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"How Big Should My Water Wings Be?"

Margaret Davidson
NOAA

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“How Big Should My Water Wings Be?”

Margaret Davidson
Acting Director
NOAA Office of Ocean and Coastal Resource Management
Coastal Vulnerability Around the World
Coastal Communities: Vital to U.S. and International Economies

- 45 percent of the U.S. national gross domestic product is contributed by coastal communities
  - 51 million jobs

- Coastal habitats help reduce impacts of floods, storms, and climate change on coastal communities by absorbing water, wave energy, and other stressors.
Billion Dollar Disasters: Fact of Life

A Record 14 Disasters in the U.S. in 2011
Three more approaching $1B
Weather-related versus Geophysical Events

Source: Munich RE
Sea Level Trend: Atlantic City, NJ

Mean Sea Level Trend
Greenland Ice Melt
Determining Risk

Probability (Frequency)

Consequence
(Life, Economic, Political, Habitat, Social)

Severe
Avoid

Significant
Reduce or Prevent

Slight
Transfer

Almost Never
Slight
Moderate
Definite

Retain

Chart courtesy of Western Kentucky University
Sandy: A Turning Point?
Inundation with 1 foot of sea level rise

Inundation with 6 feet of sea level rise

Shrewsbury River, NJ
Shared Flood Risk Management: Buying Down Risk

- Initial Risk
- Zoning & Building Codes
- Outreach
- Contingency Plans
- Insurance
- Non-Structural
- Structural

Risk Reduction Tools (Cumulative)

All stakeholders contribute to reducing risk!
Adaptation Costs of Climate Change Risks

INSURED VALUE OF COASTAL PROPERTIES BY STATE, 2007

(Billions of Dollars)

- Maryland: $14.9
- Mississippi: $51.8
- Rhode Island: $54.1
- New Hampshire: $55.7
- Delaware: $60.6
- Georgia: $85.6
- Alabama: $92.5
- North Carolina: $132.8
- Maine: $146.9
- Virginia: $158.8
- South Carolina: $191.9
- Louisiana: $224.4
- Connecticut: $479.9
- New Jersey: $635.5
- Massachusetts: $772.8
- Texas: $895.1
- New York: $2,378.9
- Florida: $2,458.6

Total value all states = $8.9 trillion

Source: AIR Worldwide.

Note: Figures are the estimated cost to replace insured and insurable residential and commercial structures, including their contents and business interruption coverage, in coastal counties along the U.S. East and Gulf coasts.
Multiple Lines of Defense
Green/Gray Infrastructure
HAPPY HOUR, April 22nd

ANOTHER MUDSLIDE!
I'LL HAVE A DARK AND STORMY!
ONE MORE HURRICANE!

HOW CLIMATE CHANGE SCIENTISTS DROWN THEIR SORROWS.
Change is Here: Time to Act is Now