



REINSURANCE ASSOCIATION OF AMERICA

1445 New York Avenue, N.W., 7<sup>th</sup> Floor, Washington, D.C. 20005

Telephone: (202) 638-3690

Facsimile: (202) 638-0936

<http://www.reinsurance.org>

December 9, 2013

The Honorable Suzanne Bonamici  
Ranking Member  
Subcommittee on Environment  
Committee on Science, Space, and Technology  
U.S. House of Representatives  
Washington, DC 20515

Dear Congresswoman Bonamici:

I am writing to you on behalf of the Reinsurance Association of America, a national trade association representing reinsurance companies doing business in the United States, to address the RAA's perspective on weather and climate-related weather impacts in the United States in advance of the Environment Subcommittee's hearing on December 11, 2013.

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.

Insurers see climate primarily through the prism of extreme natural events. Research by Munich Reinsurance Company (Munich Re) reflects a rising number of natural catastrophes globally and in the U.S.<sup>1</sup> 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.<sup>2</sup> 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.<sup>3,4,5</sup> 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

<sup>1</sup> MR NatCat SERVICE, Natural Catastrophes Worldwide 1980-2013

<sup>2</sup> Munich Re Natural Catastrophes in the USA, 1980-2012

<sup>3</sup> NOAA U.S. Population Living in Coastal Watershed Counties

<sup>4</sup> Total Value of Insured Coastal Exposure in 2012

<sup>5</sup> Total Potential Home Value Exposure to Storm Surge Risk in 2013

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.

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.

However, other climate/weather related perils also cause major damage. 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 3<sup>rd</sup> quarter 2012 GDP by .4%—the equivalent of another Superstorm 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.<sup>6</sup>

But what if the past is not prologue and, in a changing climate, weather, economic and social trends exacerbate the impact? 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.<sup>7</sup> 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.

As an enabler of change, the financial services industry can help guide society towards an effective response. 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)

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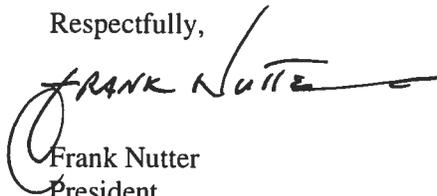
<sup>6</sup> National Interagency Fire Center Number of Acres Burned in Wildfires

<sup>7</sup> Number of Federal Disaster Declarations 1953-2013

- 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.

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.

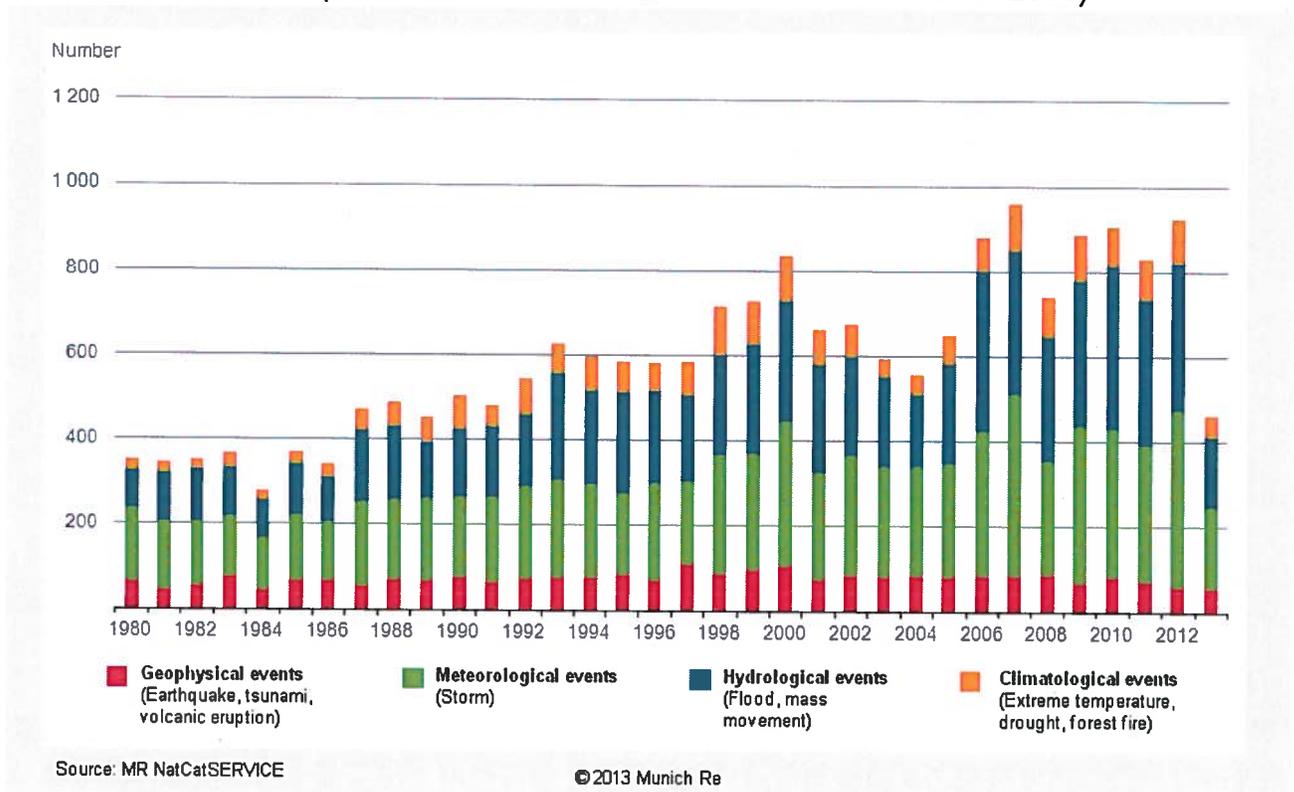
Respectfully,

A handwritten signature in black ink that reads "FRANK NUTTER". The signature is written in a cursive style with a large, stylized initial "F" and "N".

Frank Nutter  
President  
Reinsurance Association of America  
1445 New York Avenue, N.W., 7<sup>th</sup> Floor  
Washington, D.C. 20005

## Natural Catastrophes Worldwide 1980 – 2013

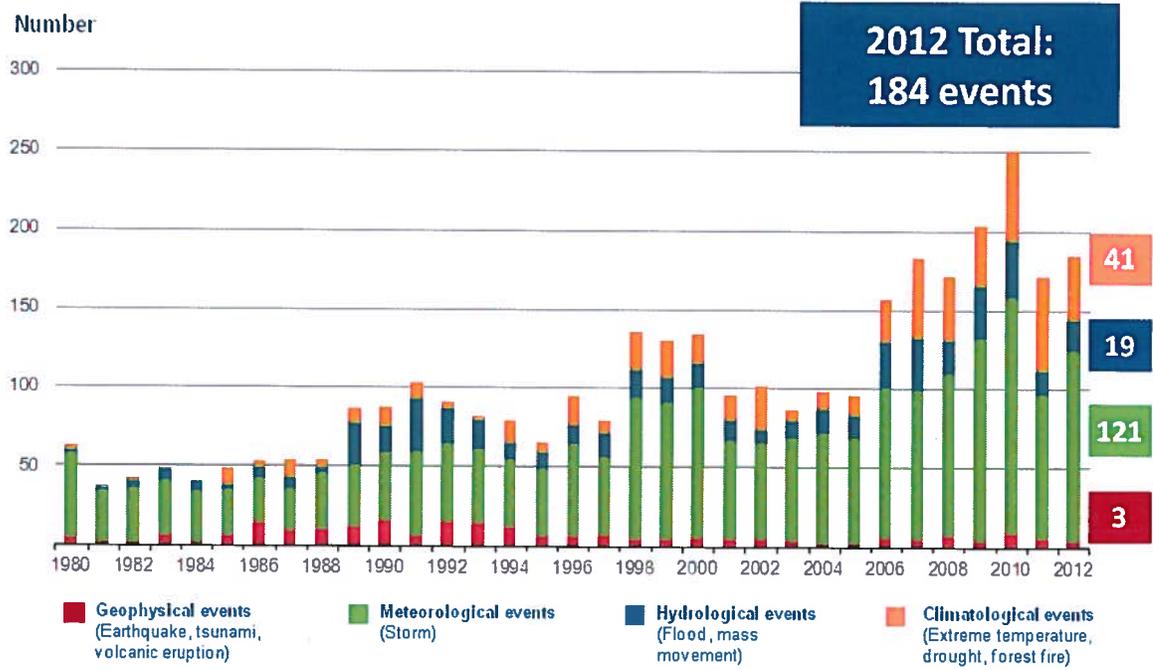
Number of Events (Annual Totals 1980 – 2012 vs. First Six Months 2013)



## Natural Catastrophes in the USA

1980 – 2012

Number of events



Source: Munich Re

## U.S. Population Living in Coastal Watershed Counties

**52%**

Percent of the nation's total population that lived in coastal watershed counties in 2010 (less than 20% of the total land area excluding Alaska).

Source: U.S. Census Bureau, 2011

**50.9 million**

Increase in U.S. coastal watershed county population from 1970 to 2010 (or a 45% increase).

Source: U.S. Census Bureau, 2011

**319**

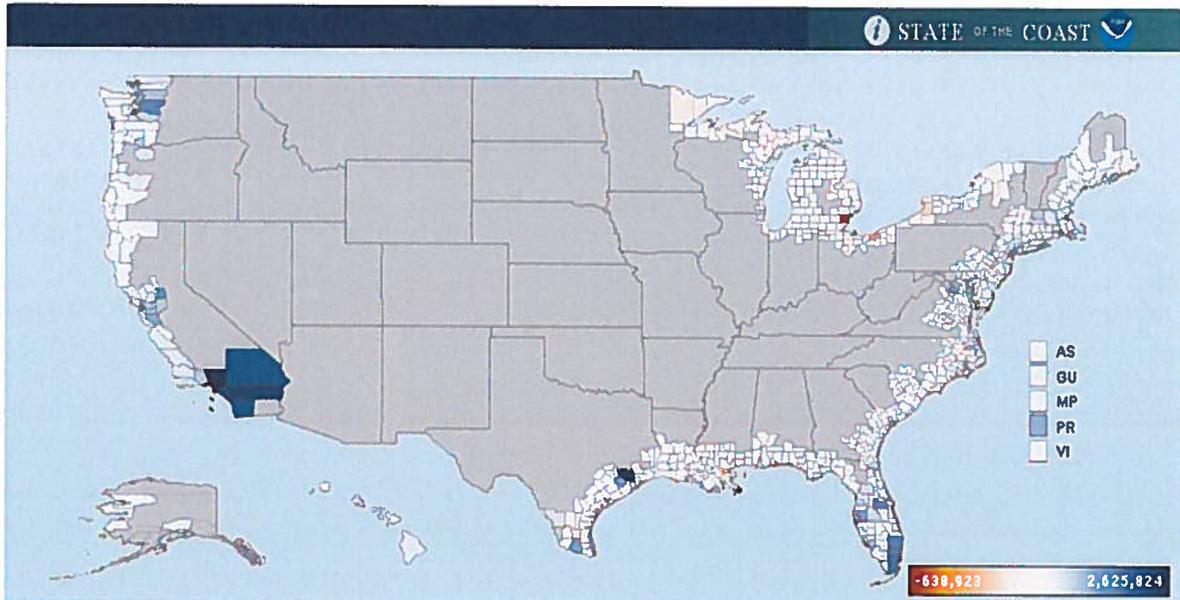
Average population density of the coastal watershed counties (excluding Alaska). Inland density averages 61 persons per square mile.

Source: U.S. Census Bureau, 2011

**14.9 million**

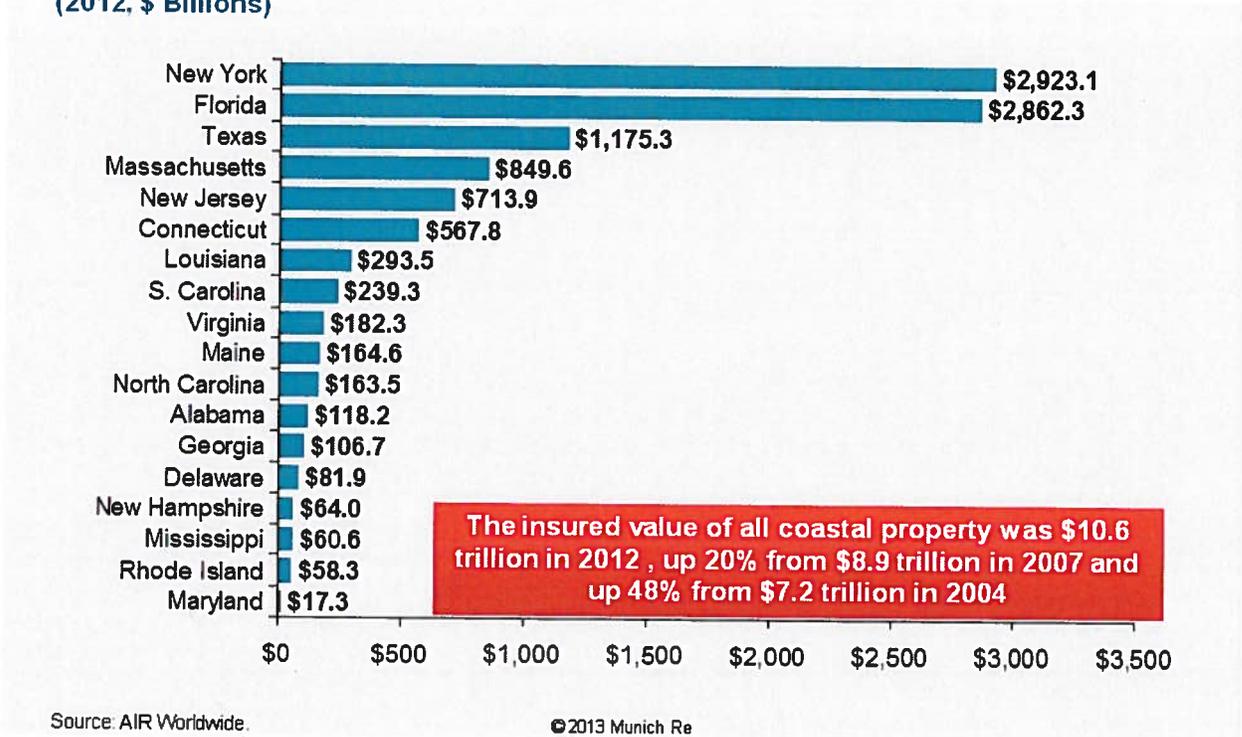
Expected increase in U.S. coastal watershed county population by 2020 (or a 9% increase, excluding Alaska).

Source: Woods & Poole, 2011; NOAA, 2011; U.S. Census Bureau, 2011



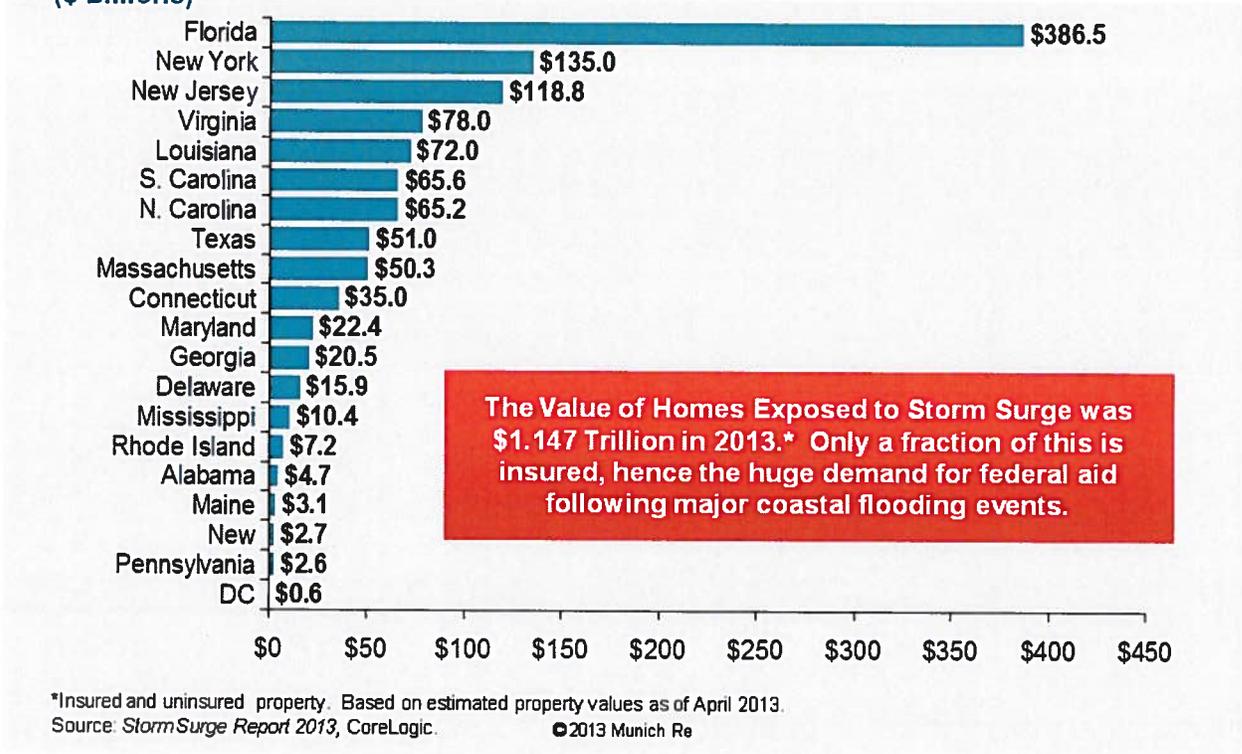
## Total Value of Insured Coastal Exposure in 2012

(2012, \$ Billions)

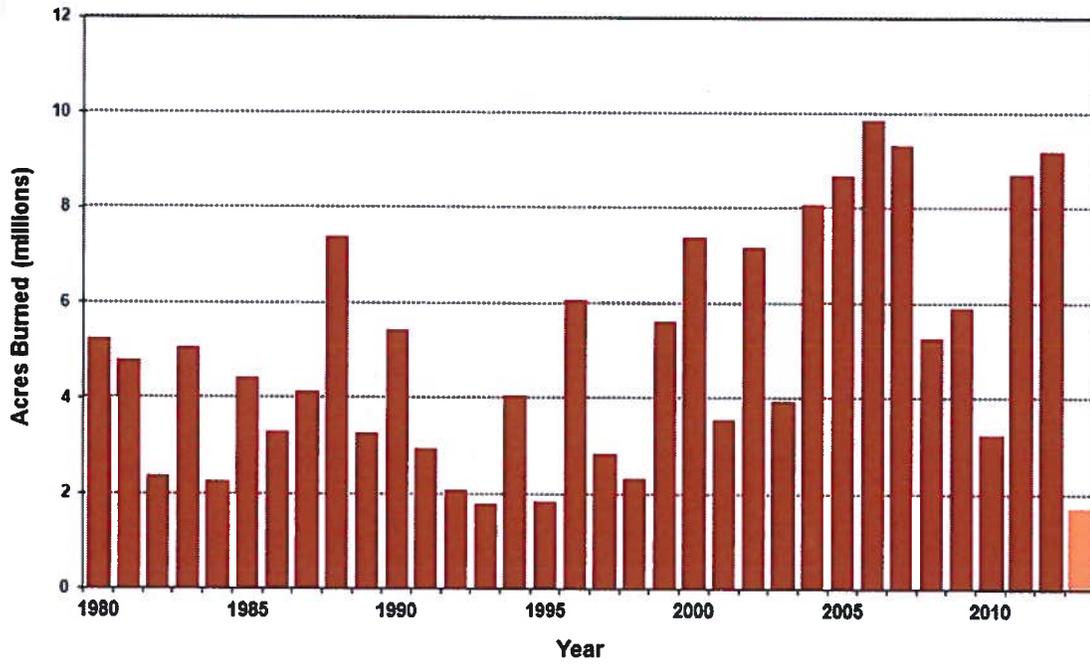


### Total Potential Home Value Exposure to Storm Surge Risk in 2013\*

(\$ Billions)



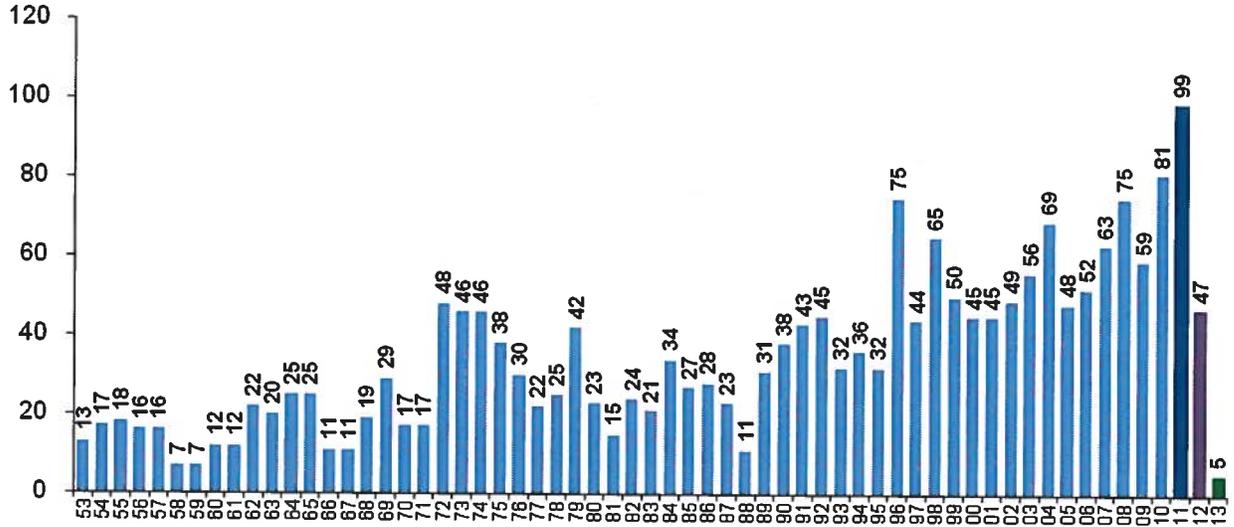
### Number of Acres Burned in Wildfires, 1980 – 2013 YTD



Source: National Interagency Fire Center

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## Number of Federal Disaster Declarations 1953-2013\*



**The Number of Federal Disaster Declarations Is Rising and Set New Records in 2010 and 2011. Hurricane Sandy Produced 13 Declarations in 2012/13.**

\*Through Feb. 24, 2013.

Source: Federal Emergency Management Administration, <http://www.fema.gov/disasters>; Insurance Information Institute.

## 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)