
Climate Change Update

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Agenda

Introduction and CAS Climate Change Committee Update


- Introduction to Climate Change
- Background on CAS Climate Change Committee
- Climate Index Working Group completion of Phase 1
- Planned work for Phase 2

NAIC Disclosure Update

- Recap of NAIC disclosures survey questions and timeline
- Latest development on the changes in thresholds and requirements by different states

Sustainability/Green Products

- Survey on products currently available for Personal, Commercial and Specialty lines, Future Trends and Benefits



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Introduction and CAS Climate Change Committee Update

Introduction to Climate Change

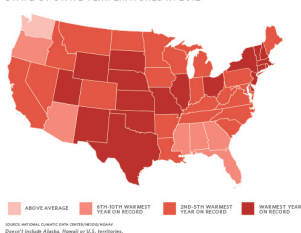
- Scientists studying the Earth's climate system, which encompasses the atmosphere, land surface and oceans, have developed an understanding of how the system operates and varies over time.
- Over the last several decades, changes are occurring, on both regional and global scales, that exceed what is to be expected from natural climate variability alone.
- Some of the main changes include:
 - 16 **warmest** years on record occurred in the 17-year period from 1995-2011.
 - The thickness and areal extent of Northern Hemisphere **snow cover** and Arctic **sea ice** has **decreased** steadily over the last 30 years.
 - Global average **sea level** has been **rising** at a rate of approximately 3 mm (1/8") per year over the past two decades.
 - A significant **increase** in the frequency of **heavy precipitation** events has been observed in the majority of locations where data are available.

Source: "Determining the Impact of Climate Change on Insurance Risk and the Global Community, Phase 1: Key Climate Indicators"
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Climate Change?

RECORD HEAT ACROSS THE U.S.
 STATE-BY-STATE TEMPERATURES IN 2012



ALSO IN 2012:

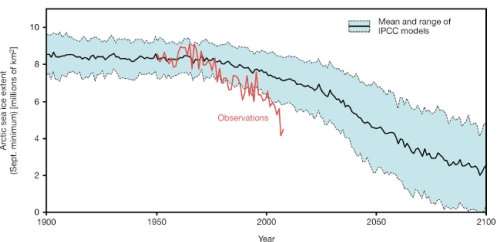
- AVG. TEMP. WARMEST YEAR ON RECORD FOR THE U.S.**
(Does not include Alaska, Hawaii, or U.S. territories)
- 356 RECORD HIGH TEMPERATURES TIED OR BROKEN**
IN THE UNITED STATES
(Does not include Alaska, Hawaii, or U.S. territories)
- APPROXIMATELY ONE-THIRD OF THE U.S. POPULATION EXPERIENCED 100° TEMPERATURES**
FOR TEN OR MORE DAYS
(Does not include Alaska, Hawaii, or U.S. territories)

Source: "Climate Change and President Obama's Action Plan"
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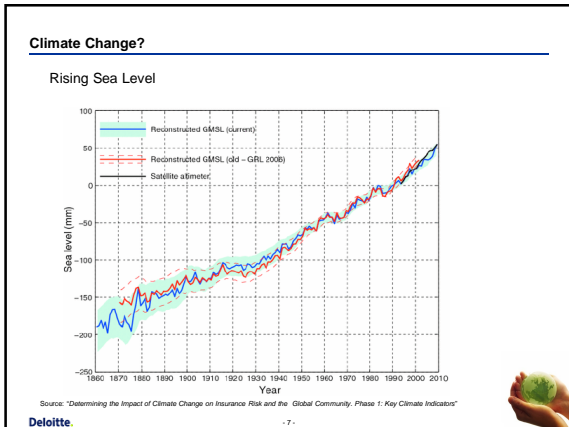
Climate Change?

Observed rate of Arctic sea ice decline more than expected



Source: "Determining the Impact of Climate Change on Insurance Risk and the Global Community, Phase 1: Key Climate Indicators"
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CAS Climate Change Committee

2008	2009	2010	2011	2012	2013	2014
CAS Climate Change Task Force formed	Standing Committee established. Joined force to include AAA, CIA		Climate Index Working Group Phase 1		Climate Index Working Group Phase 2	
			Determining the Impact of Climate Change on Insurance Risk and the Global Community		Developing the Actuaries' Climate Change Index (ACCI)	

- The CAS Climate Change Committee was created to respond to the emerging risk of climate change.
 - To recommend, support, and perform research on climate change and assess the potential risk management implications for the insurance industry.
- It is our actuarial professional responsibility to understand the latest in climate change science and develop actuarially sound approaches to managing the potential implications of climate change risk factors.

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- ### CAS Climate Change Committee
- Initial areas of focus
 - Identify future climate scenarios and explore implications for our profession
 - Insurance products/services, reserving practices, contingency planning, and corporate strategy
 - Have a significant role in climate change modeling
 - Model development, assumptions, uncertainty, sensitivity, robustness, appropriate application, and interpretation of results
 - Understand reporting and disclosure requirements
 - Address public relations and policy issues that arise from climate change
 - Recommend position of CAS and how to work with other actuarial organizations around the world
 - Educate our membership
 - Facilitate background training for our membership to understand issues and implications
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Climate Index Working Group

- The Actuaries' Climate Change Index is being developed by **Climate Index Working Group** to help raise awareness of the potential risks associated with climate change and the risk management implications within North America and globally.
- **Phase 1** completed: a synthesis of the extensive and rapidly growing body of knowledge on climate change as it relates to possible impacts on human society.
"Determining the Impact of Climate Change on Insurance Risk and the Global Community. Phase 1: Key Climate Indicators" (Nov 2012)
- **Phase 2** in progress:
 - Aim to develop the Actuaries' Climate Change Index (ACCI)
 - Call for Essays on the Impact of Climate Change on the Insurance Industry has just ended, essays to be published in Fall 2013.
 - Another call paper program in 2014 on the uses of the Climate Change Index.

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Phase 1 Report

- The report provides a review of recently published scientific research in specific areas:
 - Worldwide temperature and precipitation trends
 - Temperature and precipitation extremes
 - Arctic sea ice, snow cover and permafrost degradation
 - Changes in land-based glaciers
 - Sea-level rise
 - Wildfires
 - Hurricane intensity
 - Droughts
- The review lays the foundation for the development of an Actuaries Climate Change Index (ACCI) whose goals are:
 - To quantitatively and succinctly summarize the vast amount of research that has emerged
 - To assist policymakers, risk professionals, and the public in managing the potential impacts of climate change.
 - To form the basis of a more targeted index that illustrates the specific risks of climate change to the insurance sector.

Source: "Determining the Impact of Climate Change on Insurance Risk and the Global Community. Phase 1: Key Climate Indicators"

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Phase 1 Report Conclusions

- Various indices can be constructed, using either observed data or model projections, which adequately reflect changes in the underlying climate variables.
- A composite index, carrying information from many individual climate variables and standardized with respect to climate variability, can be formulated which would suit the needs of both actuaries and the public at large. This is termed the Actuaries Climate Change Index™ (ACCI™). Such an index could carry information regarding the occurrence of climate extremes, as well as more gradual changes in mean quantities.
- The index could be calculated for individual regions, provided sufficient high-quality data are available.
- Finally, with the addition of socioeconomic data, the ACCI can form the basis of a more targeted index that reflects the risk to populations and capital due to climate change (the Actuaries Climate Risk Index™, or ACRI™).

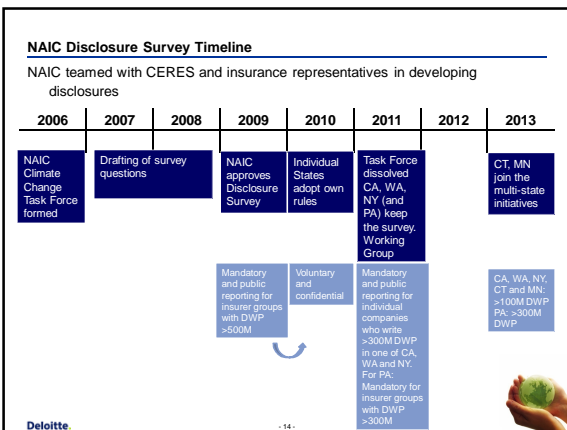
Source: "Determining the Impact of Climate Change on Insurance Risk and the Global Community. Phase 1: Key Climate Indicators"

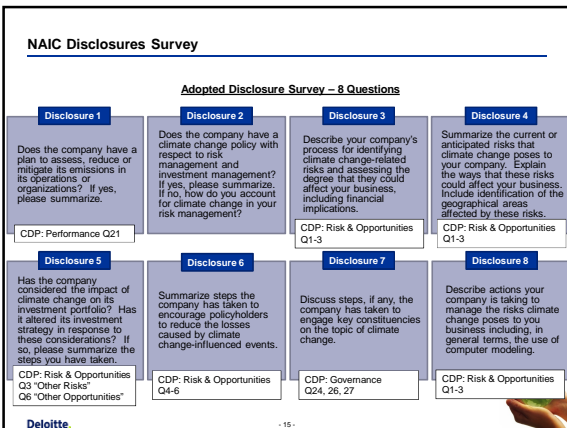
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NAIC Disclosure Update






Sustainability/Green Products

"Just as the industry has historically asserted its leadership to minimize risks from building fires and earthquakes, insurers have a huge opportunity today to develop creative loss-prevention solutions and products that will reduce climate change-related losses for consumers, government, and themselves."



– E. Mills, Ph.D.,
CERES "From Risk to Opportunity Insurer Responses to Climate Change"



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Sustainability/Green Products

- Sustainable products are those products that provide environmental, social and economic benefits while protecting public health and the environment over their whole life cycle, from the extraction of raw materials used to produce the product until their final disposal
- Sustainable and green insurance products are those that cover the design, production and use of sustainable products, or the liability associated with their production and use.
- They also indemnify against the environmental consequence of potential climate change decisions (or indecisions) made by executives in Directors & Officers coverage.
- Also broadly covered in this definition of sustainable/green products would be policies where certain features promote sustainable or green behavior.





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Sustainability/Green Products

Sustainability/ Green Products

- Personal (Household, Auto)**
 - 1. Green Property Rebuilding
 - 2. Property Renewable Energy Reimbursement
 - 3. Property Loss Mitigation Device Discount
 - 4. Pay As You Drive/ Low Mileage Discount
 - 5. Fuel Efficient/Low Emission Vehicle Discount
- Commercial (Property, Fleet, Operations, Publicity)**
 - 1. Upgrade to Green Commercial Fleets
 - 2. Insurance for Renewable Energy Projects
 - 3. Insurance for Renewable Energy Property, Equipment and Loss of Use
 - 4. Insurance for Green Building
 - 5. Energy Savings Insurance
 - 6. Insurance for Carbon Capture & Storage/ Emission Reduction Projects
 - 7. Green Building Coverage Against Adverse Publicity
 - 8. Perishable Food Reduction Products
 - 9. Global Weather Insurance
 - 10. Political Risk Insurance for Carbon-Trading
- Specialty (Environmental Liability, Professional Liability)**
 - 1. Insurance for Pollution/ Environmental Liability
 - 2. Directors & Officers Insurance
 - 3. Architects & Engineering Professional Liability Insurance Discount for Building Commissioning
 - 4. Professional Liability Insurance for Raters and Home Energy Survey Professionals



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Green Product Offerings: Personal Lines

Product	Description
Green Property Rebuilding	Repair and replace with more energy-efficient and sustainable materials, equipment or appliances
Property Renewable Energy Reimbursement	In case of power outage from the alternative-energy system, indemnify for loss of income generated, costs to purchase replacement electricity and re-connection costs
Property Loss Mitigation Device Discount	Premium credits are offered to homeowners who install mitigation devices or choose storm-resistant construction techniques
Pay As You Drive/Low Mileage Discount	Give incentives to drive less which leads to less pollution that may be contributing to global warming
Fuel Efficient/Low Emission Vehicle Discount	Provide discounts for hybrid or electric passenger vehicles

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Green Product Offerings: Personal Lines Example

Green Property Rebuilding

After a covered loss, it pays for the use of:

- Environmentally friendly or more energy-efficient materials when making repairs
- More energy efficient equipment or appliances.



For those policyholders who are already green, discounts are sometimes offered on their insurance premiums.



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Green Product Offerings: Commercial Lines


Product	Description
Upgrade to Green Commercial Fleets	Given a loss, an option to upgrade the company's fleet to hybrid vehicles for new vehicle replacement
Insurance for Renewable Energy Projects	Coverage for companies in the renewable industry (ex. solar, wind, hydraulic...) to help them in managing risk, defending against lawsuits and protecting assets
Insurance for Renewable Energy Property, Equipment and Loss of Use	Provide replacement cost coverage for equipment with more efficient equivalents
Insurance for Green Building	Offer help to customers to build sustainably by evaluating designs and specifications for new structures and suggesting ways to ensure high-quality construction and exceptional loss prevention
Energy Savings Insurance	Provide a backstop for energy savings guarantees given by energy service companies

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Green Product Offerings: Commercial Lines (continued)

Product	Description
Insurance for Carbon Capture & Storage/ Emission Reduction Projects	Coverage for organizations involved in the capture and storage of large volumes of carbon dioxide and other greenhouse gases
Green Building Coverage Against Adverse Publicity	Provide protection when a green building experiences adverse publicity. Funds are made available to employ crisis management
Perishable Food Reduction Products	Encourage the use of devices that can be used to reduce the amount of produce lost and improve the overall quality of produce during the distribution process
Global Weather Insurance	Bridge the gaps left by traditional insurance coverage within general property damage policies. Insureds are covered against unpredictable weather conditions and climate change (ex. event planners)
Political Risk Insurance for Carbon-Trading	Provide financial protection from political risks which could interrupt the production, certification and delivery of carbon credits.


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Green Product Offerings: Commercial Lines Example

Insurance for Renewable Energy Projects

This product provides coverage for companies in the renewable energy industry (ex. solar, wind, hydraulic...) to help them in managing risk, defending against lawsuits, and protecting assets. These insurance products and services are designed to cover all stages of a project from design to distribution.


It is estimated that global power generation from hydropower, solar, wind and other renewable sources is projected to increase by more than 40% over the medium term.



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Green Product Offerings: Specialty Lines

Product	Description
Insurance for Pollution/Environmental Liability	Cover commercial general liability, pollution legal liability, and environmental responsibilities stemming from legislation and court rulings
Directors & Officers Insurance	Cover the increasing costs of litigation against companies that are believed to be contributing to climate change
Architects & Engineering Professional Liability Insurance Discount for Building Commissioning	Architects and engineering firms implementing building commissioning as part of the construction process are given insurance premium credits.
Professional Liability insurance for Raters and Home Energy Survey Professionals	Offer professional liability, general liability, and property coverage in order to protect certain qualified raters and home energy survey professionals from accidents and potential lawsuits that may occur as a result of business operation.

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Green Product Offerings: Specialty Lines Example

Directors & Officers Insurance

It has been noted that there is increasing litigation occurring against companies that are believed to be contributing to climate change. Even a company's inaction to disclose, assess or implement adaptation strategies could leave the door open to future litigation. Some insurers now offer directors and officers policies with optional global warming litigation protection.



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Green Products: Future Trends & Benefits

Some potential additional green products as suggested by CERES' report "From Risk to Opportunity Insurer Responses to Climate Change" include:

- Warranty and Service contracts for green technology
- Insurance in relation to carbon offsetting projects
- Insurance in relation to carbon trading projects
- Green crop insurance
- Green insurance discount applying to workers compensation
- Professional Liability for energy auditing professionals

Insurers view offering these green products as a competitive advantage over their peers:

- Increased market share
- Expansion into new/niche businesses
- "Positive" adverse selection
- Building green brand name



The future for green insurance markets is optimistic.

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Questions & Answers

Q&A

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