



Buy-Outs for Nature

Aligning Investments in Coastal Resilience and Adaptation

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Up to 6' by 2100
along the eastern
US seaboard

Estimate range
shifting higher

REGIONAL SEA LEVEL RISE RATES IN THE U.S.
2002-2014

Northeast	9.1 mm/yr
Southeast	6.7 mm/yr
West Coast	-0.3 mm/yr
Gulf of Mexico	5.9 mm/yr
Global average	2.7 mm/yr

Source: Rietbroek et al., Revisiting the contemporary sea level budget on global and regional scales, PNAS

Accelerating Sea Level Rise

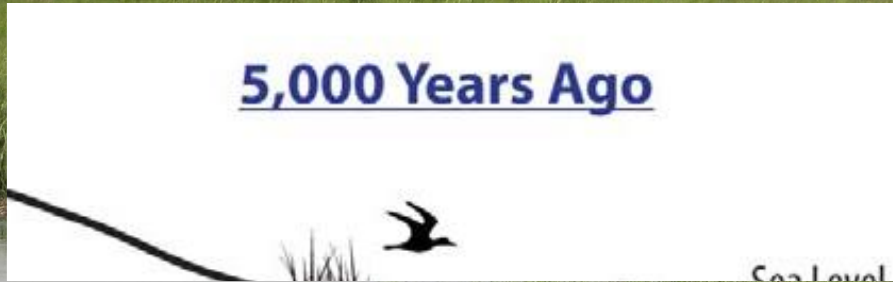


Coastal Habitats

Build Up, Migrate or Drown

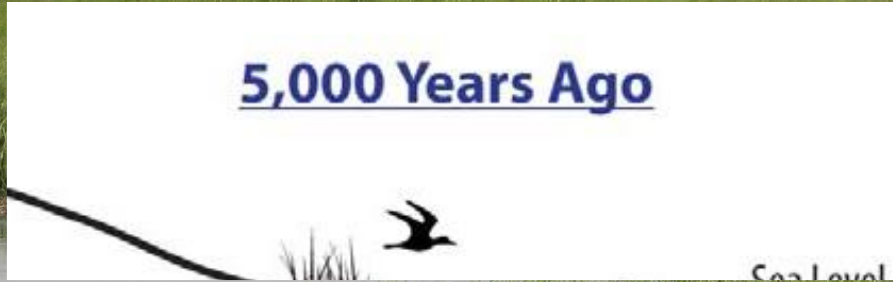


complete habitat loss where
shoreline is hardened

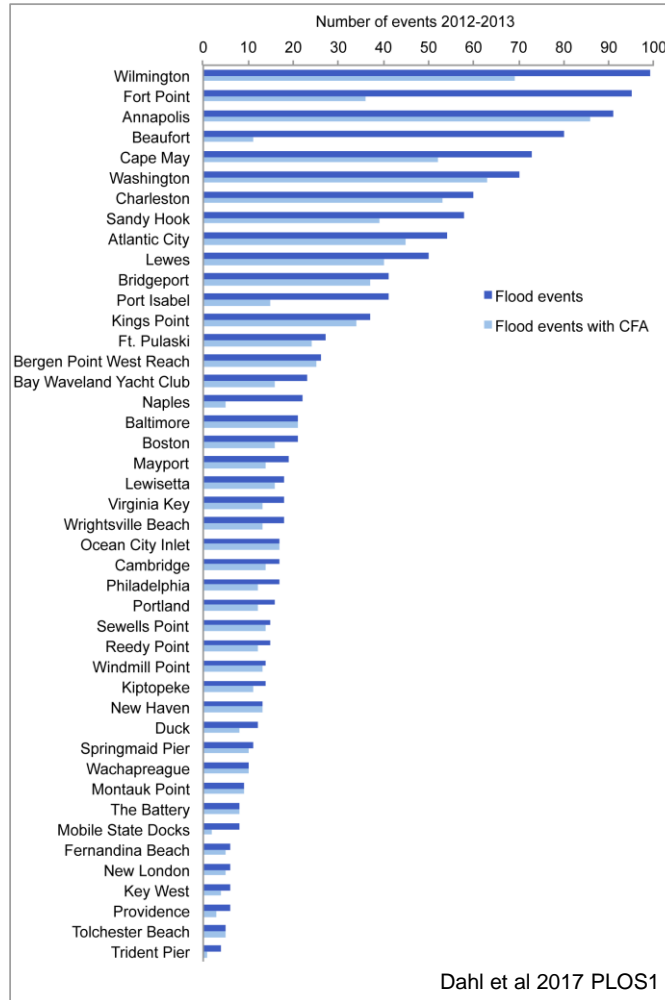
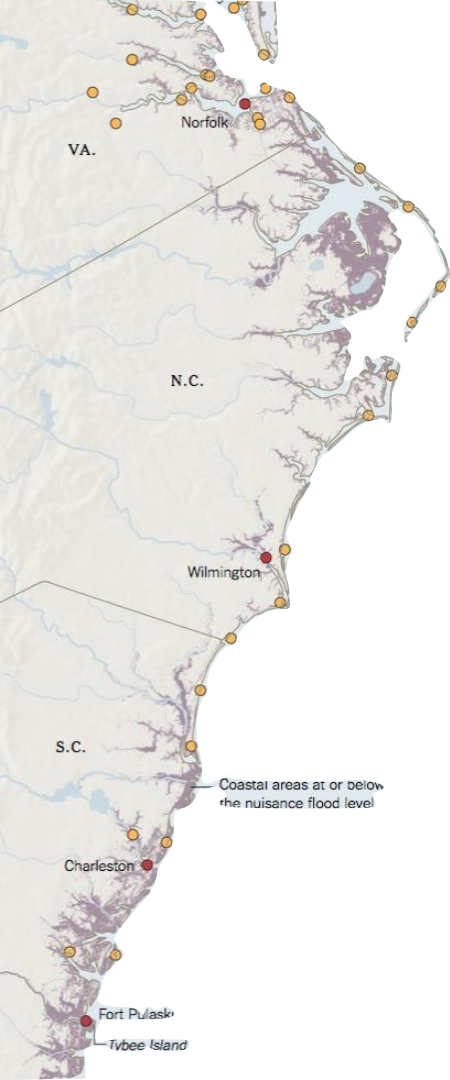


habitat migration potential where
there is vacant land

Coastal Habitats
Build Up, Migrate or Drown



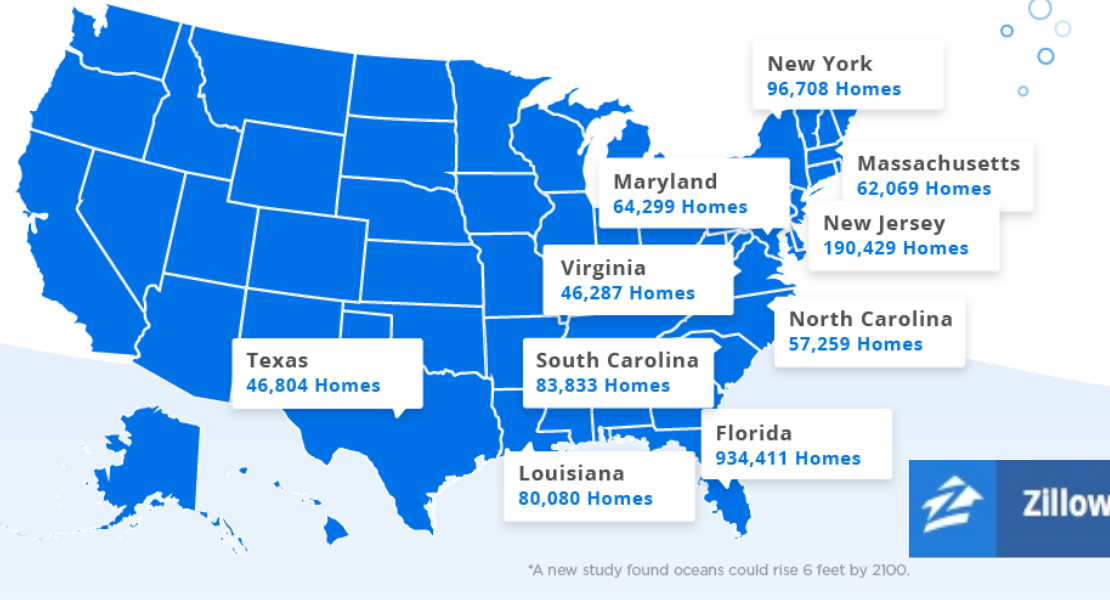
Coastal Habitats
Build Up, Migrate or Drown



Flooding & Defense

How many homes would be under water if the oceans rose 6 feet?*

Nationally, 1.9 million homes worth **\$882 billion**.



‘We can’t spend an infinite amount of money defending the coast. And the concept of retreat, which is sort of un-American, has to be normalized. It has to become part of the culture.’
-Michael Oppenheimer
(Princeton University)

UNDERWATER

A Long Term Systemic Risk



MANAGED RETREAT
Buy-Outs

Hurricane Sandy
NY-NJ-CT: ~\$750M



MANAGED RETREAT
Buy-Outs

Isle de Jean Charles, LA
\$48M

Reeling From Effects of Climate Change, Alaskan Village Votes to Relocate

By CHRISTOPHER MELE and DANIEL VICTOR AUG. 19, 2016



An abandoned house at the west end of Shishmaref, Alaska, that slid during a storm in 2005. Residents have voted in favor of relocating the community to the mainland.

Photo: Michael Grecco/Associated Press

The New York Times

U.S.

Resettling the First American 'Climate Refugees'

By CORAL DAVENPORT and CAMPBELL ROBERTSON



MANAGED RETREAT
Buy-Outs

Shishmaref, AK
~\$180M



Buy-Out Programs

Financing for Coastal Restoration

Generally, properties acquired with FEMA and CDBG funding must be preserved as open space.

*“subrecipients must apply deed-restriction language to all acquired properties to **ensure that the property is maintained in perpetuity as open space, consistent with natural floodplain functions**”*

Eligibility

State agencies, tribal agencies, federally recognized tribes, local governments, and private nonprofits

Matching

Typically 25% cost share

Federal emergency Management Agency

- Hazard Mitigation Grant Program
- Pre-disaster Mitigation Grant Program
- Flood Mitigation Assistance Program

Housing and Urban Development

- Community Development Block Grants

US Department of Agriculture

- Emergency Watershed Protection-Floodplain Easement Program



THE PITCH
Align Buy-Outs with Coastal Conservation

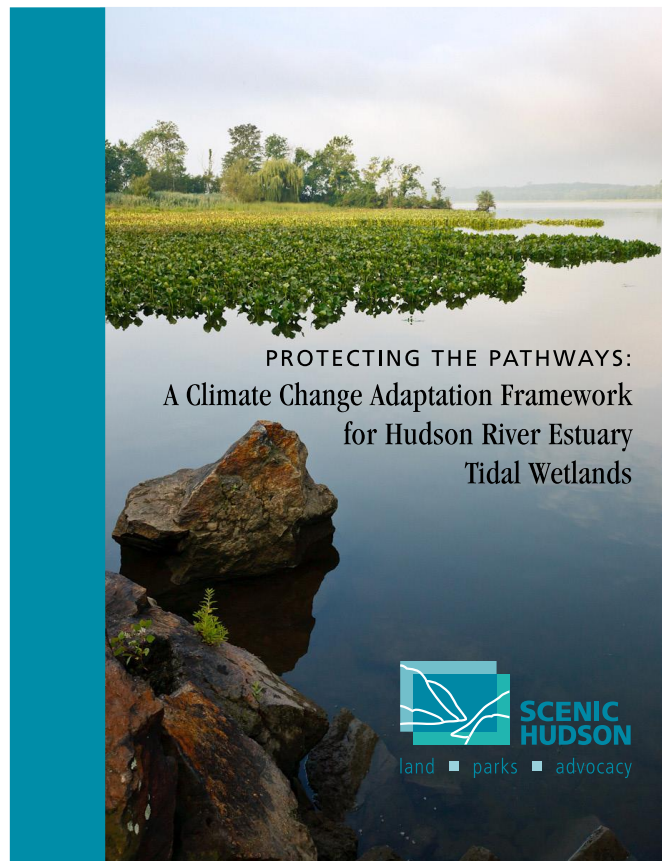
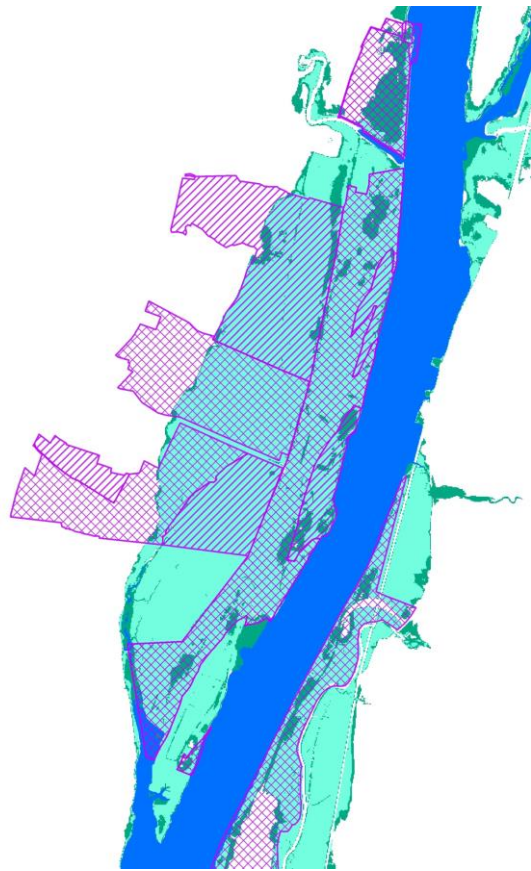
**\$1-10 Billion Annually for
Coastal Conservation**



Align Buy-Outs with Coastal Conservation

THE PITCH

- Coastal Habitat Adaptation Priorities
- Proactive Retreat Projects
- Innovative Buy-Out Financing

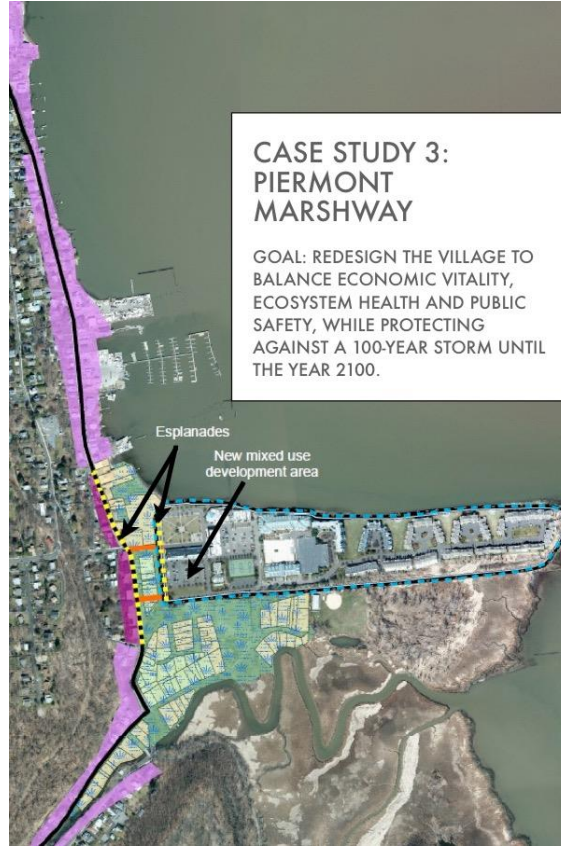


Habitat Migration Models

Restoration Potential

Open Space Use Values

Coastal Habitat Adaptation Priorities



Pre-Disaster

Risk/Costs/Benefits

Sustained Engagement

Proactive Retreat Projects



New Approaches to Buy-Outs

Sea Level Rise Estate

Restrictions on protective structures, hydrology manipulations

Conveyance of ownership at pre-determined sea level trigger

Provides for near-term usage by fee owner

Buy-out at reduced present cost

Eventual transformation /restoration to coastal habitat



New Approaches to Buy-Outs

Transfer of Development Rights

Developers provide funding for buy-out match

Rights transfer to receiving areas within municipality

Attracts private capital

Transfer of rights within a municipality maintains tax base



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