

Coskata-Coatue: *A refuge at risk from rising seas*

Nantucket Coastal Conference 2023

Cynthia Dittbrenner, Interim VP of Conservation & Resilience



Nantucket
Conservation
Foundation



State of the Coast

STATE OF THE COAST

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



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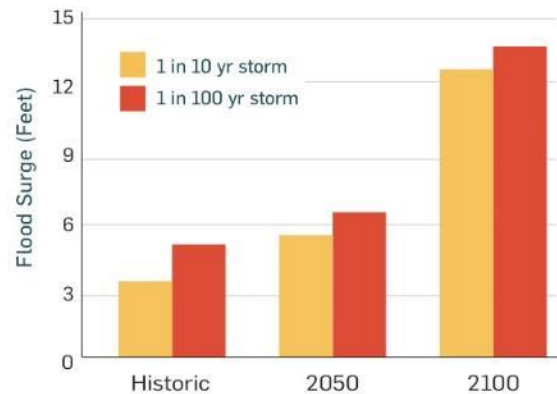
Coastal projections

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



SOURCES: Annual Mean Sea Level from NOAA'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

Flood Surge Levels from Stronger Storms





COSKATA-COATUE WILDLIFE REFUGE (1,117 ACRES)

Wauwinet Road ▪ Nantucket, Massachusetts
508.228.5646 ▪ nantucket@ttor.org ▪ www.thetrustees.org

LEGEND

- The Trustees
- Nantucket Conservation Foundation
- U.S. Fish & Wildlife Service
- Woodland
- Wetland
- Trail (DSVs* allowed)
- Trail (Open when conditions allow)
- Portable Toilets (Seasonal)
- Numbered Trail Marker

*DSVs = Over Sand Vehicles

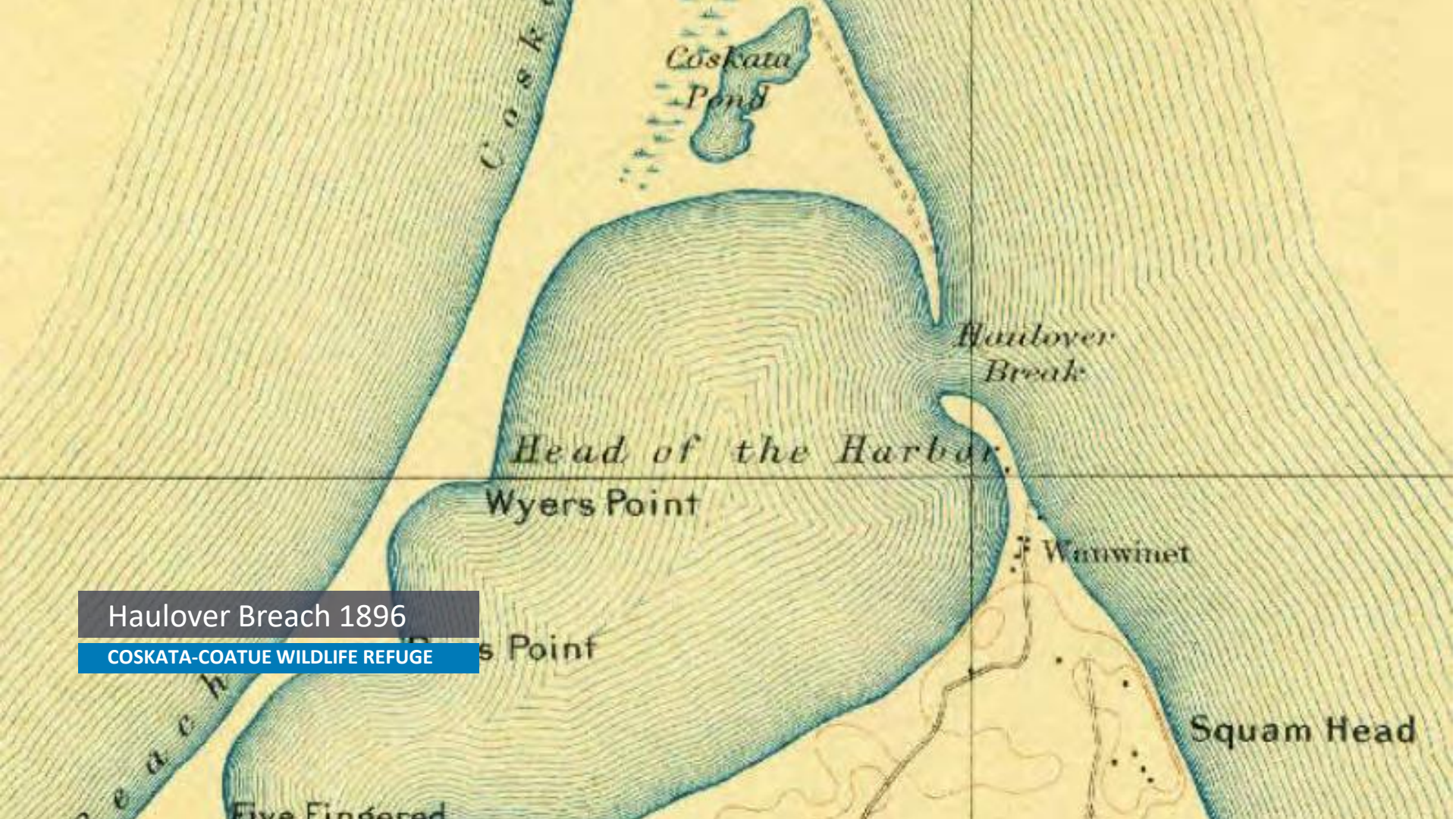


Rental vehicles are not permitted on Coatue between markers 8 and 11.

Over sand vehicle trails may be subject to closure by management due to environmental conditions. Beaches are open to pedestrians unless posted due to shorebird nesting.

Harbor side beaches on Coatue are closed to vehicles all year. They are restricted to pedestrian use only.





Coskata Pond

Coskata

Haulover Break

Head of the Harbor

Wyers Point

Wamwinet

Squam Head

Haulover Breach 1896

COSKATA-COATUE WILDLIFE REFUGE

Point

Beach

Five Fingered



The Galls 1991 & 1992

COSKATA-COATUE WILDLIFE REFUGE



b. Galls

a. Haulover

c. Coskata Pond

d. Between 1st & 2nd Point

Potential Breach Sites
COSKATA-COATUE WILDLIFE REFUGE



Assessment and Analysis of Adaptive Interventions for Coskata-Coatue Wildlife Refuge

WOODS HOLE GROUP



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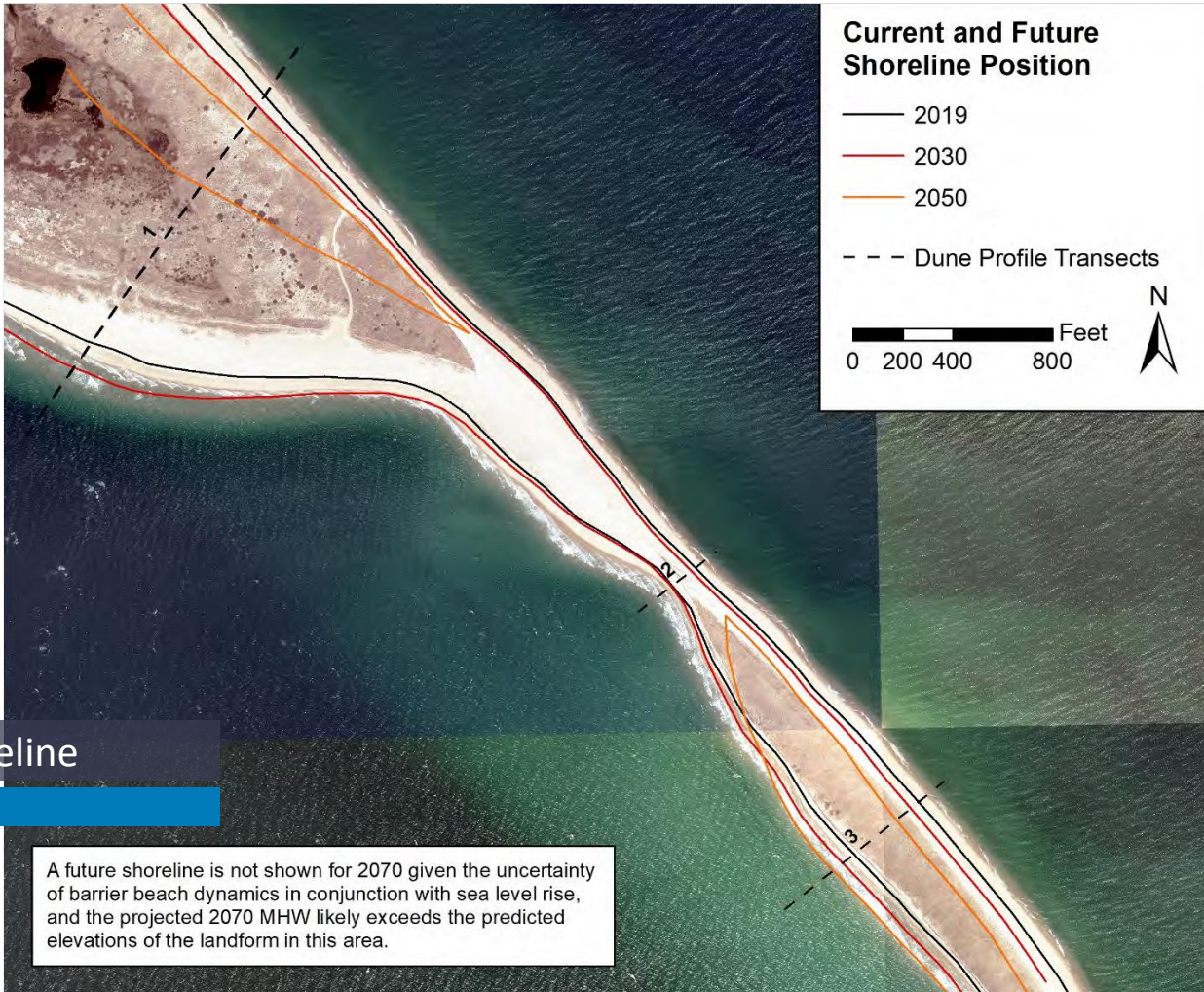
Future Shoreline
HAULOVER





Future Shoreline
COSKATA POND

A future shoreline is not shown for 2070 given the uncertainty of barrier beach dynamics in conjunction with sea level rise, and the projected 2070 MHW likely exceeds the predicted elevations of the landform in this area.



Future Shoreline

THE GALLS

Boston University Study

SEDIMENT TRANSPORT AND BREACHING RISK

- Sediment transport
- Hydrodynamic model
- Projections for future
- Project concepts



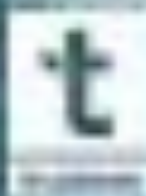


CUSKATA-COATUE

A REFUGE ON THE EDGE

 National
Endowment
for the Arts

 PUBLIC WORKS
A DIVISION OF THE U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT



What next?

- Nantucket film festival & community engagement
- Alternatives analysis & design

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Cynthia Dittbrenner, The Trustees
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