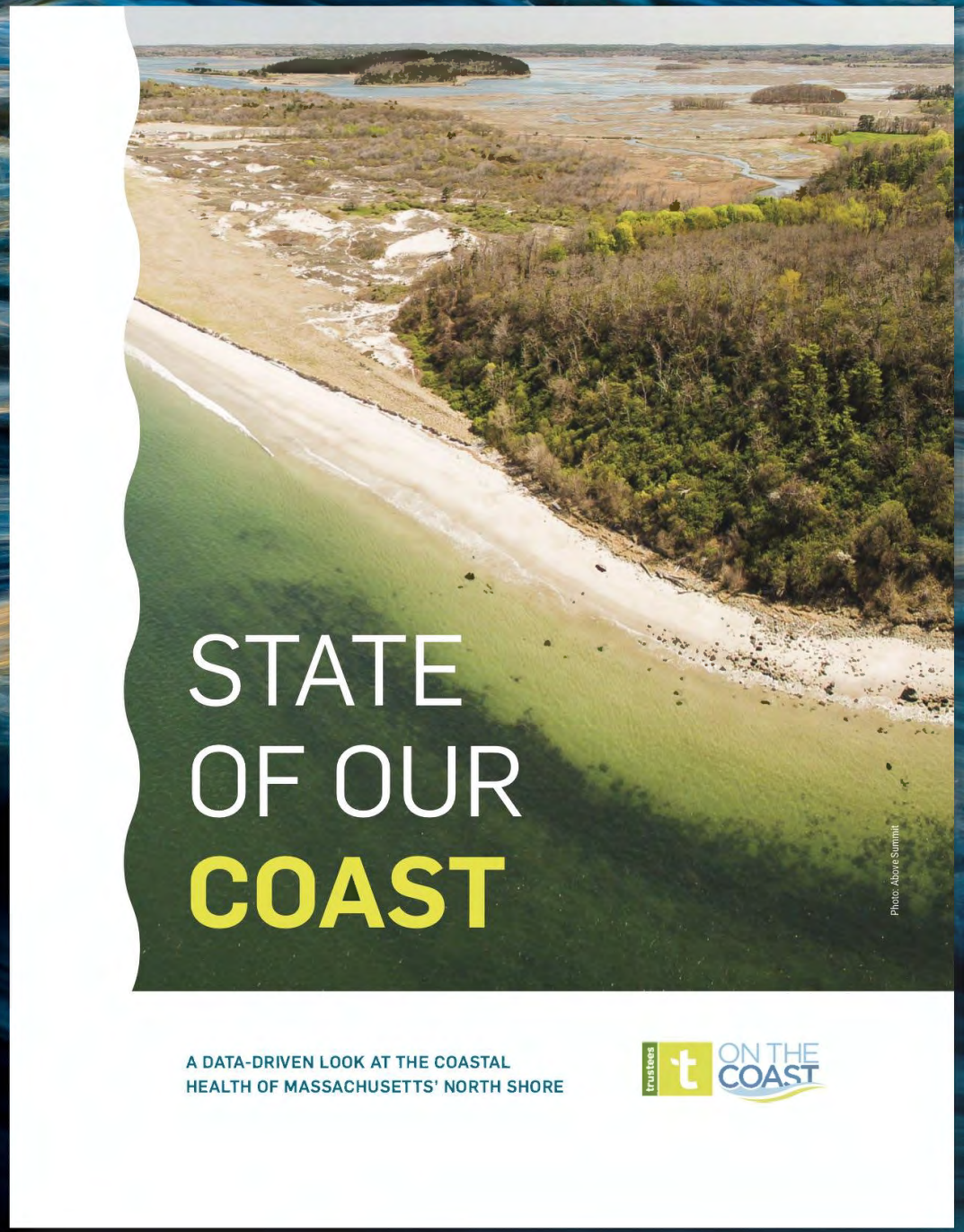

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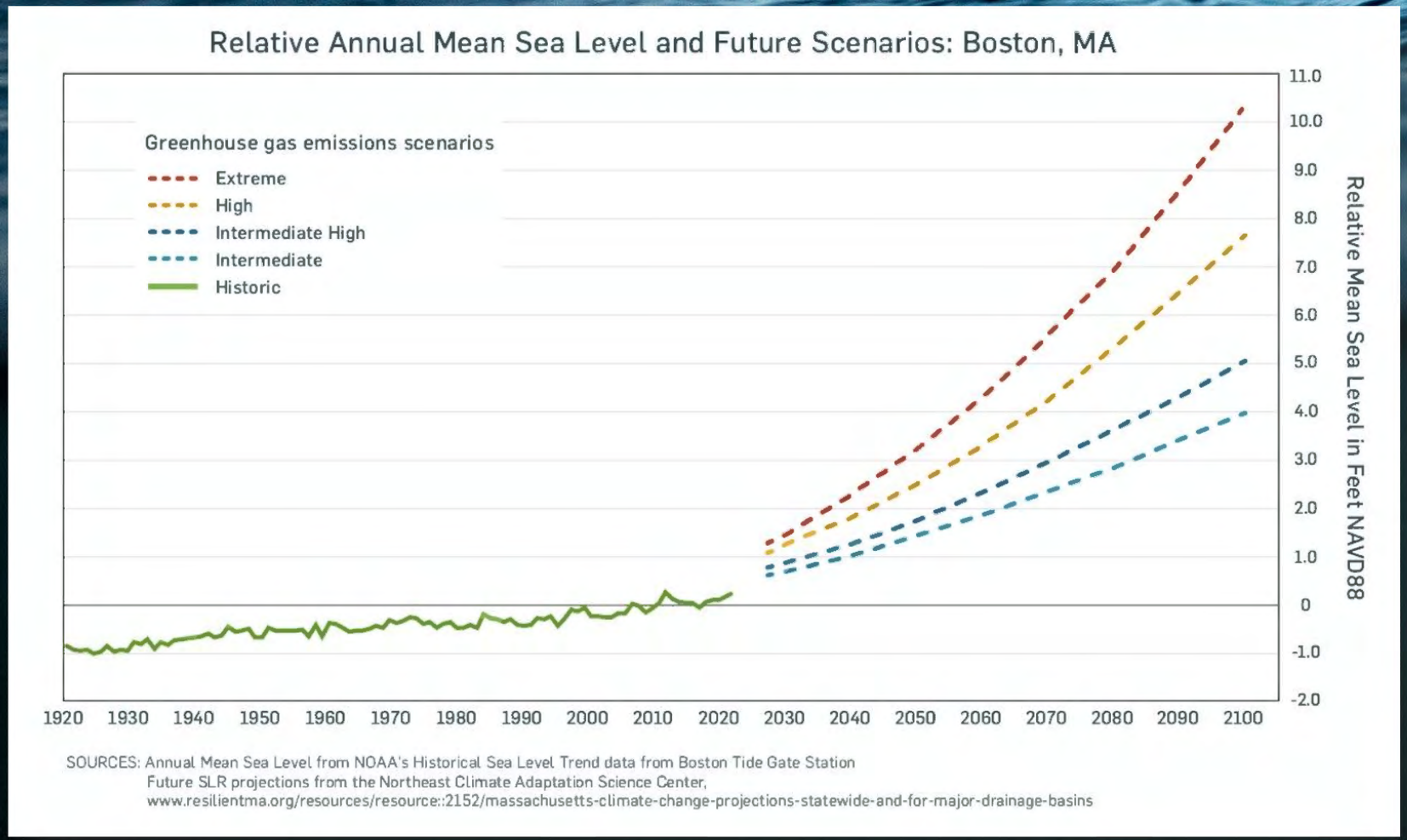
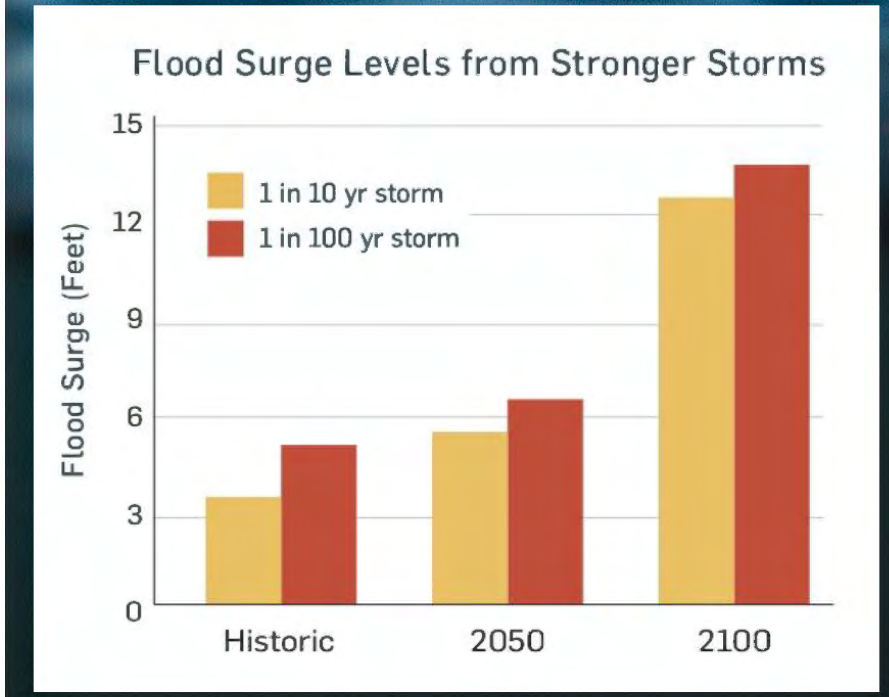
Coastal Strategy

1. Protect & Advocate
2. Inspire Love of Coast
3. Focus on Most Vulnerable Places

- Create a framework for conversation and action

What We're Facing

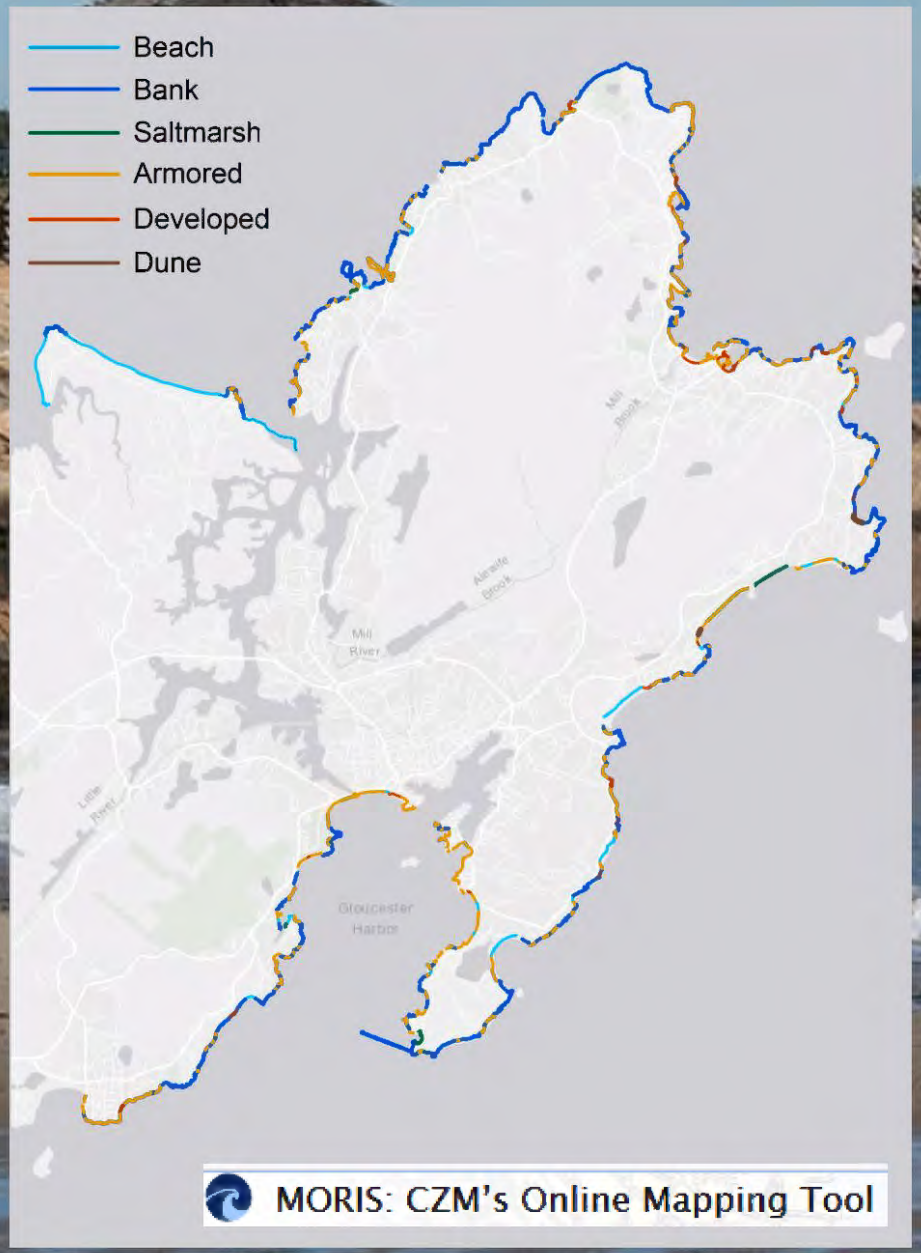




The Challenges

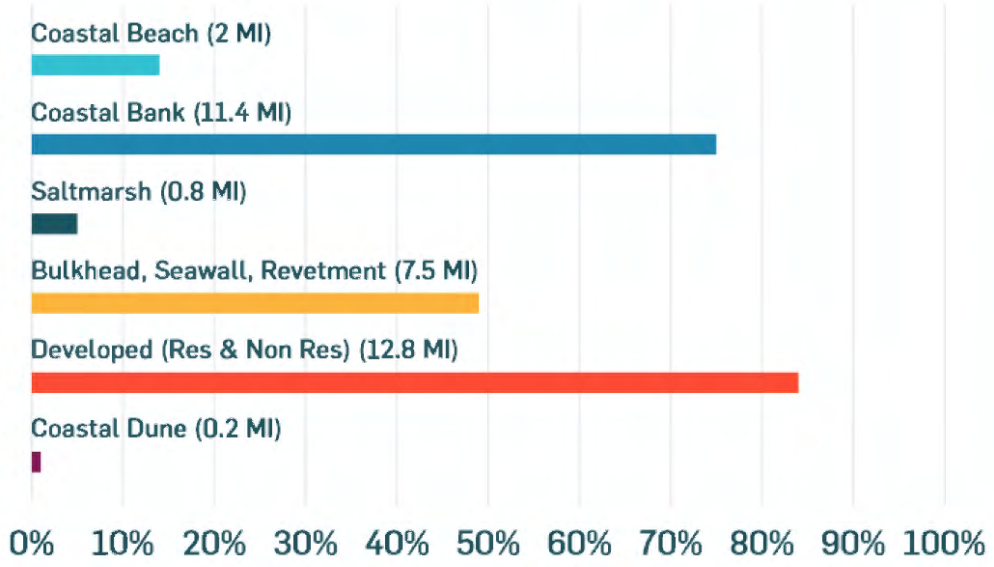
Shorelines

SHORELINE CHARACTERIZATION ASSESSMENT



OCEAN-FACING SHORELINE (15.2 MILES) [CIT. 4]

Shoreline types below can overlap, not cumulative



ISSUE AREAS

BEACH EROSION

CRANE BEACH, IPSWICH

FRONT BEACH, ROCKPORT

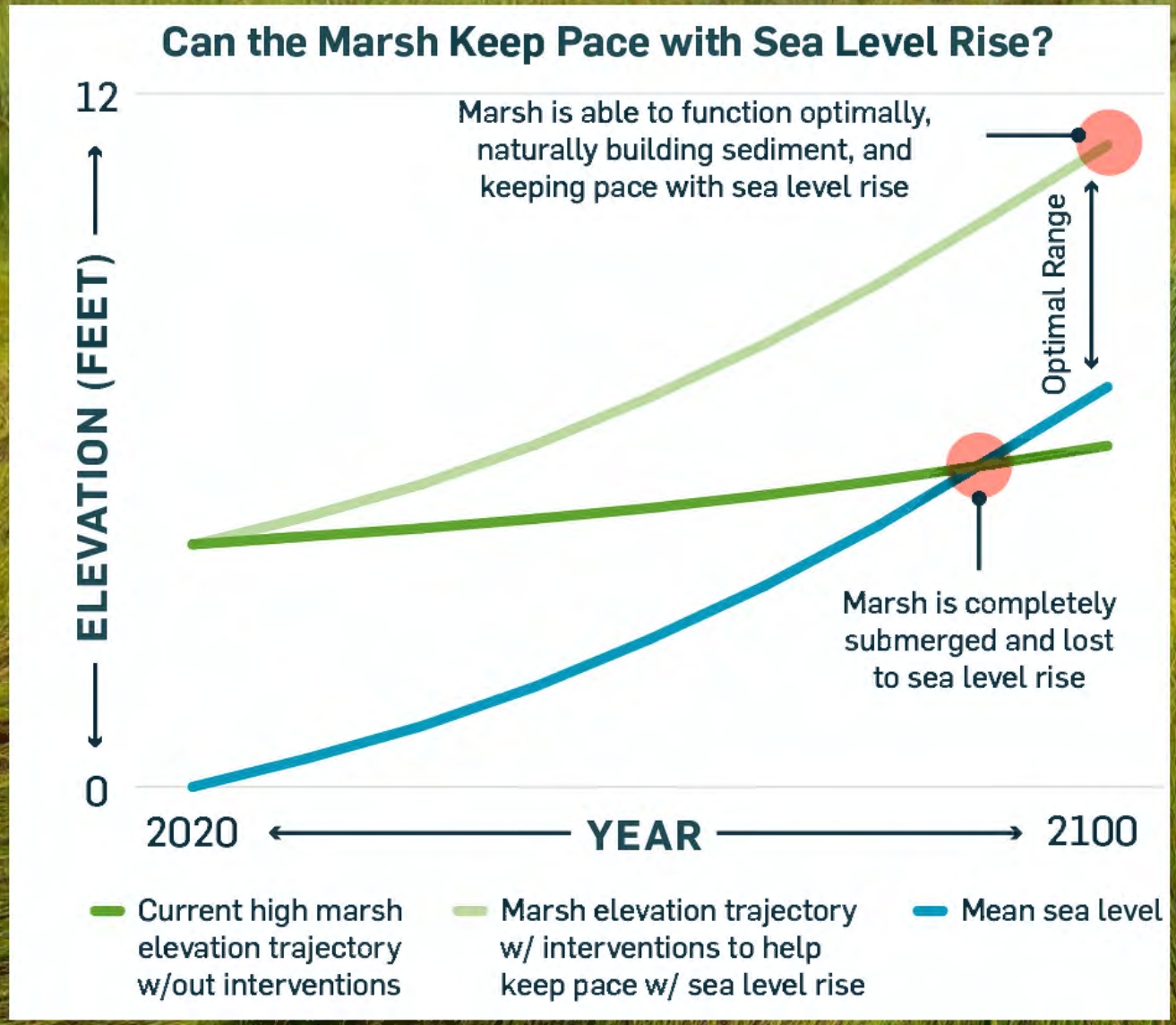
Rockport, MA

$16M in pending coastal erosion projects in 2013

8,000 cubic yards, beach nourishment at Long Beach

ISSUE AREAS

SALT MARSH – KEEPING PACE WITH SLR

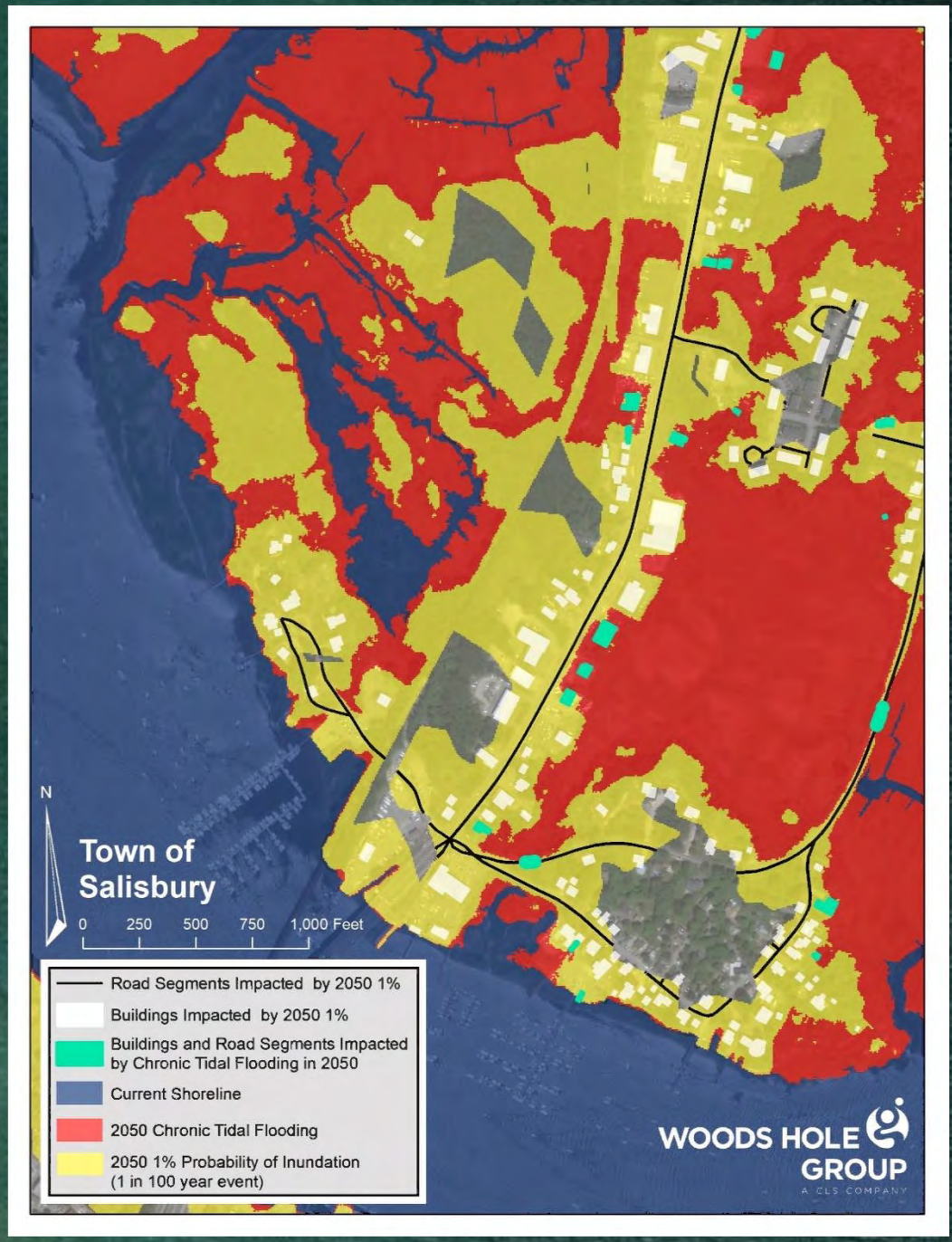


Coastal wetlands saved NY / NJ $625M in property damage during Hurricane Sandy in 2012

ISSUE AREAS

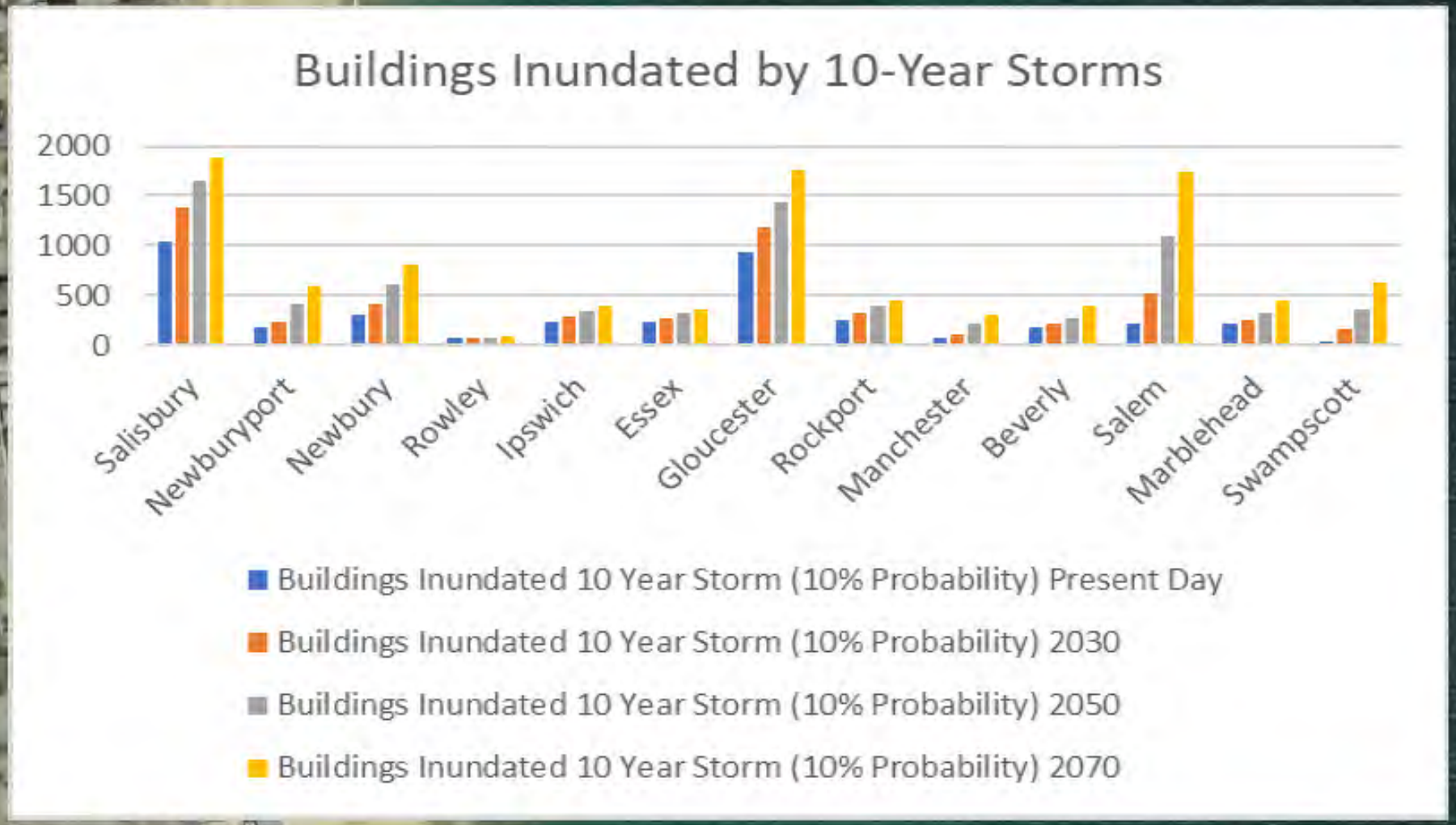
DEVELOPED COAST – ADAPT OR RELOCATE?

Chronic Tidal Flooding and Storm Surge Flooding of Roads and Buildings



ISSUE AREAS

DEVELOPED COAST



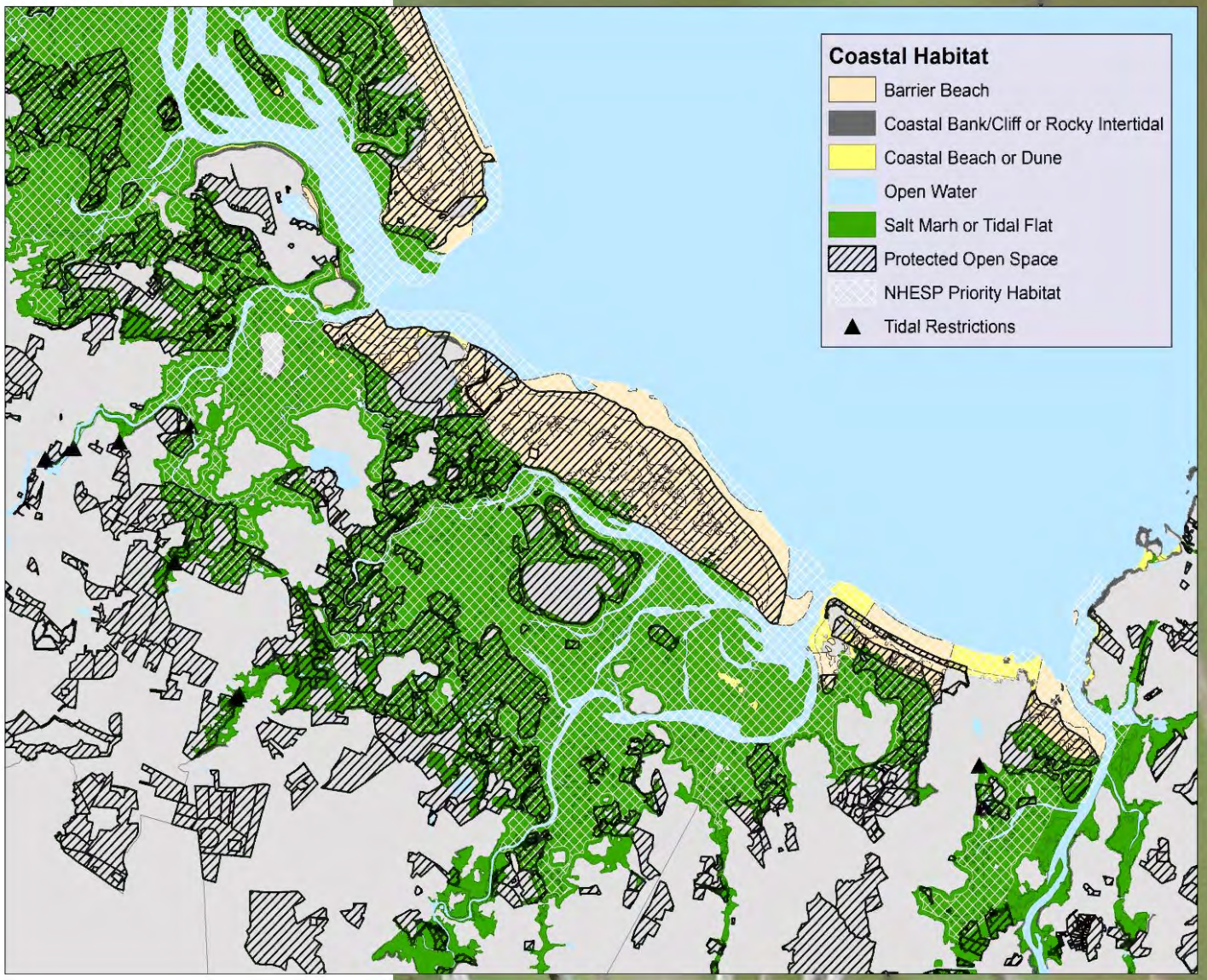
ISSUE AREAS

ARMORED SHORELINE AND BUILT WATERFRONTS

- Alternatives to Armored Shoreline?
- Not designed for climate change
- Overtopping flood risks
- Environmental impacts
- Significant renewal costs

Issue Areas

COASTAL HABITAT – FUTURE DEVELOPMENT



25% of natural coastal habi
areas are conserved as ope
space

COMMUNITY ACTIONS

Great Marsh Towns	Action Spotlight
Essex	Conomo Point Seawall
Gloucester	High School, Water Treatment, Blue Economy Incubator
Newburyport	Wastewater Treatment plant
Newbury	Dune Nourishment, Living Shoreline
Rowley	MVP Plan
Ipswich	Adaptive Building and Road Design
Salisbury	Raising Ring Island Roads
Rockport	Long Beach Nourishment
Manchester-by-the-Sea	Restoring Sawmill Brook
Beverly	Considering portable flood walls
Salem	Restoring fringe salt marsh, Climate Action Plan
Marblehead	Oyster restoration project
Swampscott	Protective living reefs

Funding Resilience

Commonwealth of MA, Executive Office of Energy and Environmental Affairs

$4.5M+ in funding for 50 North Shore projects focused on coastal resilience, pollution remediation, healthy estuaries, and climate planning and action over the last 5 years.

Other funding and incentive mechanisms – emissions trading systems, green/blue resiliency bonds, climate funds and derivatives, insurance policies, capital budgets?

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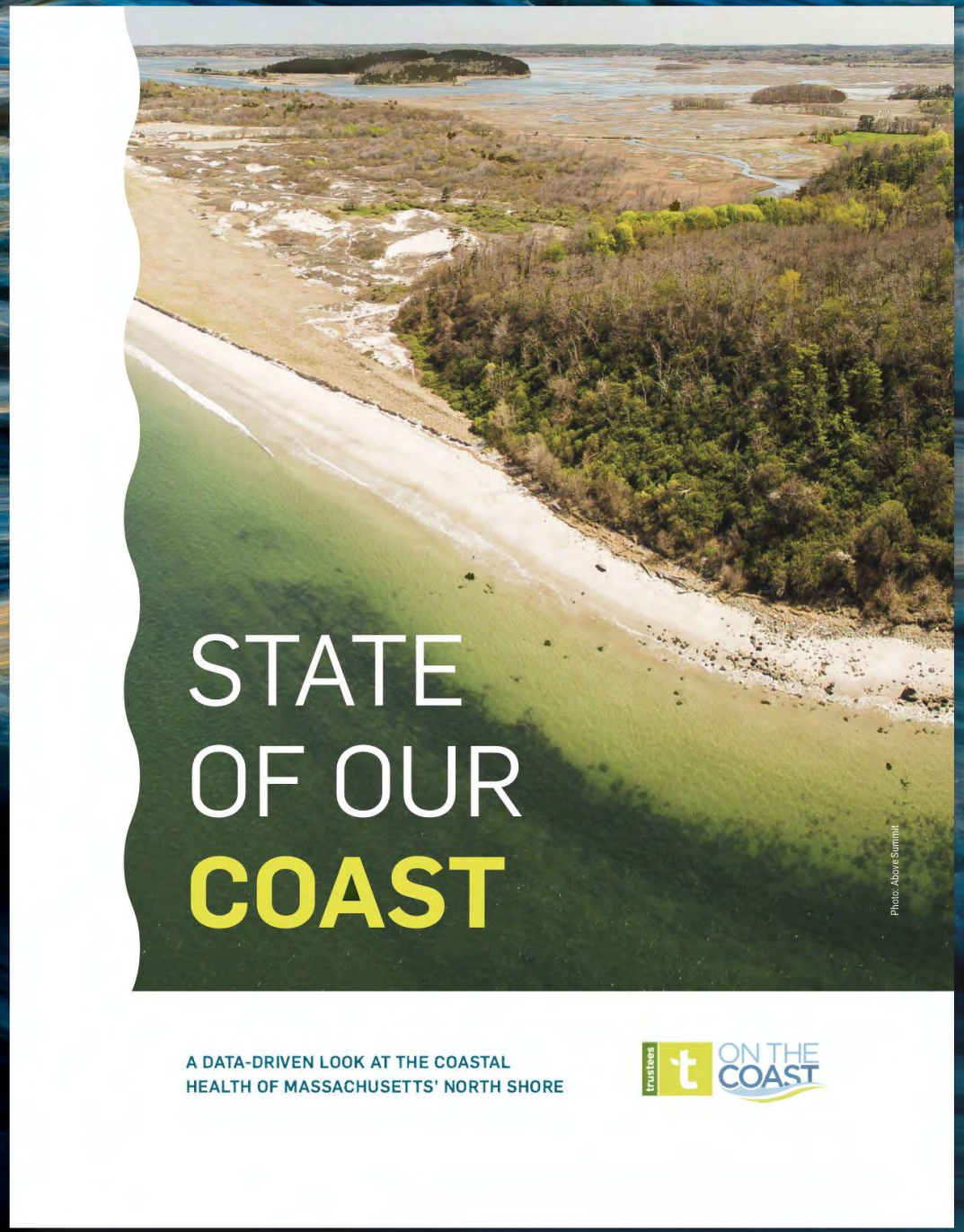

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