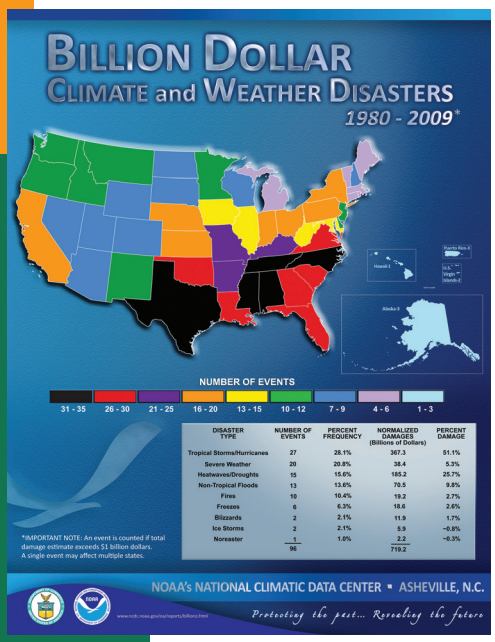
NOAA's National Climatic Data Center Sectoral Engagement Fact Sheet
INSURANCE/REINSURANCE

OVERVIEW

Global climate change and the expected increasing frequency of extreme weather events pose an enormous challenge to the insurance/reinsurance industry, the world's largest economic sector. Weather-related disasters can cause billions of dollars in damage. Since 1980, the United States has sustained more than 90 disasters in which damage reached or exceeded $1 billion, with total losses exceeding $700 billion. Research indicates that the insurance industry experiences an event such as a hurricane, drought, or severe flooding that costs at least $20 billion every 10 to 12 years on average. These extreme events can cause injury, death, destruction to property, agricultural losses, and interruption to industrial and commercial business operations. The continued increase in the value of insurance portfolios, particularly in vulnerable coastal areas, heightens the need for additional weather and climate data for improved decision making. Having access to relevant and easily understandable climate information is essential to effectively assess trends and plan for the future.



KEY STAKEHOLDERS

NOAA's National Climatic Data Center (NCDC) works with various groups, both as an information provider and as an applied research partner, to examine the effects of weather and climate on insurance. This helps decision makers within the insurance sector make practical assessments of extreme weather events and climate change. There are many different governmental and non-governmental organizations, public and private groups and businesses, and individuals that can benefit from using pertinent climate and weather-related information. Some major groups include:

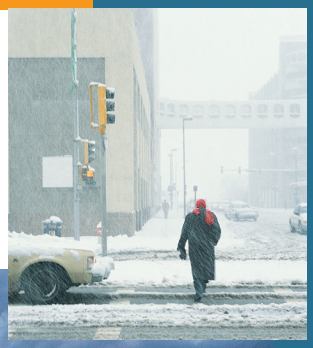
- Insurance and reinsurance companies
- Federal and state insurance regulators
- Catastrophe risk modelers
- Commercial banks
- Lawyers and litigators
- Professional societies and trade groups
- Federal, state, and local emergency management officials

SECTOR NEEDS

Climate information is often available only as raw observations or in the form of tables, graphs, or written summaries, which may be difficult for users who are not well-versed in climate science to fully interpret. To bridge this gap, NCDC is partnering with the insurance sector to translate climate data into accessible, useful, and accurate products; and to leverage NCDC's climate expertise to better understand what the information means and how it can be used most effectively.

Climate information can be used in a variety of ways. Some examples include:

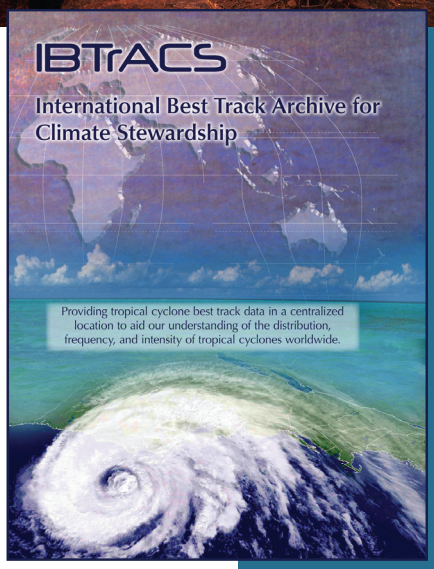
- Using hurricane, tornado, hail, snowfall, and other extreme event data to perform risk analyses.
- Using monthly climate summaries to validate industry catastrophe (CAT) models, which simulate the geographical risk associated with natural or manmade catastrophes.
- Using measurements such as surface roughness, overland decay, and wind speed and direction to improve hurricane risk models in order to better predict insurance losses.
- Using validated weather and climate data to justify insurance claims and payouts.



NCDC DATA and PRODUCTS

There are many different types of useful climate information available. Some examples include:

- Surface observations made at thousands of locations across the globe, for hourly, daily, and monthly averages.
- Global tropical cyclone positions and intensities in the *International Best Track Archive for Climate Stewardship* (IBTrACS) tropical cyclone database.
- The *Severe Weather Data Inventory* (SWDI), which includes information critical to the detection and evaluation of severe weather derived from radar, such as features related to general storm structure, hail, and tornadoes, preliminary and verified reports of storm damage, and National Weather Service Warning areas.
- The *U.S.* and *North American Drought Monitor*, which are synthesis products of multiple indices and impacts that represent a consensus of federal and academic scientists.
- Publications, including *Local Climatological Data* (provides a monthly summary of daily observations), *Comparative Climatic Data* (provides average and extreme values), and *Storm Data* (provides monthly reports of damaging weather).



Collaboration between climate scientists and the insurance community is essential in helping to build the necessary bridges that will transform climate data into information that is relevant and credible. Ongoing communication is important to ensure that the information NCDC provides is appropriate and applicable to insurance sector needs. As climate changes in the years ahead and the effects become more noticeable, new information needs will emerge. NCDC will work closely with this sector, attending trade meetings and sponsoring future workshops and conferences, in order to better understand, address, and anticipate these needs.

Additional details about available NOAA products and the economic benefits of these products are provided at:
http://www.economics.noaa.gov

For further information on obtaining NCDC climate services and products related to insurance please contact:

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NOAA Satellite and Information Service
National Environmental Satellite, Data, and Information Service (NESDIS)
National Climatic Data Center (NCDC)
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June 2010