynthia Dittbrenner, Director of Coast and Natural Resources

December 1, 2022

Sources

State of the Coast Report

Martha's Vineyard, Nantucket & Gosnold; 2021 thetrustees.org/coast

Assessment and analysis of adaptive interventions

Martha's Vineyard, 2020





What we're facing



Relative Annual Mean Sea Level and Future Scenarios: Boston, MA

Flood Surge Levels from Stronger Storms



SOURCES: Annual Mean Sea Level from NDAA's Historical Sea Level Trend data from Boston Tide Gate Station Future SLR projections from the Northeast Climate Adaptation Science Center, www.resilientma.org/resources/resource: 2152/massachusetts-climate-change-projections-statewide-and-for-major-drainage-basins

Beach erosion

 Martha's Vineyard beaches have lost more than 1,400 acres since 1897, projected to lost another 1,400 as soon as 2050.





WASQUE BEACH



WASQUE BEACH





LELAND BEACH



CAPE POGE



CAPE POGE



CAPE POGE – OCEAN SIDE



CAPE POGE – BAYSIDE



Beach migration NORTON POINT BEACH

It has already migrated to the north more than 1,500 feet since 1897



Coastal beach in 1897

Coastal beach in 1994



Coastal beach in 2016

Land in 2018



Beach migration





FEMA coastal hazard erosion

area (2050 high scenario)

--- Historical Shorelines 1980s

Habitat shifts

NORTON POINT BEACH



NORTON POINT – OCEAN SIDE



NORTON POINT – BAYSIDE

Norton Point dune restoration

MARTHA'S VINEYARD

Present:

885 acres total

As soon as 2050:

270 acres of total marsh lost = 30%

The states with my piller and

Waterlogged Marsh and Mega Pool Formation

Salt marsh migration

POCHA POND

POCHA POND

POCHA POND

POCHA POND

DATA

MAPS

DOWNLOAD A COPY

OUR SPONSORS

FEMA COASTAL EROSION

Coastal erosion is a natural process, but new mapping projections by FEMA indicate its pace is likely to accelerate with sea level rise as storms are able to attack higher and higher land elevations. Using the map below, navigate around the Islands to explore:

- FEMA Coastal Hazard Erosion Area (2050 high scenario)
- Historical Shoreline: 1890s

What do we do?

- Protection
- Restoration of natural coastal areas
- Retreat

Beach grass is our friend!

STATE OF THE COAST

FUTURE CLIMATE-DRIVEN RISKS — AND THEIR SOLUTIONS — ON MARTHA'S VINEYARD, NANTUCKET AND GOSNOLD (ELIZABETH ISLANDS)

Proudly sponsored by ReMain Nantucket Cynthia Dittbrenner, The Trustees Director of Coast and Natural Resources cdittbrenner@thetrustees.org thetrustees.org/coast

C S

ð

Irust