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A Storm is *Brewing* – Climate
Change and Business Continuity
Planning



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The Really Big Picture - Delicate Balance

- We need a planet that:
 - Is surrounded by temperature stabilizing free water (oceans)
 - Has generally mild conditions
 - Earth's average temp is 59° F
 - Extremes -129° to +134° F
- This is only possible because:
 - The earth is the right distance from the sun
 - 24 hour day distributes heat evenly by rotating the planet like a chicken on a rotisserie
 - Atmospheric gases hold in some heat
 - The oceans cover 71% of the globe & thermo-regulate the planet - not too hot, not too cold....just right!





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Facts about Antarctica

- Antarctica is the coldest, driest, highest, windiest and iciest continent on earth.
 - 0.03% average humidity combined with the extreme cold makes it the world's driest desert - called the Crystal Desert.
- Why is Antarctica so important? Two reasons:
 - Water
 - 75% of the earth is covered in water, but 97% of that is saline.
 - 70-75% of earth's fresh water is in glacial ice.
 - Of that amount, 90% is found in Antarctica!
 - Thermoregulation
 - With 98% of it covered with snow and ice, the Antarctic continent reflects most of the sun's light rather than absorbing it.
 - During the winter, the size of Antarctica doubles as the surrounding sea water freezes, effectively blocking heat transfer from the warmer surrounding ocean
- Mean Temps:
 - Winter: -40 to -94°F (-40 to -70°C)
 - Summer: 5 to 31°F (-15 to -35°C)



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Melting.....



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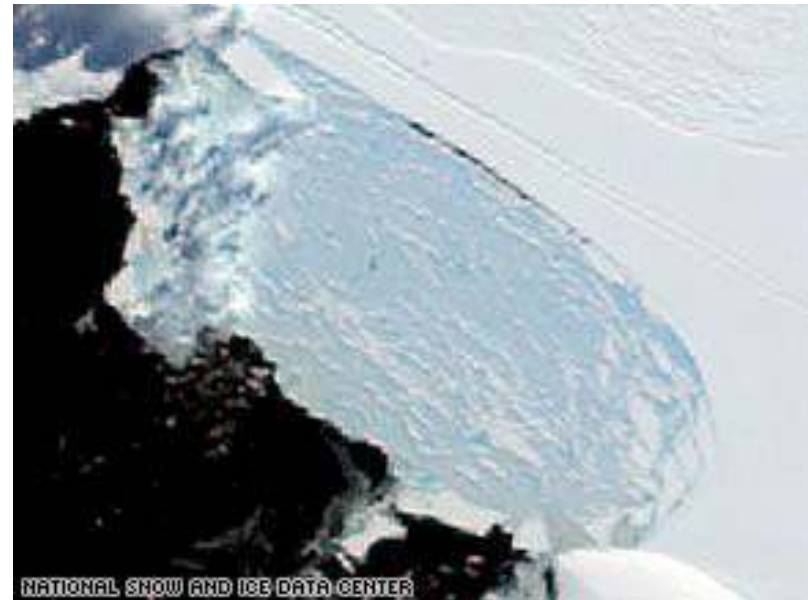


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Collapse of the Wilkins Shelf

- A chunk of Antarctic ice about seven times the size of Manhattan suddenly collapsed
- Satellite images show the runaway disintegration of a 160-square-mile chunk in western Antarctica, which started Feb. 28.
- The rest of the Wilkins ice shelf, which is about the size of Connecticut, is holding on by a narrow beam of thin ice. Scientists worry that it too may collapse.
- “More indicative of a tipping point or trigger in the climate system,” said Sarah Das, a scientist at the Woods Hole Oceanographic Institute.





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Agenda

- Definitions - finding common ground
- What is going on around the world?
- Effects of climate change on business
- Climate change company strategies
- What does this mean going forward?



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Definitions

- **Climate change** is the variation in the Earth's global climate or in regional climates over time.
 - It involves changes in the average state of the atmosphere over time ranging from decades to millions of years.
 - This can be caused by dynamic processes on Earth, external forces including variations in sunlight intensity and more recently by human activities.



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Definitions

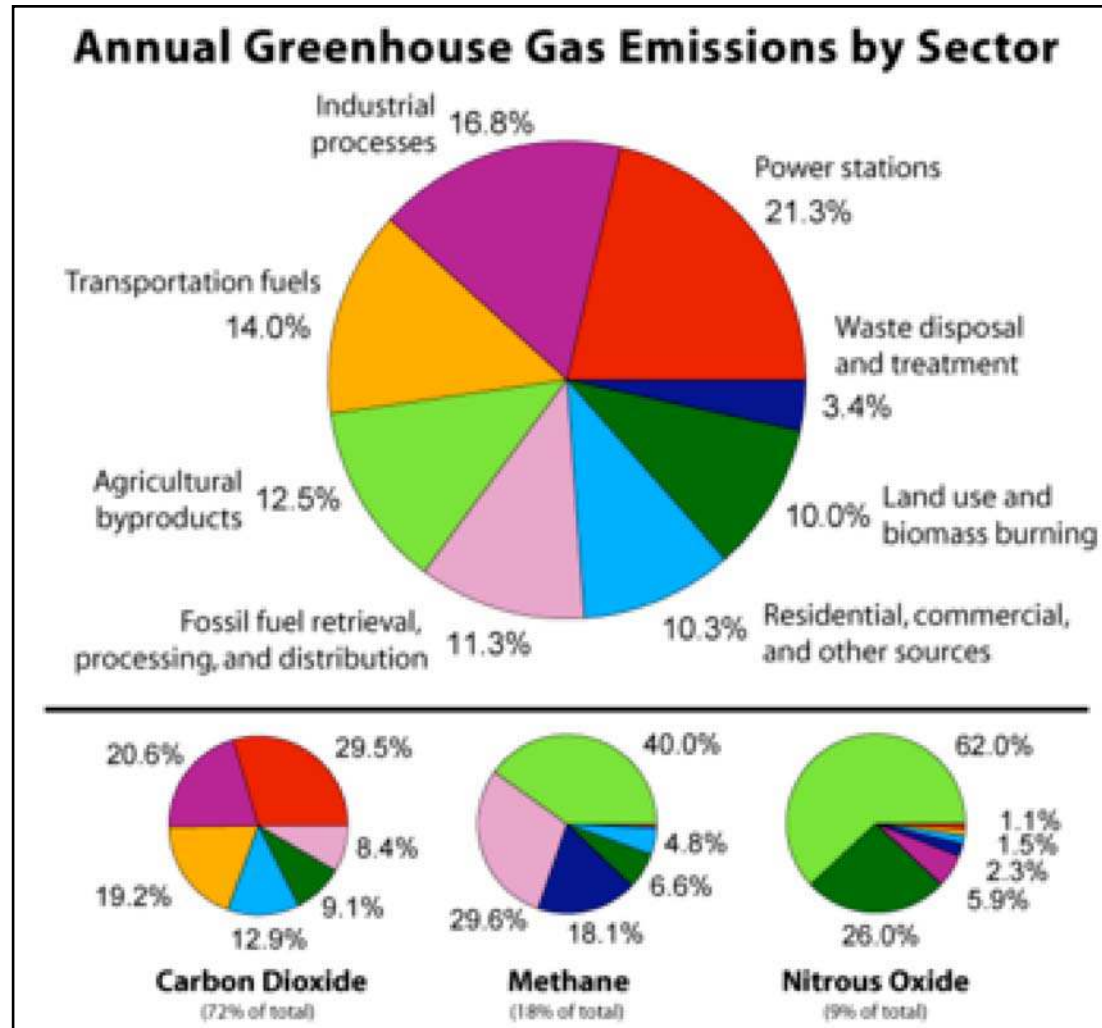
- **Greenhouse Gases (GHG)**

- Components of the atmosphere that contribute to the greenhouse effect. Without the effect the Earth would be uninhabitable.
 - In its absence, the mean temperature of the earth would be about -19 °C.
- GHG come from natural sources and human activity.
 - GHG include in the order of relative abundance:
 - water vapor, carbon dioxide, methane, nitrous oxide, and ozone.



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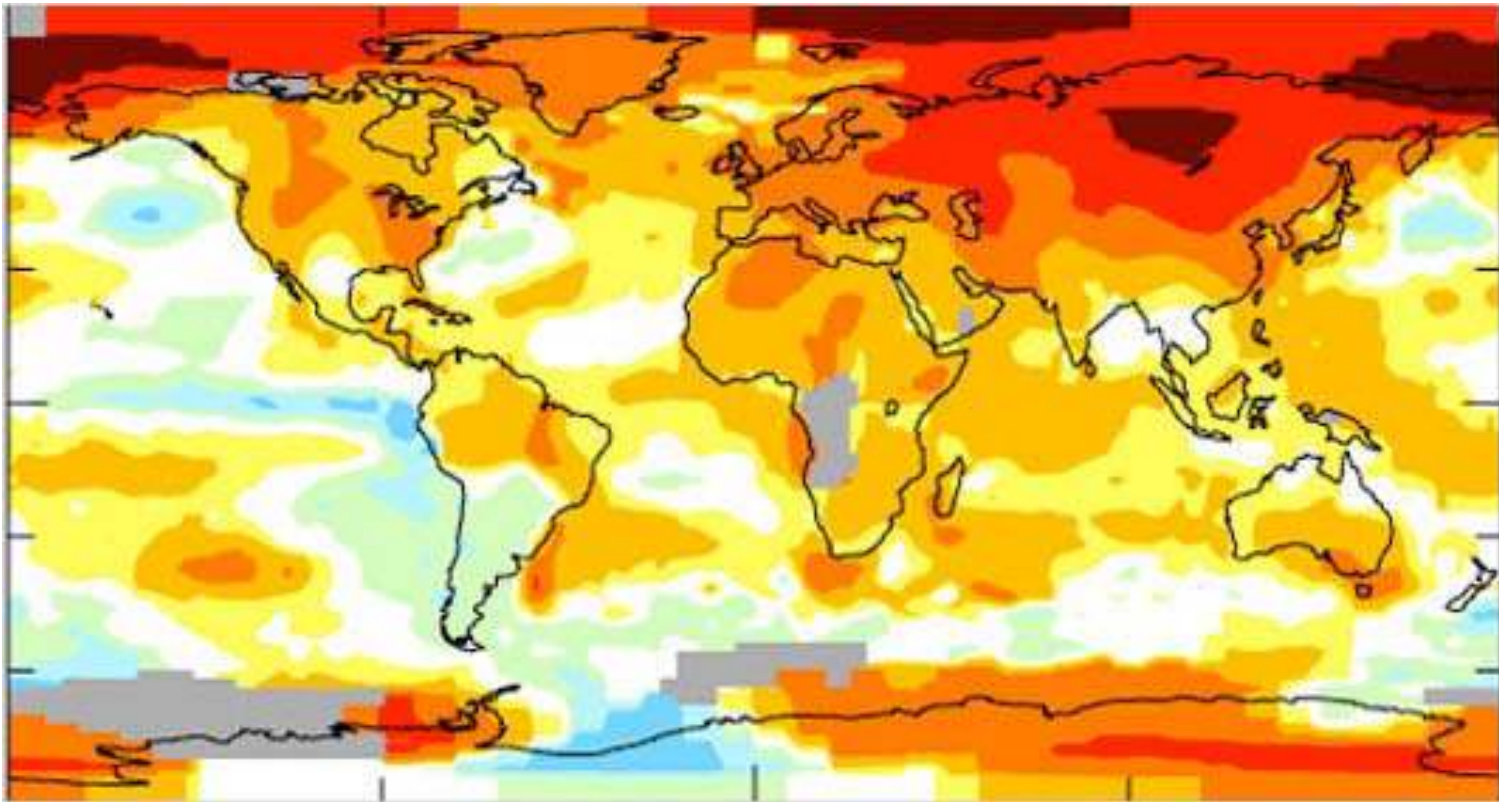




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What's going on around the world?



Areas in 2007 that were warmer (reds) and colder (blues) than the mean annual temperature from 1951–1980. (Credit: NASA/GISS)



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Increase In Weather Related Disasters

- Munich Re reported that 2007 had more natural disasters (950 incidents) since it began keeping such records in 1974.
 - 850 incidents in 2006.
- The damage caused by natural disasters in 2007, mainly earthquakes, hurricanes, flooding, and wildfires.
 - Totaled US \$75 billion.



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Storm Kyrill - Europe

- January 2007
 - Affected large parts of Northern and Western Europe.
 - Broad hurricane-force winds resulting in insured losses of about US \$5.8 billion.
 - Total economic losses of some US \$10 billion.





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Flooding in Great Britain



- June and July 2007
 - Flooding in Great Britain in led to insured losses of about US \$3 billion.
 - Total economic losses of US \$4 billion.

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Severe Winter Weather - USA

- April 2007
 - Winter storms in the USA resulted in losses of US \$1.57 billion.





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South Asia Flooding



- July - November 2007
 - Displacing over 20 million people.
 - 6,600+ deaths.
 - US \$1 billion.

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California Wildfires

- October 2007
 - Largest evacuation in state history.
 - 410,000 acres burned.
 - Over 2,100 structures destroyed.
 - Insured losses of at least US \$1.9 billion.





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Des Moines, Iowa June 12, 2008



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Cedar Rapids, Iowa - June 13, 2008



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Central Wisconsin - June 14, 2008



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Galveston - September 14, 2008



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Climate Change Effects on Business

- Climate change presents different problems that we normally face (much like a pandemic threat)
 1. Impact is global
 2. Problem is long-term
 3. Harm may be irreversible
- There are seven areas of risk to explore.



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1. Regulatory Risk

- Two ways this could affect your business:
 1. Regulate emissions of products that your company manufactures (i.e. car emissions)
 2. Regulate the manufacturing process that you use to create your products
- Over 40 Fortune 500 companies favor mandatory federal regulation of GHG
 - Allows companies to manage risk and gain and advantage over less prophetic competitors



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2. Supply Chain Risk

- All companies will need to evaluate the:
 - Vulnerability of their suppliers to potential regulation.
 - Cost of suppliers complying with regulations.
 - Geographical distribution of supplier network.
 - Availability of products from suppliers.



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3. Product and Technology Risk

- Some companies will do better than others in coping in a carbon-restrained world.
 - Those who create new climate friendly products or services will benefit
 - Not just products but professional services firms will do well.



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4. Litigation Risk

- Companies that generate significant carbon emissions will likely face litigation over time (I.e. tobacco, asbestos, etc.)
 - Personal liability for directors and officers
 - Swiss Re has noted that this is a potential exposure for companies insurance portfolios.
 - Speculation on future losses.



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5. Reputational Risk

- Companies who fail to respond will face the *court of public opinion*.
 - Consumer and investor backlash.
 - Opportunity to demonstrate “good citizens” of the planet to key stakeholders.



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6. Financial Risks



- Three of the largest U.S. investment banks have developed *new environmental standards to help lenders evaluate risks* associated with investments in coal-fired power plants.
 - Citibank, JP Morgan Chase and Morgan Stanley issues Carbon Principals (February 4, 2008):
 - more difficult for coal plants to secure financing.
 - The focus of the principles will be to:
 - steer power companies away from plants that emit high levels of carbon dioxide
 - focus on new, cleaner and renewable technologies.
 - The principles do not, however, strictly prevent any of the banks from financing the plants.



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What are the Carbon Principals?

- Citibank, JP Morgan Chase and Morgan Stanley developed the Carbon Principals around three key areas:
 1. Energy efficiency - An effective way to limit CO₂ emissions is to not produce them.
 2. Renewable and low carbon distributed energy technologies.
 3. Conventional and advanced power generation.



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7. Physical Risks

- The following physical risks are possible as a result of climate change:
 - Flooding (100 year floods happening more often)
 - Droughts
 - Decrease in potable water
 - Extreme heat (potential for power outages)
 - Extreme winter cold (shortage of natural gas)



AP / Prakash Hatvalne



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Physical Risks



- Hurricanes (more frequent and stronger)
- Tornados (more frequent and stronger)
- Increased windstorms



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Physical Risks



Reuters / Romeo Ranoco



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Physical Risks

- Rising sea levels
 1. Bangkok
 2. Guangzhou
 3. Hong Kong
 4. Kolkata (Calcutta), India
 5. London
 6. **Miami**
 7. Mumbai
 8. **New York**
 9. Shanghai
 10. Tianjin (China)
 11. Tokyo



NYC: Today's 100-Year Flood Could Occur Every 10 Years under the Higher-Emissions Scenario



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Physical Risks

- Increase in population displacement (widespread migrations)
- Increased border tensions
- Insect infestation
- Diseases - Epidemics
 - Spread of “unusual illnesses” such as Chikungunya previously only in Asia and Africa, now in Europe
 - Malaria
- Climate change is “overall perceived as a threat to national security,” by the US Military (study released April 2007).



EFE / Juan Medina



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Climate Change Company Strategies

- Quantify the company carbon footprint
 - Understand the source and level of GHG
 - Track over time
 - Will likely lead to heightened awareness
 - Expose broader risks and opportunities
- Check out Greenhouse Gas Protocol
 - www.ghgprotocol.org



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Sample of Companies -GHG Protocols

- Daimler Chrysler, Germany
- Ford Motor, USA
- General Motors, USA
- Volkswagen, Germany
- Bank of America
- Body Shop, UK
- Cargill, USA
- Eastman Kodak, USA
- Fetzer Vineyards, USA
- IBM, USA
- IKEA International, Sweden
- Johnson & Johnson, USA
- Miller Brewing Co, USA
- Nike, USA
- Pfizer Inc., USA
- Raytheon, USA
- Sony Electronics, Japan
- Starbucks Coffee, USA
- Staples Inc., USA
- Sun Microsystems
- Target Corporation, USA
- Unilever HPC, USA



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Assess Risks *and* Opportunities

- Once you understand the direct and indirect footprint impact of your business
 - Begin to think strategically about how the seven risks could
 - hurt *or*
 - provide opportunities to the business.
- Then we need to direct our attention to our five our areas.



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Adaptation

- **Adaptation** - developing ways to protect people and places by reducing their vulnerability to climate impacts (simply defined - coping strategies).
 - Adaptation to environmental changes is not new.
 - Strategies to cope with drought, increased temperatures, flooding, high winds, etc.
 - Changes in building codes
 - Water conservation
 - Increased tree plantings
 - Building seawalls
 - Relocating buildings to higher ground to protect communities against increased flooding due to storms



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Mitigation

- **Mitigation** - What can be done to minimize projected losses.
 - Reduction of greenhouse gases and decreasing carbon footprint.



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Preparedness

- **Preparedness** - refers to the state of being prepared for specific or unpredictable events or situations.
 - What can be done to train and educate staff?
 - Modify existing plans (emergency response, BCP) to cope with possible outcomes.



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Response

- **Response** - Develop appropriate response plans based on findings and new threats.
 - Affects all types of plans - emergency response, BCP, DR, Crisis Communications, Incident Management. Examples include:
 - The 100 year flood becomes the 50, 25 or 10 year flood.
 - Protracted power outages (black or brownouts)
 - Droughts
 - Severe weather - winter storms or summer rains/winds



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Recovery

- **Recovery** - Do our current recovery strategies meet new threats we might face in a climate impacted world?
 - Reassess BCPs based on these changes and the world around us.
 - Do we need to change or modify our recovery strategies?



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What does this mean going forward?

- Climate change will likely be viewed as a *significant* risk going forward.
 - How can BCP professionals be ahead of the curve?
 - Review Risk Assessments for changes in physical risks.
 - Assess and modify *all plans* in view of findings.
 - What can be done to better position and protect the company?
 - Adaptation, mitigation, preparedness, response and recovery strategies.



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Personal Response to Climate Change



- Understand the consequences of your daily choices.
- Consider low carbon products and a low carbon lifestyle.
- Consider low carbon investments in your home: insulation, solar, etc.
- Buy recycled products.
- Three R's
 - Reduce
 - Reuse
 - Recycle



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Unique Opportunity...

- Emergency Managers and Business Continuity Professionals have the *unique opportunity* to be *forward thinking* regarding climate change...
 - Don't put your head in the sand
 - Be open
 - Be innovative
 - Raise the issue
 - Don't just think outside the box, ***blow it up***...
 - with a low carbon fuel of course!





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THANK YOU!

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