

# Managing and Communicating Risk: A Reinsurance Perspective

**Mike Cohen**

Vice President, Government Affairs RenaissanceRe  
Director, RenaissanceRe Risk Sciences Foundation

# Reinsurance: “Insurance for Insurance Companies”

## Why do you buy insurance?

*Protection for catastrophic loss to your family:*



*Share your risk with others insured by a primary insurance company – good diversification*

## Why does your insurer buy reinsurance?

*Protection for catastrophic losses to an insurer:*



*Spread catastrophic risks with others around the world – very significant diversification*

# Reinsurers are Incented to Help Mitigate Climate Risks...

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*...that are reinsured.*



# RenaissanceRe – Committed to Mitigation

- WeatherPredict's advanced scientists provide atmospheric perils intelligence
- Sponsor of Risk Mitigation Leadership Forums
- National Partner with FLASH and IBHS
- RenaissanceRe Wall of Wind at FIU
- StormStruck at Walt Disney World's EPCOT
- IBHS Research Center founding sponsor



WeatherPredict Consulting Inc



# Supporting Science and Practical Research

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**Institute for  
Business &  
Home Safety®**

# RenaissanceRe and Climate Change

changes or rulings by the FSA could impact RSML's business strategy or financial assumptions, possibly resulting in an adverse effect on RSML's financial condition and operating results.

**Change of Control.** The FSA regulates the acquisition of control of any Lloyd's managing agent which is authorized under the FSMA. Any company or individual that, together with its or his associates, directly or indirectly acquires 10% or more of the shares in a Lloyd's managing agent or its parent company, or is entitled to exercise or control the exercise of 10% or more of the voting power in such Lloyd's managing agent or its parent company, would be considered to have acquired control for the purposes of the relevant legislation, as would a person who had significant influence over the management of such Lloyd's managing agent or its parent company by virtue of his shareholding or voting power in either. A purchaser of 10% or more of RenaissanceRe's common shares or voting power would therefore be considered to have acquired control of RSML. Under the FSMA, any person or entity proposing to acquire control over a Lloyd's managing agent must give prior notification to the FSA of his or the entity's intention to do so. The FSA would then have sixty working days to consider the application to acquire control. Failure to make the relevant prior application could result in action being taken against RSML by the FSA. Lloyd's approval is also required before any person can acquire control (using the same definition as for the FSA) of a Lloyd's managing agent or Lloyd's corporate member.

**Other Applicable Laws.** Lloyd's worldwide insurance and reinsurance business is subject to various regulations, laws, treaties and other applicable policies of the European Union, as well as each nation, state and locality in which it operates. Material changes in governmental requirements and laws could have an adverse effect on Lloyd's and its member companies, including RSML and RenaissanceRe CCL.

#### Solvency II

Solvency II was adopted by the European Parliament in April of 2009. Implementation of Solvency II by the European Commission is expected to take effect January 1, 2013 in the European Union Member States, and will replace the current solvency requirements. Solvency II adopts a risk-based approach to insurance regulation. Its principal goals are to improve the correlation between capital and risk, effect group supervision of insurance and reinsurance affiliates, implement a uniform capital adequacy structure for insurers across the European Union Member States, establish consistent corporate governance standards for insurance and reinsurance companies, and establish transparency through standard reporting of insurance operations. Under Solvency II, an insurer's or reinsurer's capital adequacy in relation to various insurance and business risks may be measured with an internal model developed by the insurer or reinsurer and approved for use by the Member State's regulator or pursuant to a standard formula developed by the European Commission. It is anticipated that insurers or reinsurers with approved internal models will generally have lower capital needs. With respect to Syndicate 1458, implementation of Solvency II may require increases in capital and may negatively impact our financial results. Implementation of Solvency II will require us to utilize a significant amount of resources to ensure compliance. We are monitoring the ongoing legislative and regulatory steps following adoption of Solvency II. The principles, standards and requirements of Solvency II may also, directly or indirectly, impact the future supervision of additional operating subsidiaries of ours.

#### Environmental and Climate Change Matters

Our principal coverages and services relate to natural disasters and catastrophes, such as earthquakes or hurricanes. We believe, and believe the consensus view of current scientific studies substantiates, that changes in climate conditions, primarily global temperatures and expected sea levels, are likely to increase the severity, and possibly the frequency, of natural disasters and catastrophes relative to the historical experience over the past 100 years. We expect that trend will increase the risk of claims under our property and casualty lines of business, particularly with respect to properties located in coastal areas, among others. While a substantial portion of our coverages accordingly may be adversely impacted by climate change, we have taken certain measures, to the extent permissible by law and prevailing market conditions, to mitigate against such losses by giving consideration to these risks in our underwriting decisions. We continuously monitor and adjust, as we believe appropriate, our risk management models to reflect our judgment of how to interpret current developments and information such as the studies referred to above. However, it is possible that, even after these assessments, we will have underestimated the frequency or severity of hurricanes or other catastrophes. To the extent broad environmental factors, exacerbated by climate change or otherwise, lead to increases in likely insured losses, particularly if those losses exceed expectations and the prior estimates of market participants,

“ We believe, and believe the consensus view of current scientific studies substantiates, that change in climate conditions, primarily global temperatures and expected sea levels, are likely to increase the severity and possibly the frequency of natural catastrophes relative to the historical experience over the past 100 years.”



## Remove the Clouds that Mask the Need to Adapt

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# Impairments to Adaptation and Wise Land Use

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The U.S. Government Accountability Office (GAO) has found:

- **On NFIP:**

- “By design, NFIP is not an actuarially sound program”
- “eliminating or reducing [NFIP’s] subsidies would help ensure that premium rates more accurately reflected the actual risk of loss and could encourage mitigation efforts”

- **On State Reinsurance Funds:**

- “[Because of Florida Hurricane Catastrophe Fund subsidies] homeowners may not be paying premiums that fully reflect the risk of loss and may be more likely to forego mitigation efforts.”

- **On Federal Cat Funds or “Backstops”:**

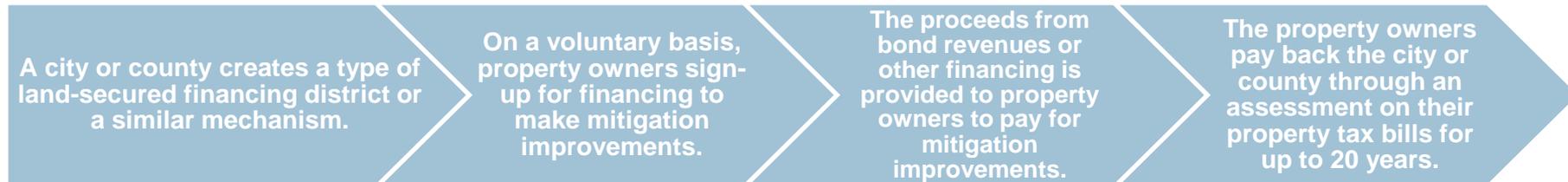
- “unless [a] federal [backstop] program charged premiums that fully reflect the risk of loss, it could inadvertently encourage further development and population growth in areas with high natural catastrophe risk.”

# Consider Adopting the PACE Approach

## Steps in land-secured financing



## Steps in PACE

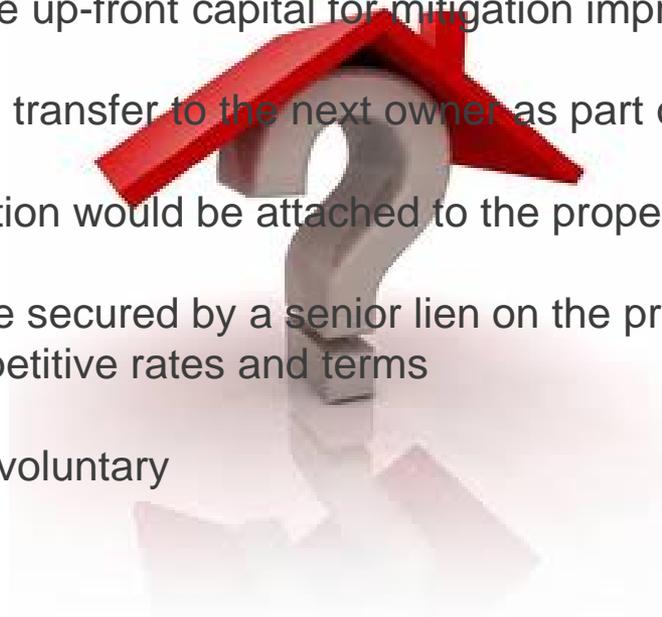


- Consistent with existing land-secured financing, which towns and cities across the U.S. have used for over 100 years to pay for improvements in the public interest.
- 25 states currently use the PACE model

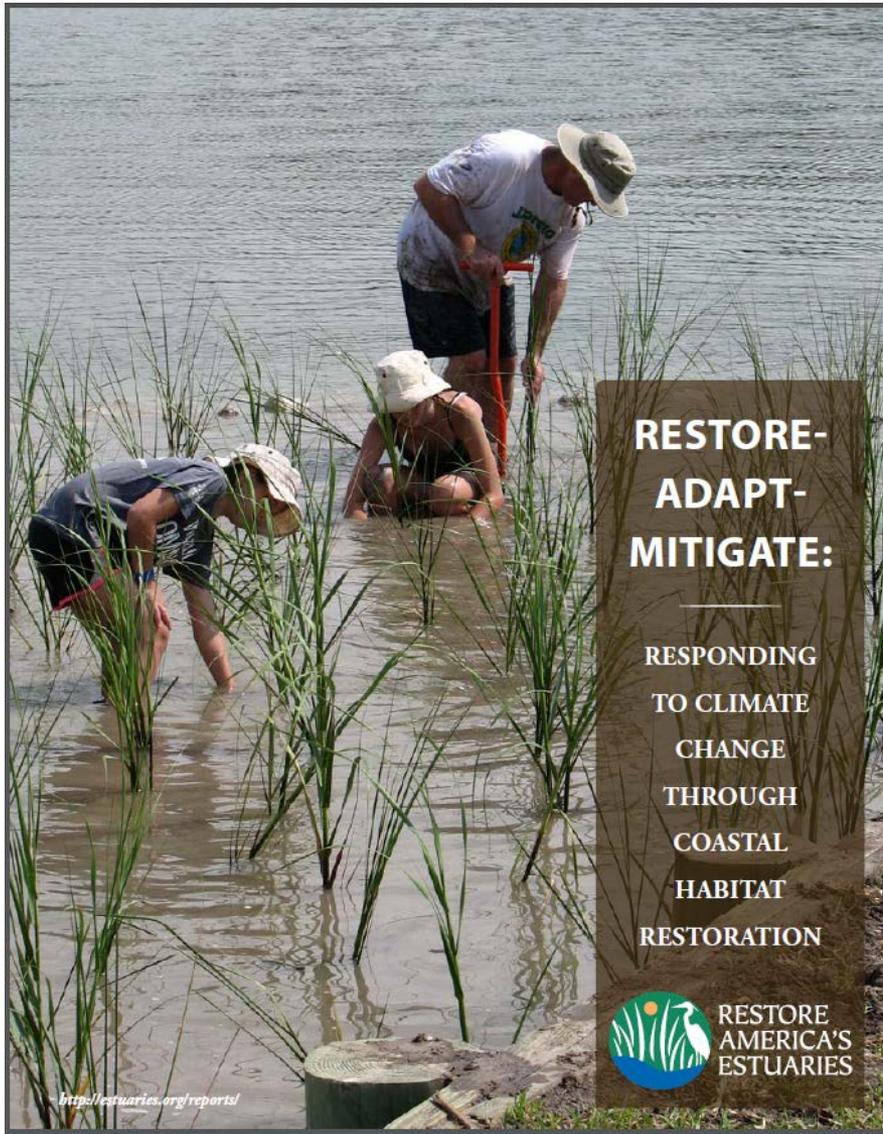
# Property Assessed Mitigation Improvement (PAMI)

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- Mitigation improvements funded through an on-going assessment on property tax bills
- PAMI would not require up-front capital for mitigation improvements
- Mitigation investments transfer to the next owner as part of the property's annual tax bill
- The repayment obligation would be attached to the property
- Debt would typically be secured by a senior lien on the property, which would help attract private capital at competitive rates and terms
- PAMI would be 100% voluntary

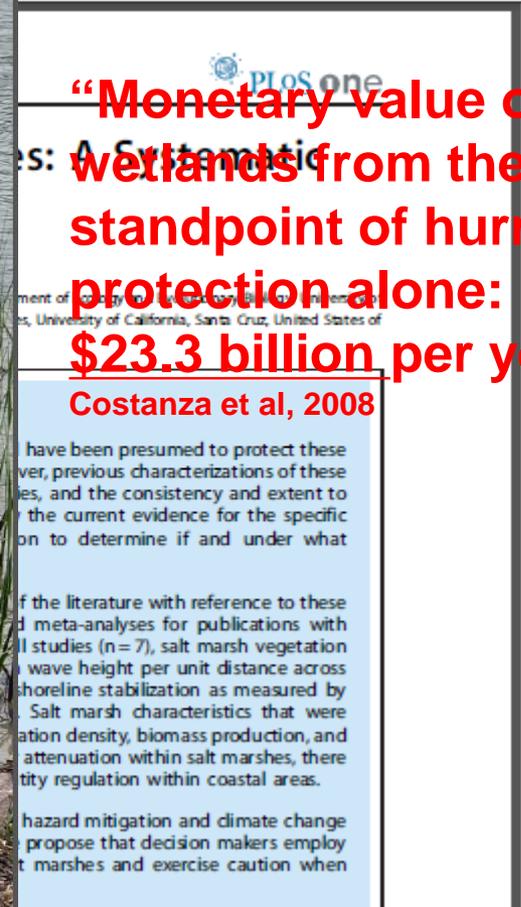


# Evaluate the Benefits of Green Infrastructure



**RESTORE-  
ADAPT-  
MITIGATE:**

RESPONDING  
TO CLIMATE  
CHANGE  
THROUGH  
COASTAL  
HABITAT  
RESTORATION



**“Monetary value of U.S. wetlands from the standpoint of hurricane protection alone: \$23.3 billion per year”**

**Costanza et al, 2008**

have been presumed to protect these wetlands. However, previous characterizations of these wetlands, and the consistency and extent to which they provide protection, are based on the current evidence for the specific mechanisms of protection to determine if and under what conditions they are effective.

of the literature with reference to these wetlands and meta-analyses for publications with reference to these wetlands (n = 7), salt marsh vegetation density, wave height per unit distance across the marsh, and shoreline stabilization as measured by the rate of shoreline change. Salt marsh characteristics that were associated with higher rates of shoreline stabilization were vegetation density, biomass production, and wave attenuation within salt marshes, therefore providing a natural hazard mitigation within coastal areas.

hazard mitigation and climate change adaptation. We propose that decision makers employ natural hazard mitigation and exercise caution when evaluating the benefits of wetlands for coastal hazard adaptation.

**coastal hazard adaptation”**

# Special Challenges for Americans of Lesser Means

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# Partnering with the Disaster Safety Community



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## Profile

This site provides an access point to the valuable information presented at, and generated by the Risk Mitigation Leadership Forums and associated Conferences.

The Forums and Conferences are a series of invitation-only events, bringing together academics, scientists, conservationists and public and private sector representatives to advance risk mitigation efforts and awareness.

The events seek to achieve the following goals:

- Identify key factors relating to preserving life and safety, as well as the economic impacts of natural disasters to the United States.
- Engage with leading public policy makers who have to manage catastrophic risk in relations to societal needs.
- Explore current initiatives in the areas of building mitigation, hazard mitigation and risk financing, as well as how these initiatives can be commercially and economically deployed to mitigate risk.
- Explore and promulgate the best scientific research relating to the risks of natural perils, and how they may be mitigated or avoided.
- Create an environment of exchange so participants can interchange ideas and capitalize on insights generated at each event.



The RenaissanceRe Risk Sciences Foundation has been honored with the *Outstanding Achievement Award for Mitigation* by the 2011 National Hurricane Conference. The award recognizes the Risk Mitigation Leadership Forum Series and its five Forums held to date as "an outstanding and innovative achievement, worthy of emulation by others around the country." Pictured are (from left to right): Bill Read, Director, National Hurricane Center; Stephen Weinstein, Chairman, RenaissanceRe Risk Sciences Foundation; Eric Williford, Senior Scientist, WeatherPredict Consulting Inc.; and Max Mayfield, Former Director, National Hurricane Center (Photo: Business Wire)

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BUILD IT  
BETTER  
LEADERSHIP  
FORUM

A Risk Mitigation Leadership Forum Event

## REGISTRATION OPEN

May 16-17, 2013

Charlotte Marriott City Center  
Charlotte, NC



“The challenge is not just to build back, but to build back better than before.”

New York Governor, Andrew Cuomo, November 2012

**Following Hurricane Sandy, working together to examine and encourage better construction practices to make communities safer in extreme weather is more important than ever.**

At this Leadership Forum, the 9th in our series, we'll bring together experts to identify and discuss mitigation best practices, public policy efforts, communication success stories, and emerging research to make communities more resilient.

Featuring a keynote address from Wayne Goodwin, North Carolina Commissioner of Insurance, and a free, private tour of the ground-breaking IBHS Research Center; limited to the first 100 attendees who sign up online.

Speakers to include:

- Rick Knabb\*, Ph.D., Director of the National Hurricane Center

NEWS & DEVELOPMENTS

▶ "IBHS Live Hail Test", NBC Today – February 20, 2013  
[Click here to view video](#)

▶ "Climate Change & Insurance: Existential Threat-or Extraordinary Opportunity?", National Underwriter – February 5, 2013