

**TESTIMONY**

**OF**

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**WEATHERING THE STORM: THE NEED FOR  
A NATIONAL HURRICANE RESEARCH  
INITIATIVE**

**BEFORE**

**UNITED STATES SENATE COMMITTEE ON  
COMMERCE, SCIENCE AND  
TRANSPORTATION**

**JULY 28, 2009**

My name is Frank Nutter and I am President of the Reinsurance Association of America (RAA). The RAA is a national trade association of property and casualty reinsurers doing business in the U.S. Its membership is diverse, and includes reinsurance underwriters and intermediaries licensed in the U.S. and those that conduct business on a cross-border basis. It is a pleasure to appear before you today on “The Need for a National Hurricane Research Initiative.” The RAA supports efforts to enhance the science of hurricanes. We also strongly endorse increased federal funding for hurricane research and forecasting. These research initiatives are critical to efforts to minimize the economic and human loss associated with hurricanes. Today, my testimony will address the economic impacts of hurricane activity and the reinsurance perspective on managing risk by promoting the conservation of our natural resources and through risk mitigation efforts along our densely-populated coastlines.

I want to thank Senators Martinez and Nelson for their sponsorship of S. 1485, the National Hurricane Research Initiative Act of 2009, a bill that would enhance the country’s hurricane research agenda in a manner that would strengthen our ability to protect citizens and property, and lessen the financial burden to society of the aftermath of the most intense storms. The bill’s research priorities target key elements such as forecast model development and improved observations, both of which would contribute to better prediction of hurricane intensity and structure; storm surge and aftermath flooding; and the relationship between hurricanes, climate change, and ecosystems. But considering the enormous costs associated with major storms that I will discuss in my testimony, we would support a greater level of funding for the National

Hurricane Initiative, such as that recommended in H.R. 327, which authorizes \$150,000,000 to be appropriated for each of fiscal years 2009-2013.

### **U.S. Reinsurance Industry's Support for Hurricane Research**

(Re)insurers have a keen interest in improved hurricane forecasting and risk management as a means to reduce economic loss. The insurance industry's financial health is inter-dependent with climate and weather. The risk of natural events drives the demand for property insurance coverage, yet if not properly managed, it can threaten the financial health of an insurer. An insurance company's financial viability rests on its ability to estimate the economic consequences of future events. Because of this, the insurance and reinsurance industries have long supported private and public sector research efforts to better understand the frequency, severity, financial impact and mitigation of natural catastrophes, particularly hurricanes. Of special note are Munich Re and Swiss Re, which have devoted significant resources to study hurricane activity and made the results of these studies publicly available as a means to enhance appropriate risk management strategies. In addition to the success of the Federal Alliance for Safe Homes (FLASH), represented in this hearing by Leslie Chapman-Henderson, two private insurance sector research initiatives are noteworthy. The Willis Research Network, which is funded by the Willis Group—an insurance and reinsurance intermediary—is the largest collaboration between academia and the reinsurance industry to further the understanding of natural hazards and translating that understanding into effective risk management tools. The Willis Research Network has supported open academic research posts at the National Center for Atmospheric Research, Princeton University, and the University of Colorado with particular emphasis on high resolution modeling and forecasting. The Willis Research Network has

established a liaison group between academics in the United Kingdom and the United States and global insurers.

The Institute for Business & Home Safety (IBHS) is another example of private sector research focused on reducing the social and economic loss from natural disasters. Partnering with manufacturers, insurers, and research groups, the IBHS has long advocated for stricter building codes for residential and commercial construction—especially along our coastlines—as well as better land use planning and improved building design and materials as risk mitigation strategies. Just last week, the IBHS announced that construction will shortly begin on its multi-peril, applied property loss research center. The center’s research will focus on catastrophe-related exposures, including the natural hazards of wind, fire, wind-driven water intrusion, earthquake and hail.

Ultimately, collaborative public and private sector research efforts such as these will assist public policy makers, public officials and private sector interests in better understanding the dynamics of hurricanes and appropriate mitigation and adaptation strategies.

### **The Economics of Hurricanes**

A report by the Risk Management and Decision Processes Center of the Wharton School—“Managing Large-Scale Risk in a New Era of Catastrophes”—observes that two principal socio-economic factors directly influence economic losses due to a catastrophic event: the increasing degree of urbanization and value at risk. The U.S. Census Bureau data bears this out: 35.7 million Americans live in coastal counties most threatened by hurricanes; essentially the coastal

populations from North Carolina to Texas—approximately 12 percent of the U.S. population. As a result, from 1980 through 2005, 29% of the nation’s population lived in a county that experienced at least one hurricane. This combination of urbanization and increasing property values translates into increased concentration of exposure in areas at high risk for hurricanes and extreme storms. Gulf and Atlantic Coast insured property exposure totals \$9 trillion. Of this insured coastal exposure, \$2.4 trillion is in Florida; \$2.4 trillion in New York; \$900 billion in Texas; \$775 billion in Massachusetts; \$635 billion in New Jersey; \$480 billion in Connecticut; and \$224 billion in Louisiana.

Catastrophe modeling firm AIR Worldwide estimates that catastrophe losses will double every decade due to this growing residential and commercial density. Since the first \$1 billion-plus hurricane insured loss in 1989 (Hurricane Hugo), Munich Re reports that economic losses (insured and uninsured) of greater than \$1 billion have risen dramatically: \$60 billion in 2004; \$170 billion in 2005; \$58 billion in 2008. This reflects a rise in the number of global meteorological (storm), hydrological (flood) and climatological events, while geophysical events (earthquakes and volcanic eruptions) have remained steady. Worldwide in 2008, there were nearly 700 such extreme atmospheric events; over 900 in both 2007 and 2006.

According to the Insurance Information Institute, the U.S. insurance industry has reported \$170 billion of insured hurricane related losses since 1988. Although that number is significant, estimated losses (in 2009 dollars) for past hurricanes based on current exposures<sup>1</sup> are more notable:

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<sup>1</sup> iCAT Damage Estimator

	<u>Today's Economic Loss</u>	<u>Today's Insured Loss</u>
▪ 1900 Galveston, Texas	\$94 billion	\$33 billion
▪ 1926 Miami Hurricane:	\$180 billion	\$80 billion
▪ 1938 Long Island, NY	\$45 billion	\$35 billion
▪ 1960 Hurricane Donna (FL-ME)	\$44 billion	\$26 billion
▪ 2005 Katrina, Gulf Coast:	\$91 billion	\$41 billion

### **Natural Hazard Mitigation**

In addition to appropriating increased funding for hurricane research and improved forecasting, Congress should help people living in hurricane-prone coastal areas take proactive mitigation and adaptation steps to protect their property, rather than encourage unwise development in these high-risk, environmentally-sensitive locales. The research arising from new Congressional funding will assist in the assessment of planning aimed at mitigation and adaptation.

The RAA has partnered with environmental groups in support of the following principles:

- **Build Smart:** Based on the continuing scientific assessment of the effects and consequences of a changing climate, property and infrastructure in coastal areas and other high-hazard areas should be built, replaced or repaired according to the most modern building standards and codes reflecting exposure to natural disasters and effective loss-reduction measures.
- **Encourage Safety:** Government incentives should promote risk-avoidance and proactive mitigation measures to protect the public from a broad range of natural disasters, including wind, flood, wildfires and earthquakes.

- **Use Nature:** To protect both the public and ecosystems that provide natural "buffers" to storms, renewed efforts should be made to preserve coastal areas consistent with effective state and federal laws, using uniform, objective standards.
- **Insure Based on Risk:** Private and public property insurance programs should be established on the basis of risk exposure, including catastrophic risk.

Consistent with these principles, the RAA supports legislation to encourage homeowners, businesses and other property owners to reinforce their homes, buildings, and properties to mitigate damage from natural disasters. For instance, we support legislation introduced by House Committee on Homeland Security Chairman Bennie Thompson. The Property Mitigation Assistance Act of 2009 (H.R. 1239) would provide grants to states to set up loans to homeowners for mitigation; the Predisaster Hazard Mitigation Enhancement Act of 2009 (H.R. 3027) would provide mitigation grants to states to promote pre-disaster mitigation measures; and the Hazard Mitigation for All Act of 2009 (H.R. 3026) would fund mitigation efforts for publicly-assisted housing. Research has demonstrated that pre-disaster mitigation efforts are very effective in saving costs and even human lives. The National Institute of Building Sciences' Multihazard Mitigation Council estimated that FEMA grants made between 1993 and 2003 to mitigate the effects of natural disasters will save more than 220 lives and prevent almost 4,700 injuries over 50 years.

### **Additional Considerations**

The RAA is also part of the Building Code Coalition whose goal is to enact legislation to amend the Stafford Act to enhance existing mitigation programs by encouraging states to adopt nationally-recognized model building codes for residential and commercial structures. With billions of dollars paid by the federal government and the private sector for disaster relief and

rebuilding of communities, legislation that would enhance FEMA's ability to "prepare for, prevent, respond to and recover from disasters" is critically important.

We also support an increase in funding for FEMA's Pre-Disaster Mitigation (PDM) program. This program provides funds to states for community-based hazard mitigation activities identified in a State Mitigation Plan such as increasing building elevations, flood-proofing, improving the survivability of existing and new buildings, and relocating willing sellers from natural disaster prone areas. In 2007, the Congressional Budget Office found that projects funded through the Pre-Disaster Mitigation program between 2004 and June 2007 resulted in a reduction of future disaster spending of approximately three dollars for every dollar spent on these projects. We also believe that infrastructure projects funded through federal appropriations consider, and incorporate measures to reduce, the risks of the potential impacts of natural disasters, such as windstorms and floods, particularly in light of the anticipated effects of global climate change.

Hazard mitigation programs are well-established as a cost-effective means to reduce the impact of natural disasters. In 2005, a Congressionally-mandated study by the Multihazard Mitigation Council (an advisory body of the National Institute of Building Sciences) concluded that cost-effective mitigation saves an average of four dollars for every dollar spent.

Land-use planning, largely the purview of local governments, is also key to reducing development in environmentally-sensitive, high-risk coastal areas. We support the Coastal Barrier Resources System which prevents structures proposed for construction in undeveloped, environmentally-pristine areas from purchasing federal flood insurance. The Coastal Zone

Management Act could provide a tool – essentially a climate adaptation tool – to ensure states are planning for the potential risks posed by the impacts of climate change. If blended with the State Hazard Mitigation Plans already required by the Stafford Act and approved by FEMA, the combination provides states with the planning tools they need to develop and implement a climate adaptation plan.

## **Climate Change**

With 30% of the U.S. population living in coastal counties most exposed to hurricanes, extreme storms, and related storm surge, global climate change will increase U.S. citizens' exposure to property losses and potential loss of life, and disrupt and degrade ecosystems and natural features such as barrier islands, mangroves, and wetlands that act as natural buffers to wind and flooding. Enhanced funding for hurricane research will help us to better understand the relationship between hurricanes, climate change and ecosystems. Such research should require regional climate models operating at much higher resolution over climatic time scales than previously attempted. The development of regional climate models capable of resolving hurricanes and producing statistics on future climate will provide a database that can substantially extend and render more accurate risk assessment methods. As the Senate considers climate legislation, we encourage the adoption of appropriate provisions that require federal and state governments to develop and implement adaptation programs that will enable us to better prepare for the impacts of climate change on our communities and natural environment. It is important that the activities and projects identified in these adaptation programs are implemented in a way that is consistent with federal conservation and environmental law. This can be achieved through the use of vulnerability assessments, as well as through a variety of cost-effective programs and measures I

mentioned earlier that would make our communities safer and our natural resources more resilient to the effects of climate change.

## **Conclusion**

I commend the Committee for conducting this hearing to better understand the many effects hurricanes have of on our nation's communities, and its support for increased federal research on the science of hurricanes and hurricane forecasting. The RAA is committed to working with Congress for legislative measures to improve mitigation, adaptation, and increase hurricane research funding. All legislative efforts should ensure environmentally-sound and fiscally responsible policy that will ultimately reduce the costs borne by federal and state governments, insurers/reinsurers, and the American taxpayers, as well as save lives, protect habitats, and ensure our coastal areas thrive for future generations.

Thank you.