REINSURANCE ASSOCIATION OF AMERICA

STATEMENT

# TESTIMONY

# OF


## FRANKLIN W. NUTTER
## PRESIDENT
## REINSURANCE ASSOCIATION OF AMERICA


# CLIMATE CHANGE: IT'S HAPPENING NOW

# BEFORE

## UNITED STATES SENATE
## COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

## JULY 18, 2013


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My name is Frank Nutter and I am President of the Reinsurance Association of America (RAA). The RAA is a national trade association representing reinsurance companies doing business in the United States. RAA membership includes reinsurance underwriters and intermediaries licensed in the U.S. and those that conduct business on a cross border basis.

Thank you for the opportunity to testify before the committee to address the RAA's perspective on weather and climate-related weather impacts in the United States.

Reinsurance is essentially insurance for insurance companies. It is a risk management tool for insurance companies to reduce the volatility in their portfolios and improve their financial performance and security. It is widely recognized that reinsurance performs at least four primary functions—(1) helps insurance companies manage their risks; (2) stabilizes loss experience; (3) provides transfer for insurers of major natural and man-made catastrophe risk; and (4) increases insurance capacity.

Reinsurers have assisted in the recovery from every major natural and man-made catastrophe over the past century. 60% of the insured losses related to the events

of September 11, 2001 were absorbed by the global reinsurance industry. In 2005, 45% of the insured losses from Hurricanes Katrina, Rita and Wilma were paid by reinsurers; in 2011, insured losses for the New Zealand earthquakes totalled $17 billion, with reinsurers paying 73% of that total. In 2012, "Superstorm" Sandy caused an estimated $18 billion in insured losses. Reinsurers are expected to pay up to 40% of the insured losses.

Property casualty insurers are more dependent on the vagaries of climate and weather than any other financial services sector. Within the insurance sector, reinsurers have the greatest financial stake in appropriate risk assessment. The industry is at great financial peril if it does not understand global and regional climate impacts, variability and developing scientific assessment of a changing climate. Integrating this information into the insurance system is an essential function.

Insurance is a critical component for economic and social recovery from the effects of extreme weather and climate driven events. Through its pricing structure it is also a mechanism for conveying the consequences of decisions about where and how we build and where people chose to live. In this regard, it must be proactive and forward-looking in a changing climate/weather environment.

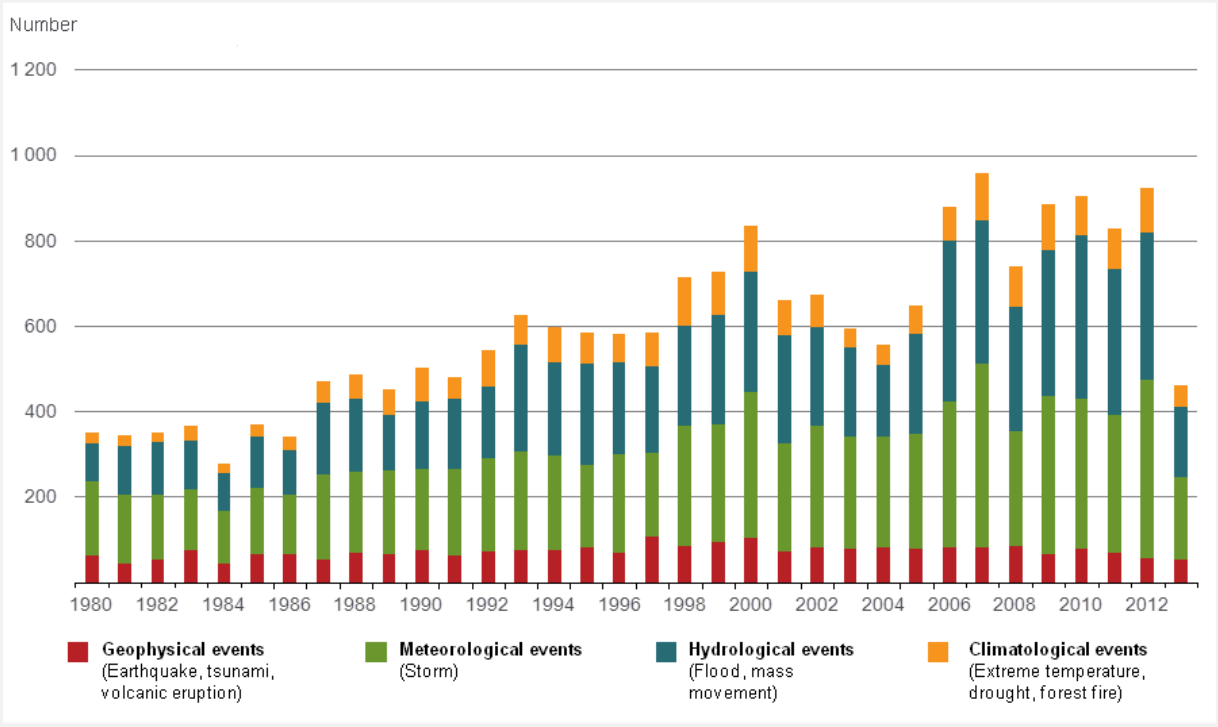
Our industry is science based. Blending the actuarial sciences with the natural sciences is critical in order to provide the public with resources to recover from natural events. As the scientific community's knowledge of changes in our climate and the resulting weather continue to develop, it is important for our communities to incorporate that information into the exposure and risk assessment process, and that it be conveyed to stakeholders, policyholders, the public and public officials that can, or should, address adaptation and mitigation alternatives. Developing an understanding about climate and its impact on droughts, heat waves, the frequency and intensity of tropical hurricanes, thunderstorms and convective events, rising sea levels and storm surge, more extreme precipitation events and flooding is critical to our role in translating the interdependencies of weather, climate risk assessment and pricing.

**Exposure Assessment**

Insurers see climate primarily through the prism of extreme natural events. Research by Munich Re reflects a rising number of natural catastrophes globally and in the U.S.

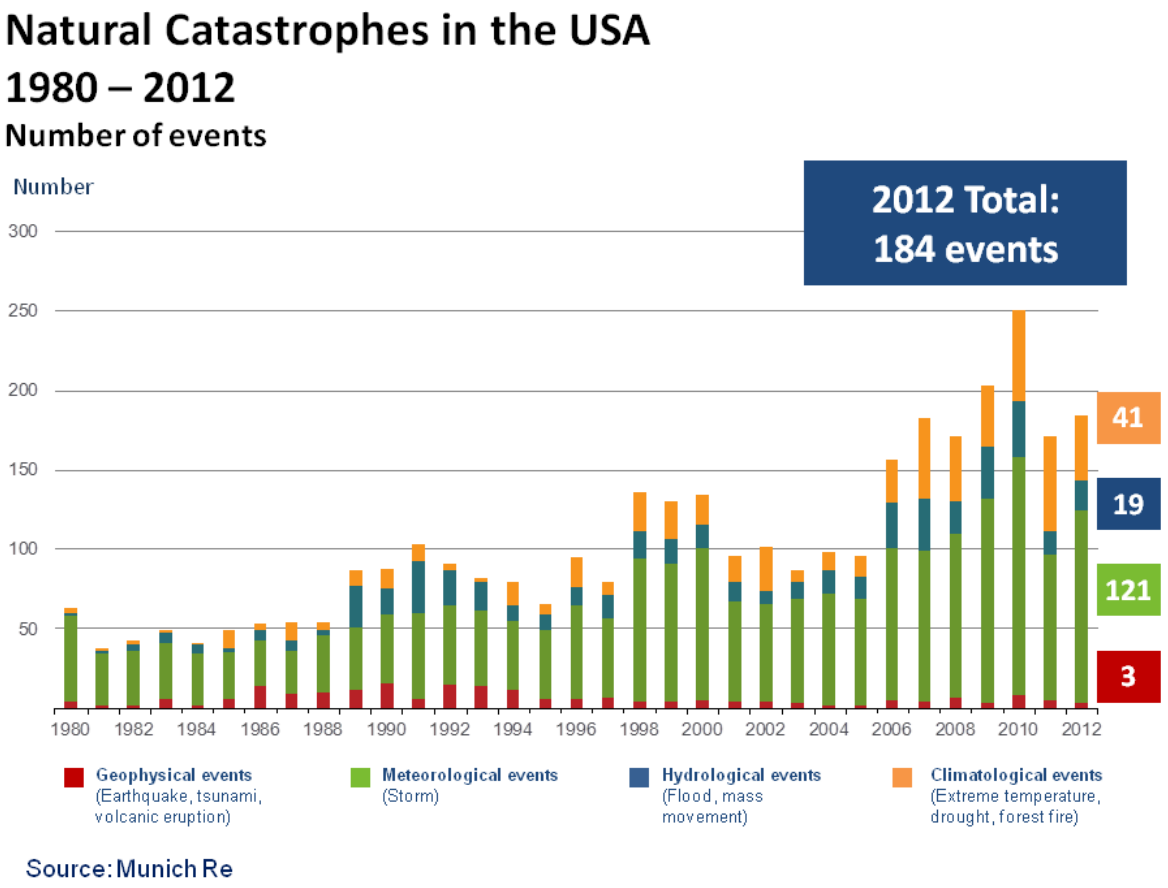
## Natural Catastrophes Worldwide 1980 – 2013

Number of Events (Annual Totals 1980 – 2012 vs. First Six Months 2013)




Source: MR NatCatSERVICE

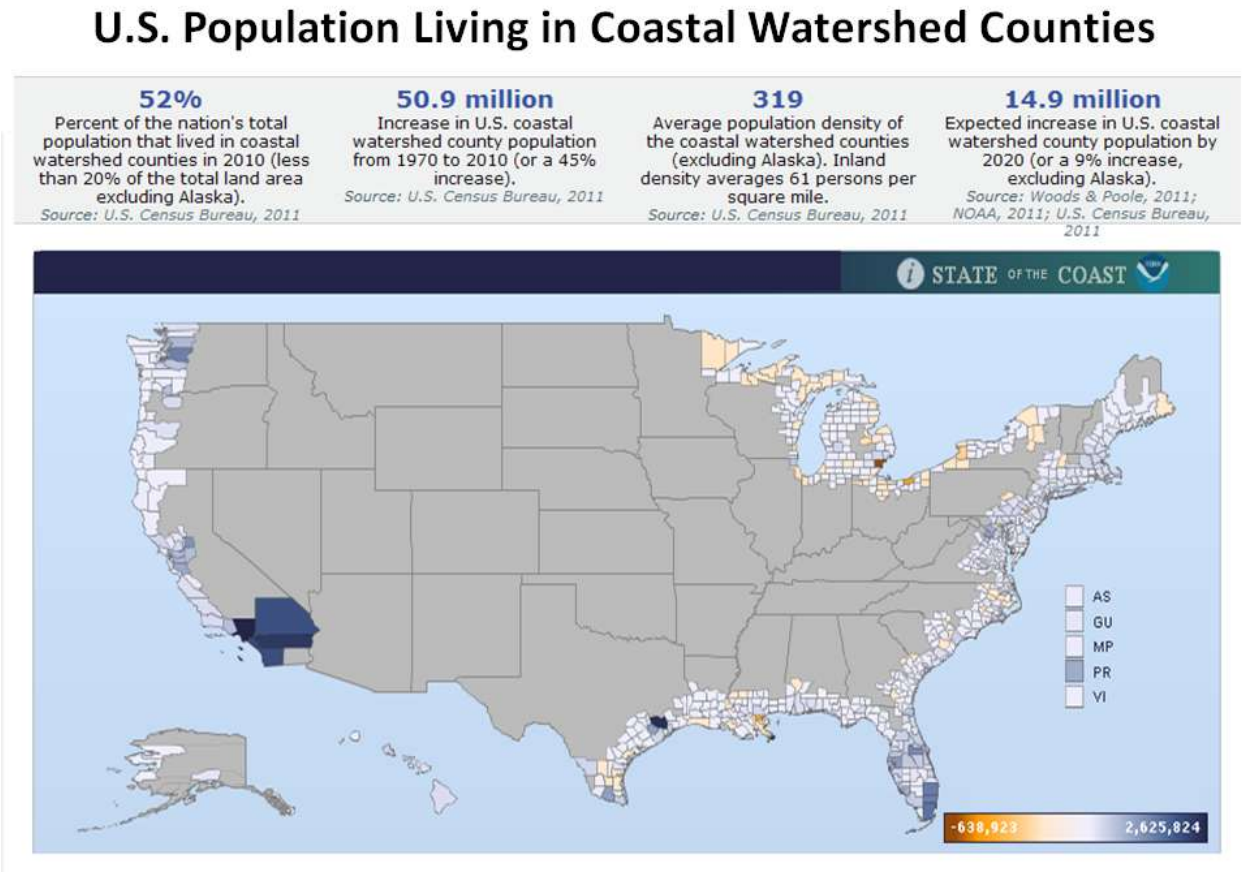
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In the 1980's, the average number of natural catastrophes globally was 400 events per year. In recent years, the average is 1000. Munich Re's analysis suggests the increase is driven almost entirely by weather-related events. North America has seen a fivefold increase in the number of such events since 1980. In comparison, Europe has seen a twofold increase.

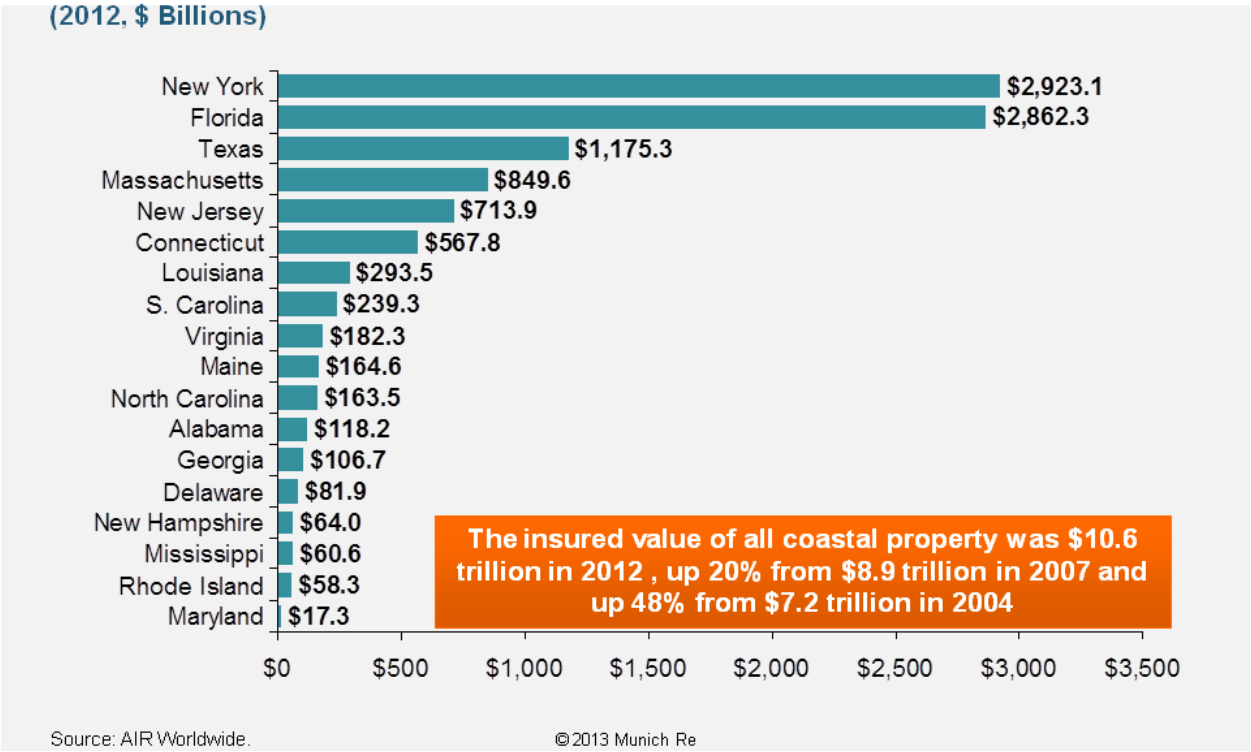
In this regard, it is indisputable that the recent rise in damages, insured, economic and uninsured, is heavily influenced by the concentration of people and property in geographically vulnerable areas. Urbanization, increased development and

population shifts have placed more people with destructible assets in areas most impacted by extreme weather. NOAA's recent State of the Coast report observes that in a U.S. population of 313 million (based on the 2010 census), coastal shoreline counties comprise 39% or 123 million people; watershed counties comprise 52% of the U.S. population. In coastal shoreline counties, NOAA reports there are 49 million housing units with an expected increase in population of 10 million people before the next census in 2020. The NOAA report notes that an average of 1355 building permits are issued per day in these shoreline counties.

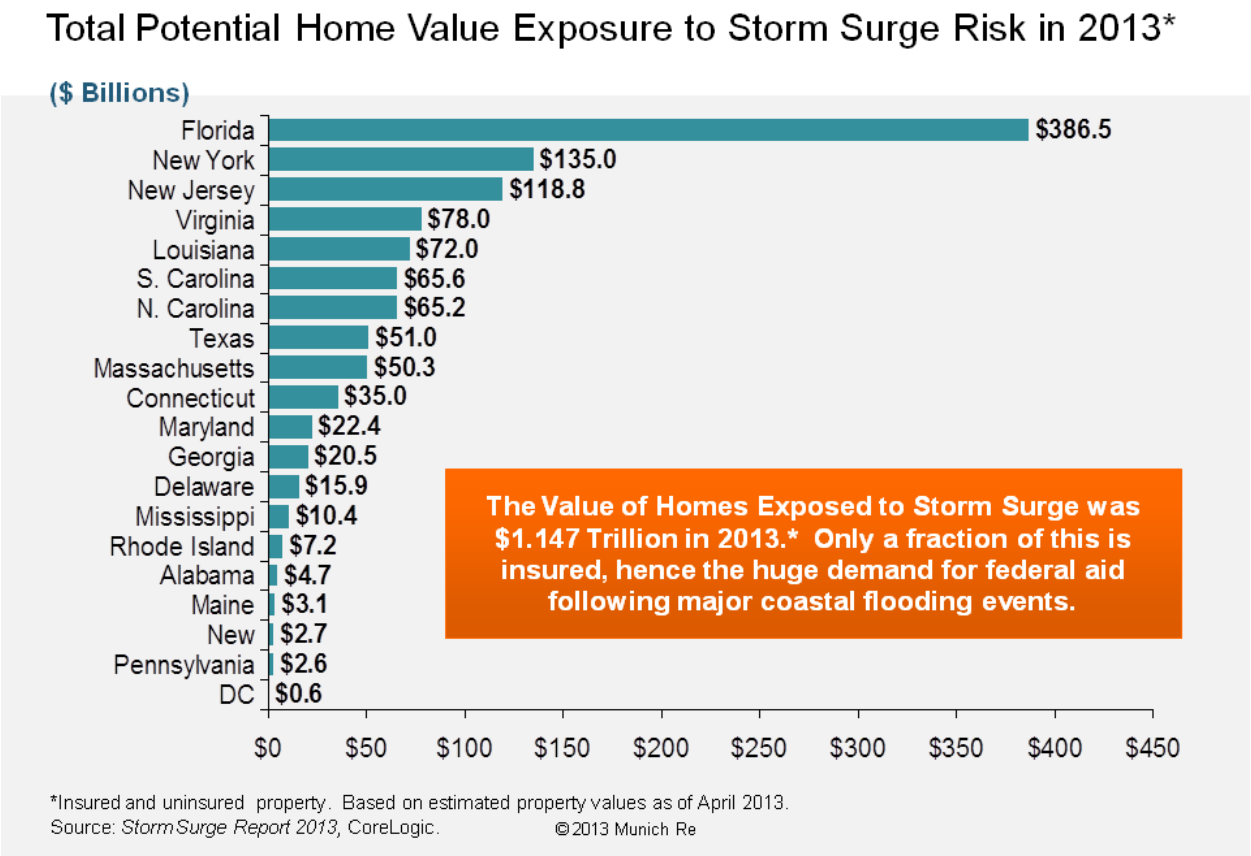


The Insurance Information Institute and Munich Re report that insured coastal property values on the East and Gulf coasts total nearly $10 trillion. Florida and New York each have nearly $3 trillion of insured coastal values.

Total Value of Insured Coastal Exposure in 2012




Research and consulting firm Core Logic reports there are 4.2 million homes along the Gulf and Atlantic coast exposed to storm surge–the most significant factor in damages associated with Superstorm Sandy. Most of these storm surge affected properties are in 10 metropolitan areas. One million of these are in the category of extreme risk to storm surge and another 839,000 in the high risk category. Core Logic notes that 23 of the 25 most populous U.S. counties are ocean-facing.



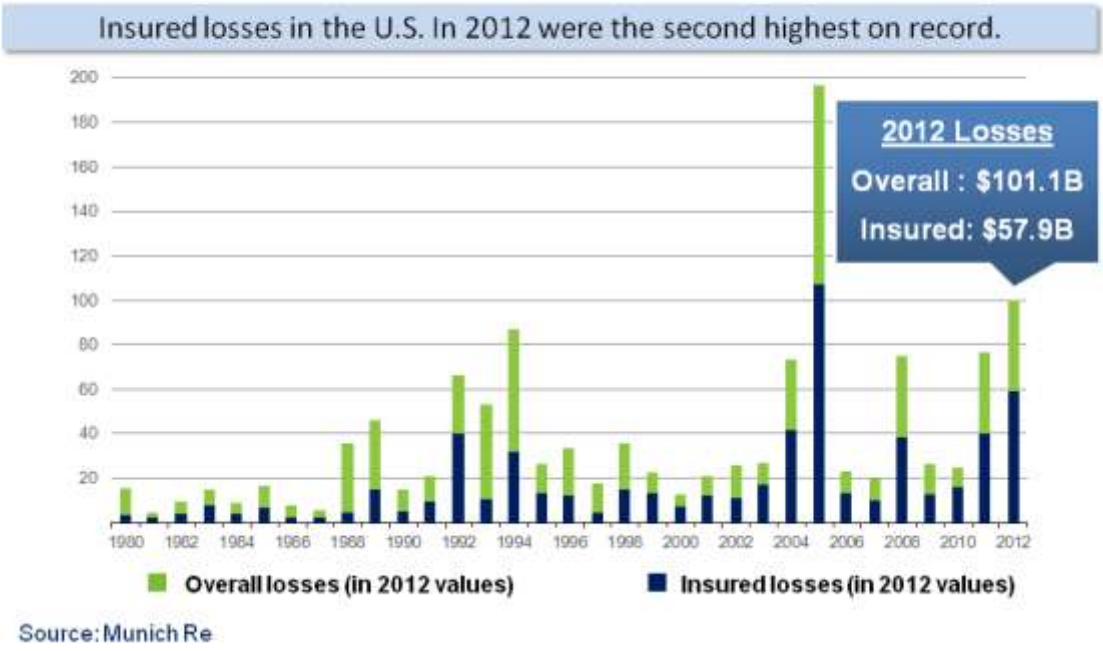

Catastrophe modeling firm AIR estimates the insured value of coastal properties (defined as replacement cost not market value) is expected to increase at a rate of 7% per year which means that values would double every decade.

Together with changes in weather patterns, intensity, and number of events, the result, of course, is an inevitable rise in insured and uninsured damages globally and in the U.S.

## Natural Catastrophes in the USA

### 1980 – 2012

Overall and insured losses

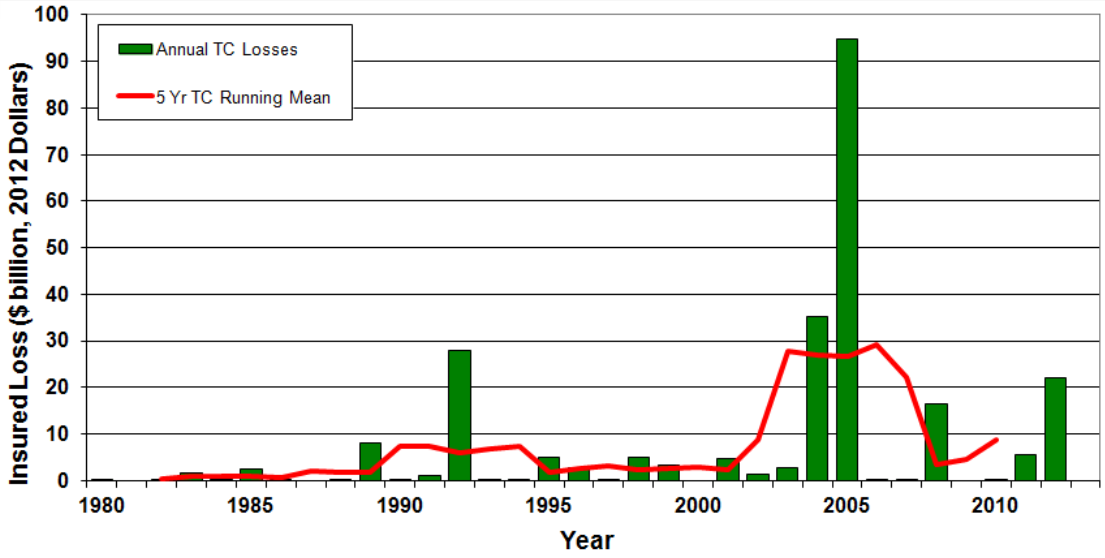



Source: Munich Re

Hurricane related losses tend to dominate the pattern of large losses.

## Insured US Tropical Cyclone Losses, 1980 - 2013

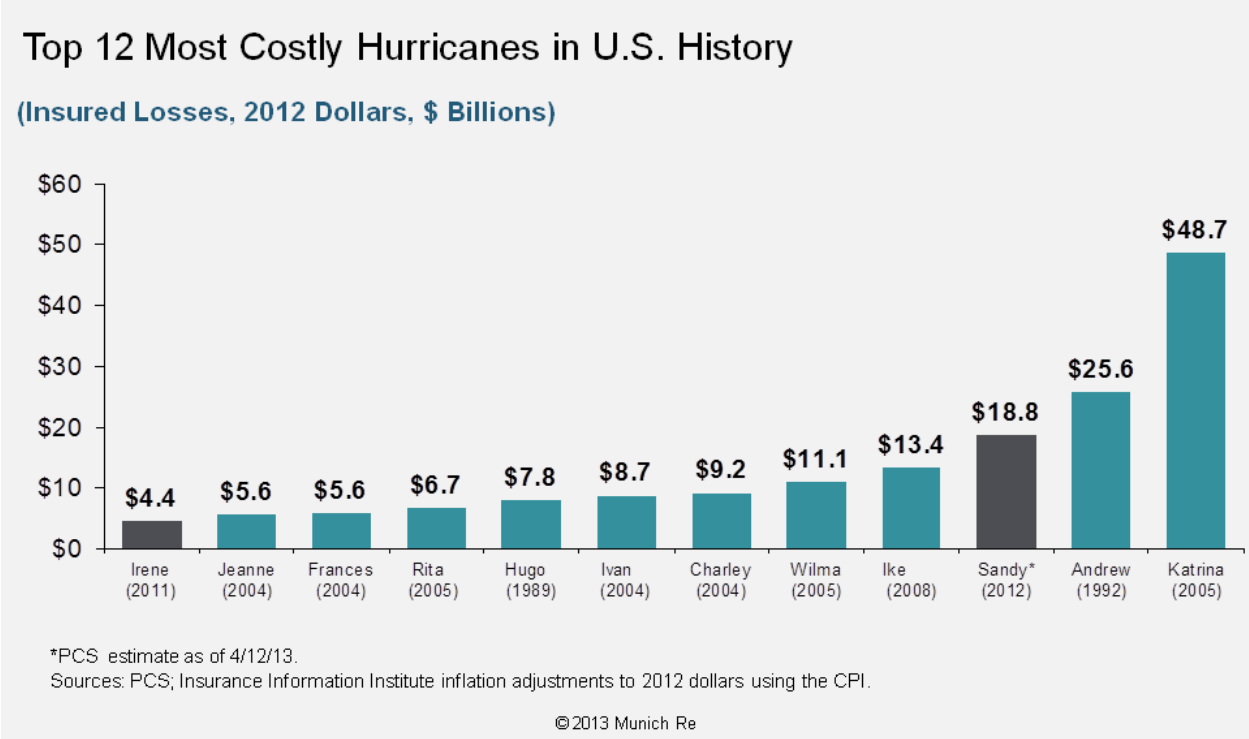
The current 5-year average (2008-2012) for privately insured tropical cyclone losses are $8.8 billion per year.




Sources: Property Claims Service, MR NatCat*SERVICE*, NFIP

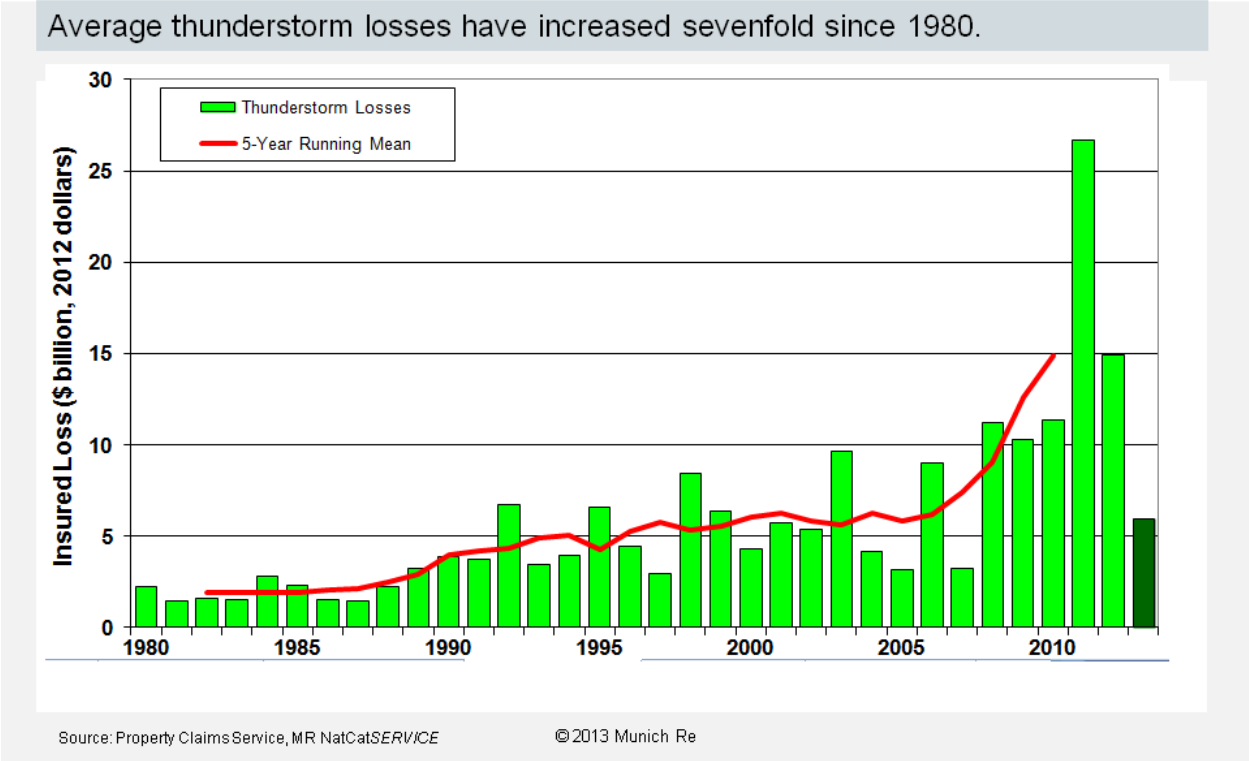
©2013 Munich Re

The pattern is recent. Ten of the 12 most costly hurricanes have occurred in the last nine years.

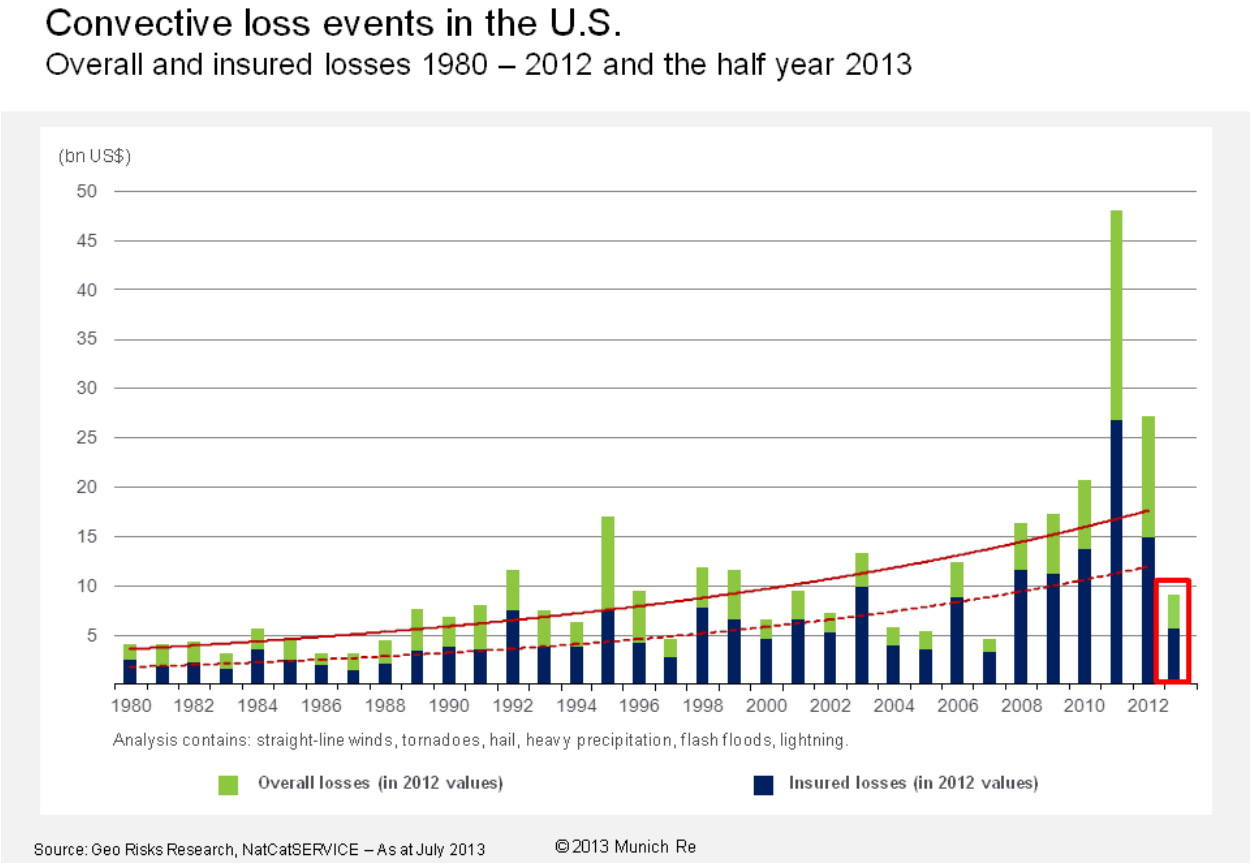


However, other climate/weather related perils also cause major damage.

US Thunderstorm Loss Trends
Annual Totals 1980 – 2013 YTD



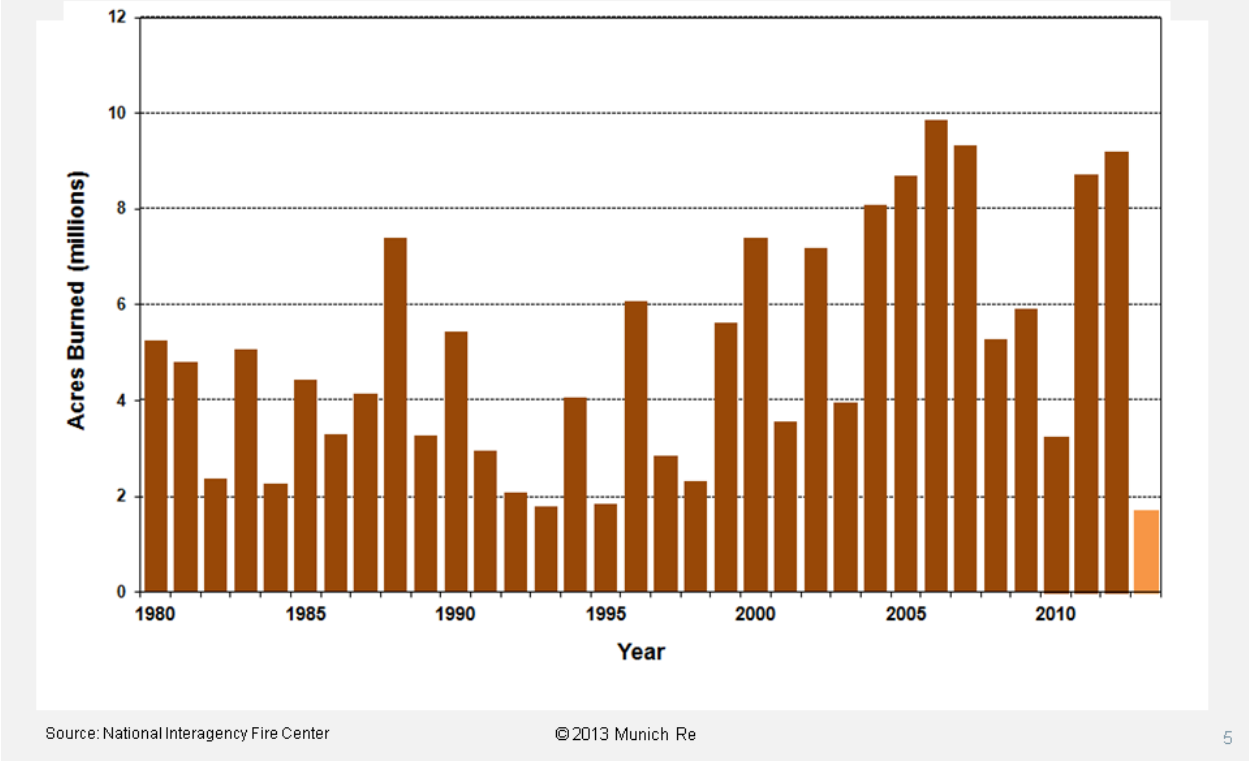
Tornado losses in the U.S. exceeded $1 billion only once prior to 1998. Since then, there have been 29 such events.




Severe wind is not the only peril reflecting this pattern. Goldman Sachs Global Economics reports the 2012 U.S. drought alone cut crop yields, reducing 3rd quarter 2012 GDP by .4%—the equivalent of another Supertsorm Sandy. Droughts are now the third most costly category of natural catastrophe loss with crop losses dominant.

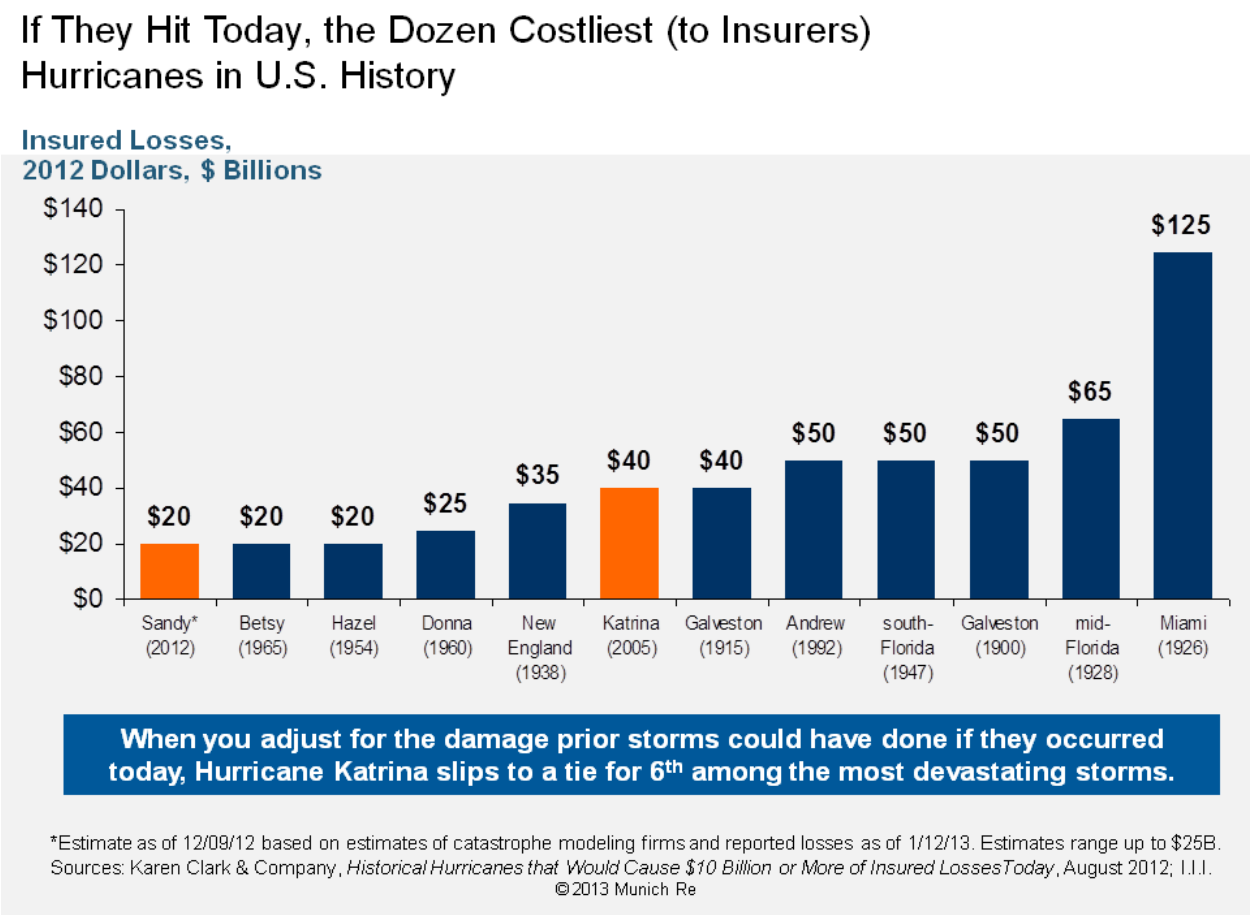
Recent wildfire major events have destroyed homes and threatened communities.

Number of Acres Burned in Wildfires,
1980 – 2013 YTD



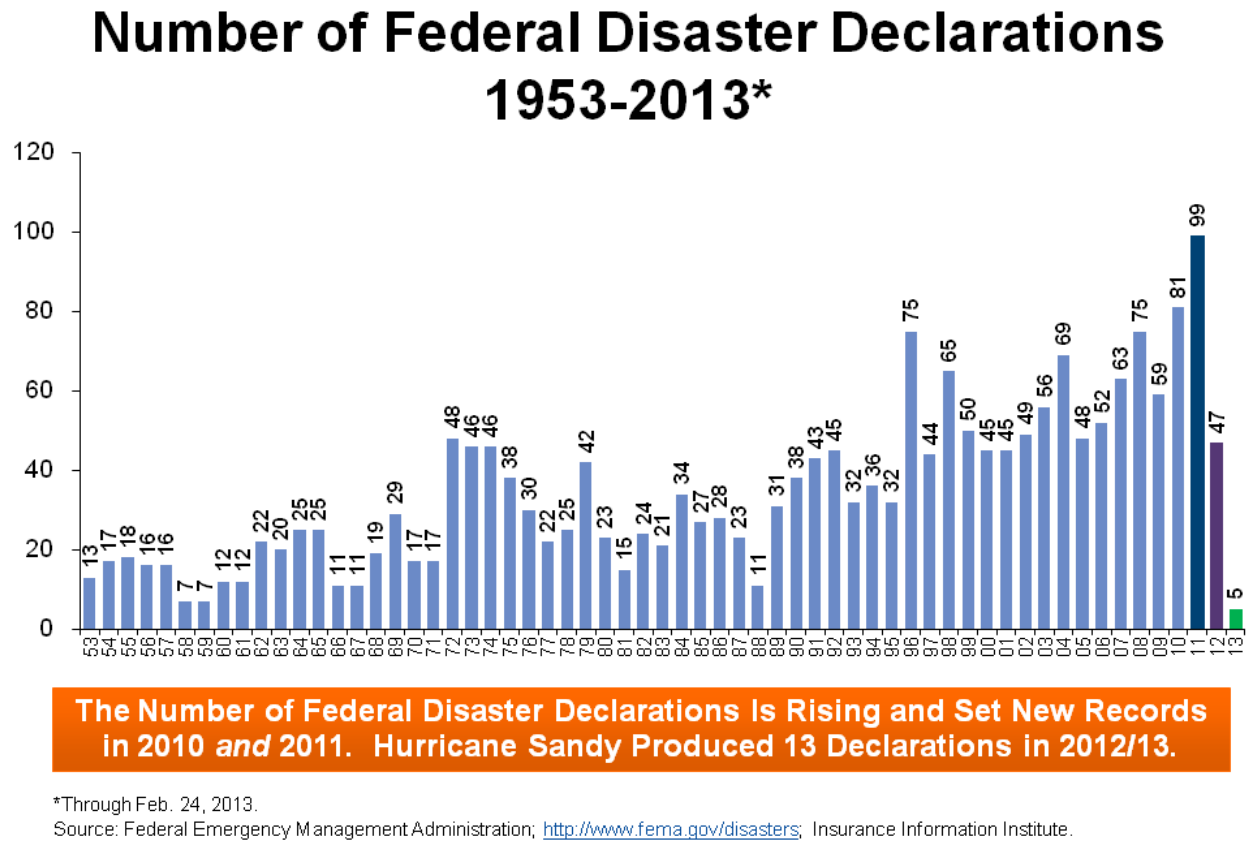

**Future Assessment**

But what if the past is not prologue and, in a changing climate, weather, economic and social trends exacerbate the impact. The Insurance Information Institute projected future losses from past events that reflect rising exposures in areas proven to be at high risk to major climate/weather events.




In a study on Climate Change Impacts conducted for FEMA by AECOM, the firm concluded that the typical 100 year floodplain nationally would grow by 45% and by 55% in coastal areas (with significant regional variations and assuming a fixed shoreline). Notably the report attributed 70 percent of the projected growth in 100 year floodplains to climate change and 30 percent to expected population growth (the analysis assumes 4 feet of sea level rise by the year 2100). The study recommends immediate attention to the implications for the Federal government's National Flood Insurance Program, which is already $26 billion in debt.

Disaster assistance is already a major expense to the Federal government and has set records in recent years.




Dr. David Cummins of Temple University's School of Risk Management estimates the subsidization of disaster-prone areas embedded in Federal disaster assistance practices has encouraged development and increased Federal exposure. He estimates the expected average annual bill for Federal disaster assistance related to natural catastrophes at $20 billion. Current funding for FEMA's Disaster Relief Fund is $1 billion. Dr. Cummins estimates this unfunded liability over the next 75

years at $1.2 to $5.7 trillion, at the high end, essentially the unfunded obligations for Social Security.

**Adaptation and Mitigation Strategies**

Swiss Re has been a leader in addressing climate change for many years.

"Today, global warming is a fact. Since the beginning of industrialization and the rapid growth of world population, man's activities – along with natural variability – have contributed to a change of climate manifesting itself as a considerable increase in global temperature. Climate change has the potential to develop into our planet's greatest environmental challenge of the 21st century.

As an enabler of change, the financial services industry can help guide society towards an effective response. However, the industry can only be effective in this role if the regulatory and legislative framework establishes the right incentives for emissions reduction and adaptation on a global scale."

Munich Re shares this view:

"Anthropogenic climate change is believed to contribute to this trend (a jump in catastrophe losses) though it influences various perils in different ways.

In order to realize a sustainable model of insurance, it is crucially important for us as risk managers to learn about this risk of change and find improved solutions for adaptation and mitigation." (Peter Roeder)

"Globally, climate change alone will increase worldwide losses by 100% by the end of the 21st century. The overall increase in losses in the United States due to climate change alone will be more than 70% by the end of the century according to a wind-based model."

The Geneva Association (International Association for the Study of Insurance Economics) states the need for action as follows:

"The economic and social impacts of climate change could be immense; there is therefore a need for urgent and concerted *mitigation* action to reduce GHG emissions, supported by strong incentives from policy-makers. But regardless of the action taken to mitigate climate change, we can expect many decades of changing climate risks due to inertia within the climate system. We therefore also need concerted *adaptation* to avoid the predicted impacts of climate change and especially to protect the most vulnerable populations."

## Congressional Action

As Congress considers the impact of climate change, the RAA suggests the following legislative principles or actions to consider:

- Provide tax credits to individuals for specified mitigation and resiliency actions associated with extreme weather and climate change.
- Incent communities to develop and implement mitigation and resiliency initiatives.
- Reform the National Flood Insurance Program to reflect extreme weather and climate risk in its rates.
- Apply Federal standards to state/local building codes and incorporate climate and extreme weather risk into these standards.
- Purchase or relocate properties near coastal or river areas at repeat risk.
- Use nature to mitigate risk before and after extreme events.
- Transfer development rights from coastal and river properties to areas inland (Strengthen the Coastal Barrier Resources Act)
- Fund adequate remote sensing for NOAA and NASA.
- Require the Army Corps of Engineers to assess climate risk for all projects.
- The Federal government should lead by example: GSA should assess its buildings and critical facilities in light of climate and extreme weather information.

- Fund climate and weather research through the National Science Foundation, NOAA and other Federal agencies at priority levels.
- Use disaster assistance as an incentive for local communities for climate and extreme weather sensitive, forward looking recovery.

**Conclusion**

The Reinsurance Association and its member companies welcome the attention of Congress to the critical issues of extreme weather and climate. We are committed to work with you to address the exposure of citizens and their property to extreme weather risk and to seek ways to improve the resilience of our communities.

Resources


- Core Logic: Storm Surge Report: Residential Storm Surge Exposure Estimate for the US Coastal Areas (2012 )
- Federal Financial Exposure to Natural Catastrophe Risk, David Cummins, Michael Suher and George Zanjani (2010)
- Goldman Sachs, Global Economics, Commodities and Strategy Research
- ClimateWise, Summary of the IPCC Special Report on Managing the Risks of Extreme Events and Disasters
- Applied Insurance Research Coastline at Risk: Update to the Estimated Insured Value of US Coastal Property (2013)
- NOAA State of the Coast National Coastal Population Report (March 2013)
- Geneva Association (International Association for the Study of Insurance Economics): The Insurance Industry and Climate Change (July 2009)
- Munich Reinsurance, Climate Variability and Climate Change
- AECOM: The Impact of Climate Change and Population Growth on the national Flood Insurance Program through 2100 (June 2013)