

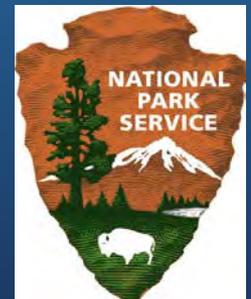
Coastal Geomorphological Evolution at Plumb Beach: Sediment Budget and Management

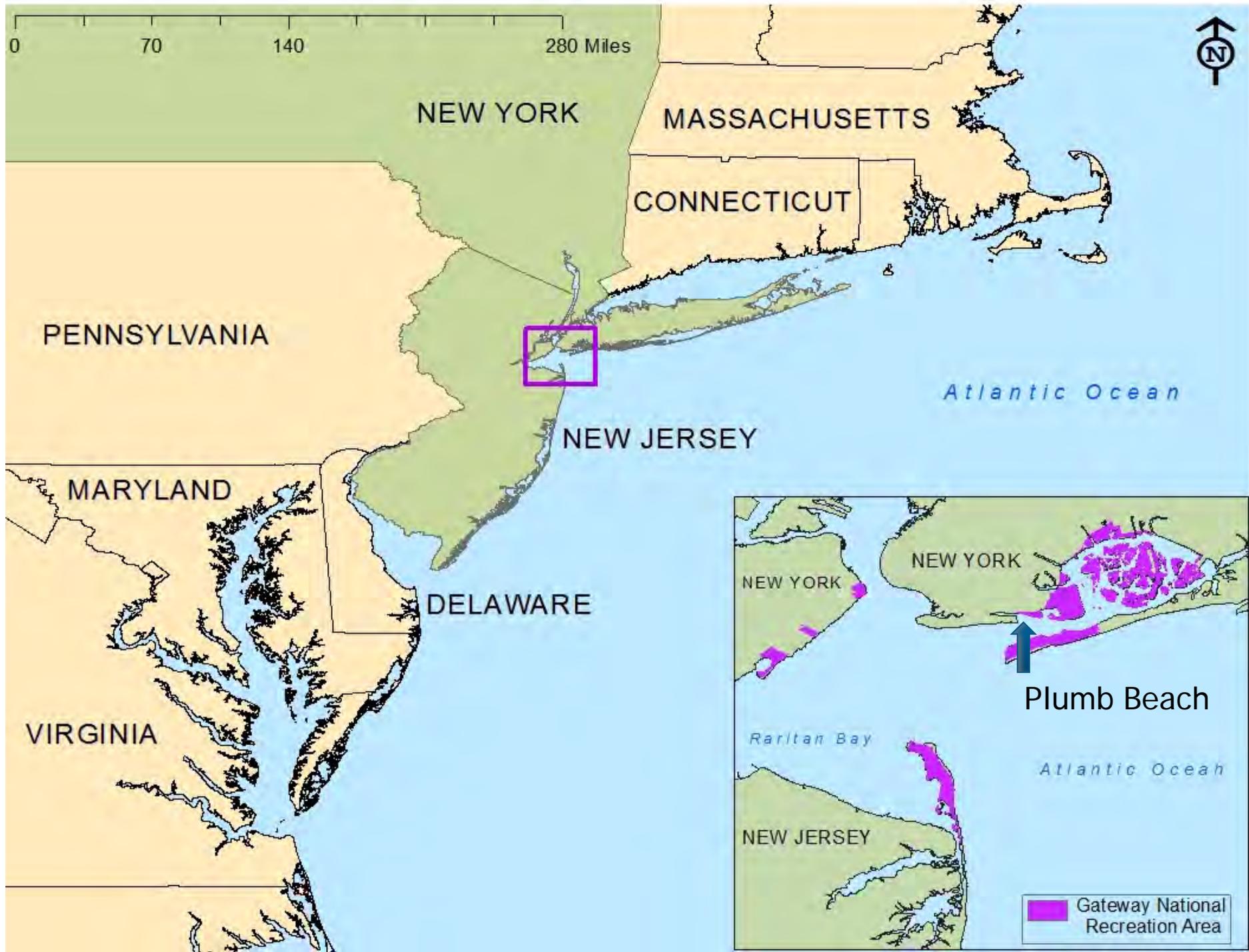
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Jamaica Bay / Urban Resilience
October, New York





Issues of Sediment Management

- Geomorphological Evolution under negative sediment budget
- Attempts at coastal stability
- Impacts of erosion
- Impacts of deposition
- Sediment recycling??

Remnant barrier
island

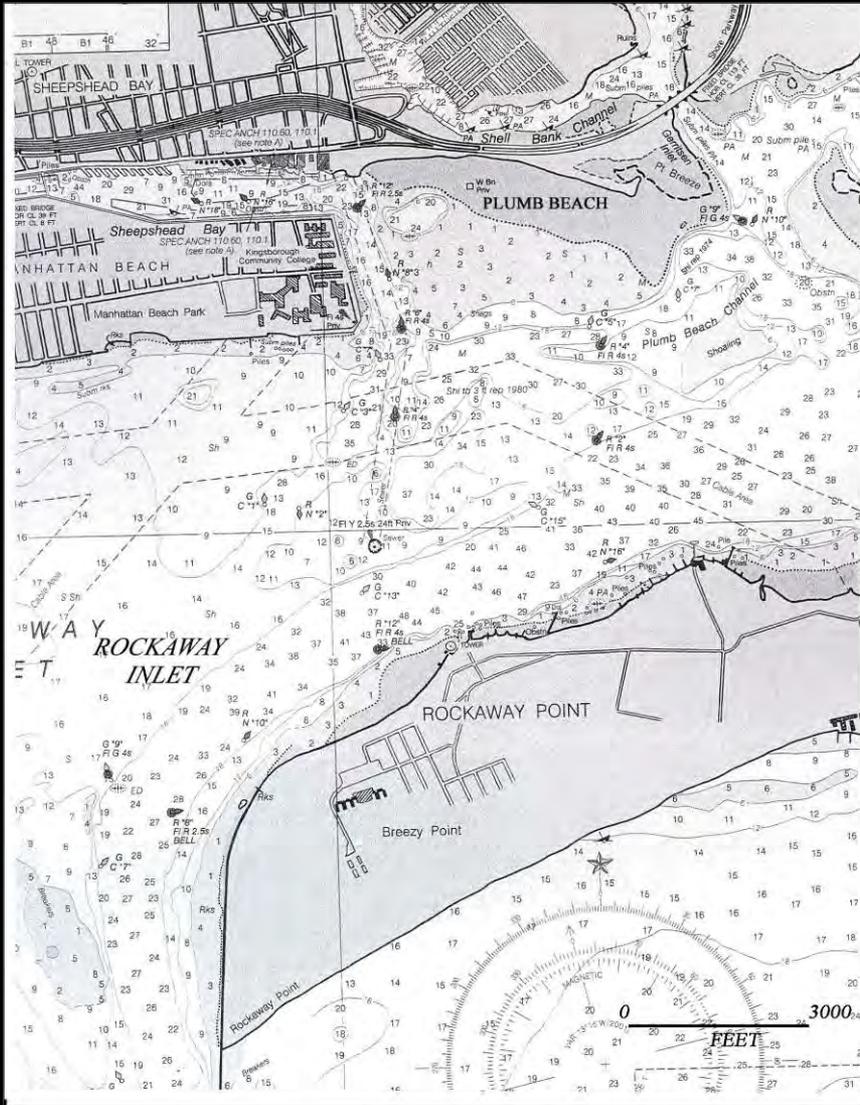
isolated by migration
isolated by dredging

negative sediment
budget

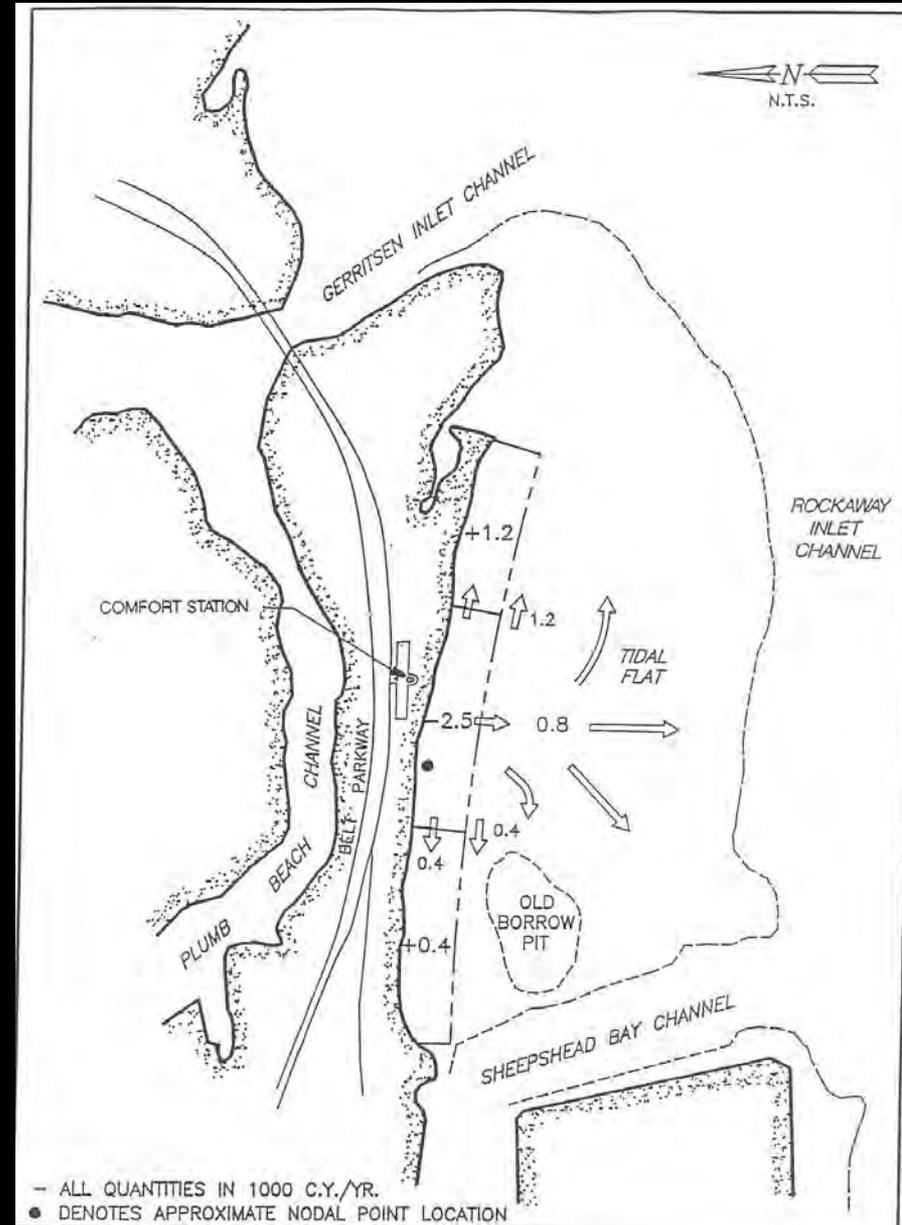
displaced inland

fill for highway

limited incident waves

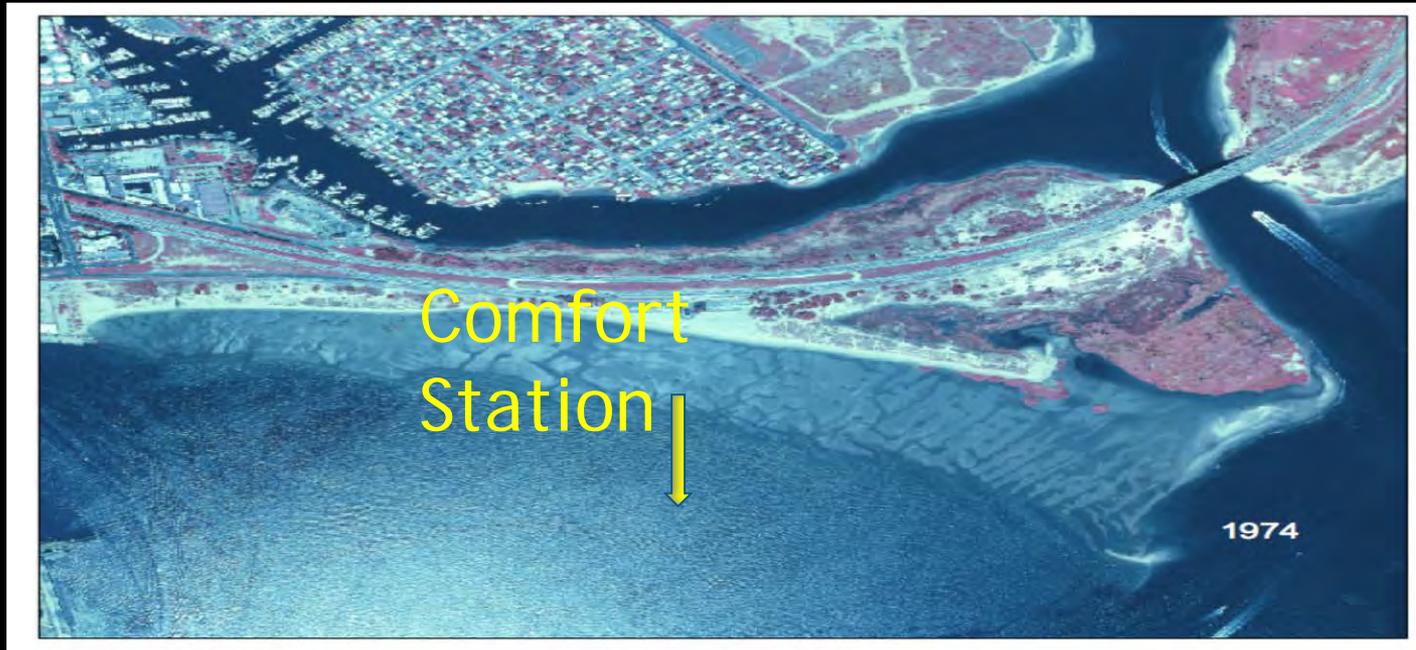


Transport Vectors



Shoreline Displacement, 1924-2008





Shoreline position

Shore perpendicular and shore parallel sand ridges

Spit extending over wetland

Apr. 3, 1994
1994 2009

April 1994 aerial photo

72,000 m³

Placed in central portion 1992

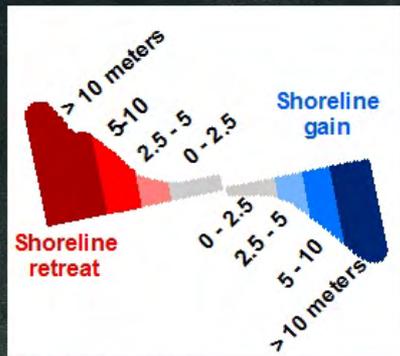
Modest accumulation

Alongshore, into wetlands

464 m

Plumb Beach Shoreline Change 2008-2012

Location of NAVD88: April 2012



0 125 250 500 Meters



Beach face stabilized, upper beach and pathway eroded



Dune and beach atop marshland, extending downdrift and inland



Sediment loss >2X
Downdrift erosion
Lessen wetland impacts
New nearshore pathway

September 2008 - September 2012

Net Change: **-14,425 m³**

Total Accretion: **7,339.14 m³**

Total Erosion: **21,764.977 m³**

Change in Elevation

(meters)



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