



Climate Change and Carbon Neutrality

*A Sound Risk Management Approach Creates
Business Opportunities*

EPA Climate Leaders Partners Meeting
Boulder, CO
December 5, 2007

Stephen Myers, Vice President
Environmental Risk Management Practice
Rutherford

...eliminating or minimizing environmental risks and uncertainties...

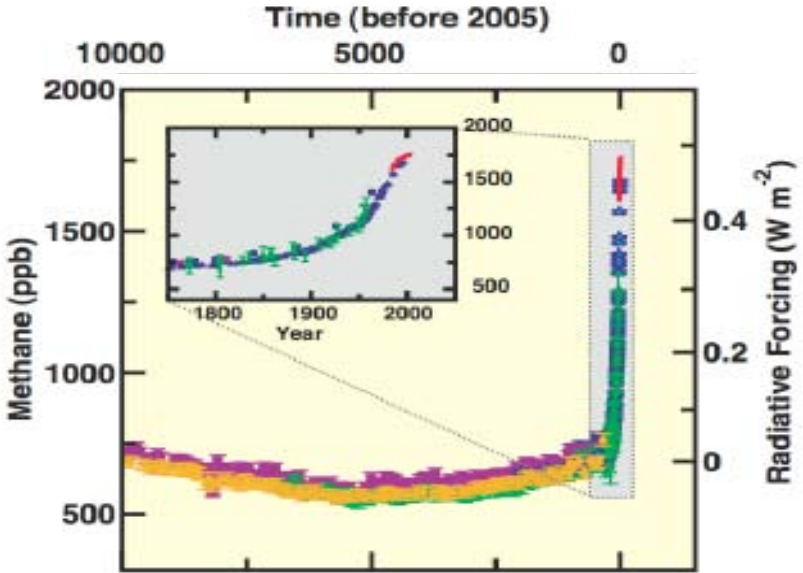
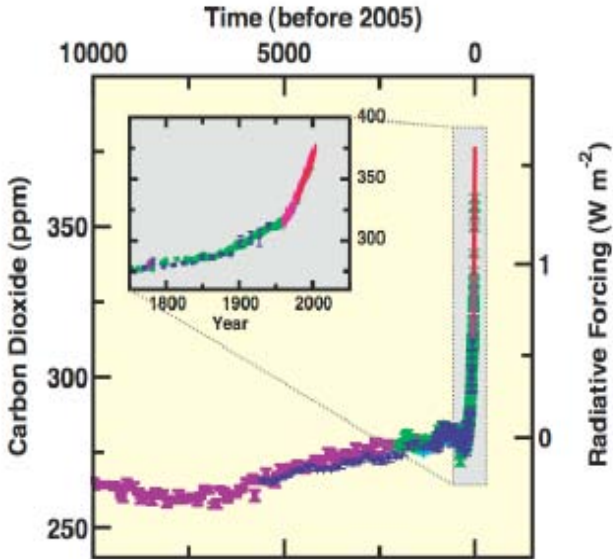
About Rutherford

- Rutherford was founded in **1916**.
- Specialize in managing risk and insuring large firms with **difficult exposures**, multiple locations and with complicated insurance issues
- Rutherford has been an **employee-owned** company since 1991
- **Specialties** in environmental, marine, international, healthcare, personal lines and financial guarantees
- Rutherford is a member of the **Assurex Global** and **Worldwide Broker** networks, two elite groups of independent risk management specialists and brokers
- Rutherford has client operations in **all 50 states**, as well as in **over 100 countries**
- Rutherford is ranked as the **42nd** largest insurance broker in the U.S.

RUTHERFOORD
RISK MANAGEMENT AND INSURANCE PROFESSIONALS

Climate and Weather-Related Impacts...

Change in GHG Concentrations



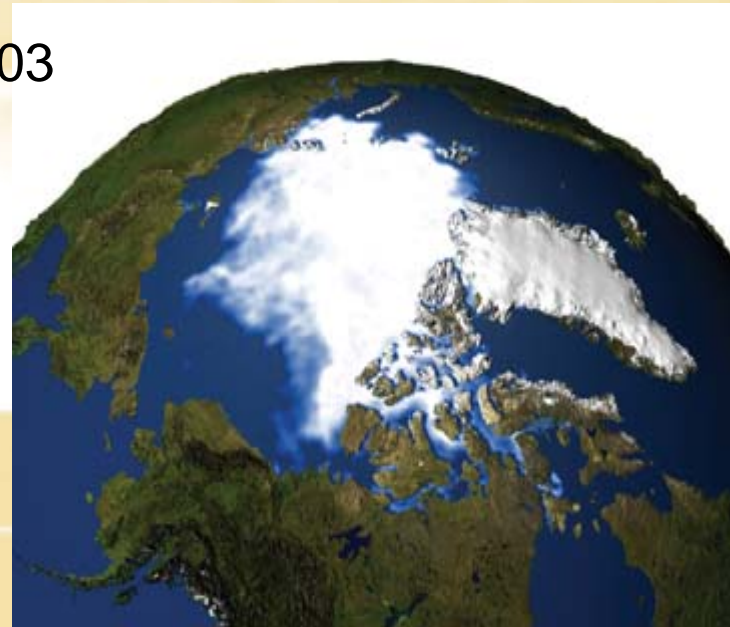
Source: IPCC, 2007

Then and Now...

1979



2003

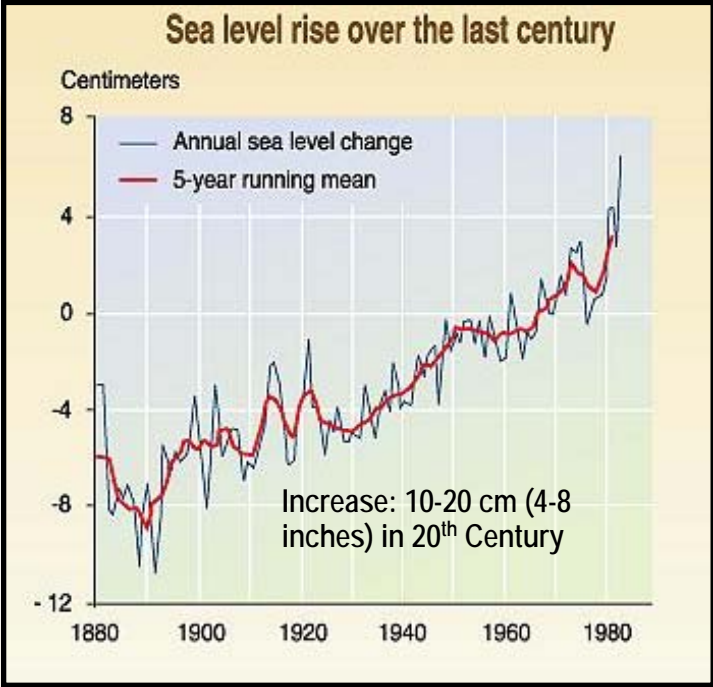


Evan Mills - US Department of Energy's Lawrence Berkley National Laboratory

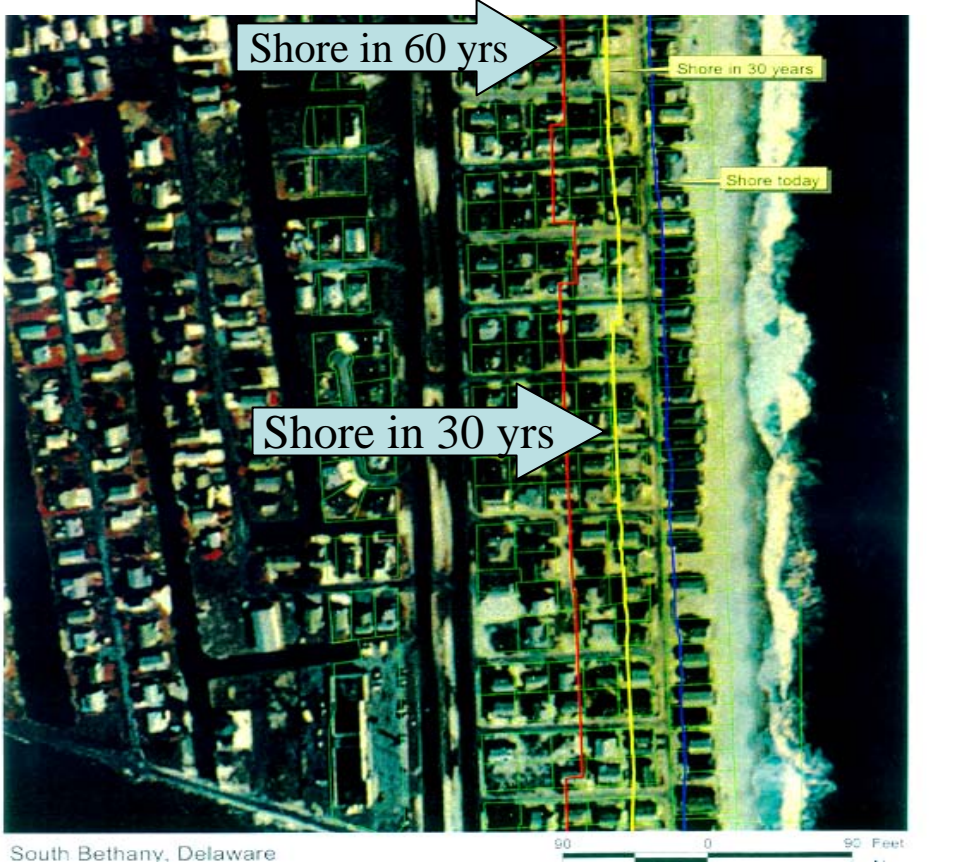
RUTHERFOORD
RISK MANAGEMENT AND INSURANCE PROFESSIONALS

www.rutherford.com

Sea Level Rise...



South Bethany, Delaware -- 3 rows of homes to be lost. Source: Heinz Foundation (for FEMA)

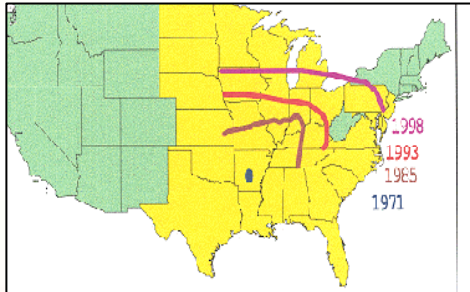


Evan Mills - US Department of Energy's Lawrence Berkley National Laboratory

Non- Human Health Impacts Are Economically Important...



Pine beetle superinfestations: wildfire, lumber products, tourism/recreating, mudslides



Crop Diseases: e.g. Expanding range of soybean rust: 1971-1998



Coral bleaching: loss of pharmaceutical resources; coastal protection; freshwater salinization; fisheries

Evan Mills - US Department of Energy's Lawrence Berkley National Laboratory

RUTHERFOORD
RISK MANAGEMENT AND INSURANCE PROFESSIONALS

The Big Picture...



Something is happening out there...

- ✓ Changes in the frequency and severity of severe weather events
 - ✓ Unprecedented weather-related insured losses in 2005
 - ✓ Loss of or reduced insurance coverages with rising premiums
 - ✓ Increasing societal vulnerability to losses- population growth, demographic shifts and higher property values/area
- Consequence- Reduced investment, higher risks, business failure, slowing economic growth?

What's next and what do we do?

RUTHERFOORD
RISK MANAGEMENT AND INSURANCE PROFESSIONALS

Climate Change – Impacts

Virtually all segments of industry have a degree of vulnerability to the likely impacts of climate change, including:

- **Damage to property**- structures, automobiles, marine vessels, aircraft, etc.
- **Business interruption**- disruption of supply, loss of utility service, production shutdown, employee availability, data loss, etc.
- **Pollution releases**- site contamination, toxic tort
- **Life and health**- impact on human health
- **Fiduciary responsibility**- Directors and Officers responsibility
- **Investment assets**- impact on asset value

Primary Environmental Risk Areas

- **Physical Risk**- damage to property
- **Litigation Risk**- legal liability
- **Regulatory Risk**- impacts from legislation and regulation
- **Competitive Risk**- market impacts- negative and positive
- **Reputational Risk**- stakeholder impact



Opportunities are created...

Rutherford's Climate Change Initiative

1) Lead by Example- Proactive Measures

- ✓ GHG reporting (carbon footprint)- 7/2006
- ✓ Carbon neutrality- First U.S. Insurance Broker- 8/2006
- ✓ EPA Climate Leader/GHG Reduction Goal- 3/2007
- ✓ Internal GHG tracking system- 9/2007
- ✓ Customer programs and services- 2007

2) Adaptation- Risk Reduction

- ✓ Loss prevention and control (Building codes, zoning, hardened communications, solar or fuel cell back-ups, etc.)

3) Engage Other Leaders on the Issue-

- ✓ Climate Change Risks- EPA Climate Leaders
- ✓ Business Risks- Clients and Colleagues
- ✓ Business Leadership- national corporate leadership forums

4) New Insurance Products- Work with Carriers

- ✓ Exclusions, D&O carve-outs, etc.
- ✓ Carbon credit delivery
- ✓ Energy efficiency guarantees

Carbon Footprint Analysis- 7 Step Process

Rutherford Case History

1. Gather Organizational Data
2. Set Boundary Conditions
3. Calculate Emissions
4. Data Management
5. Adjustments to Methodologies
6. Emissions Goals
7. Auditing and Verification

Organizational Information

- 19 Operational Units
 - 12 Physical Locations
 - All in U.S.
 - Leased locations considered only if distinct operation
- Track 6 GHG's
 - CO₂, CH₄, N₂O,
 - HFC's, CFC's, SF₆
- Emission Source Identification
 - Used WRI Protocol

Set Boundary Conditions

- Assets- Operational Information
- Control Approach
- Use Operational Controls

Calculate Emissions

- Purchased Electricity
 - Owned Facilities
 - Leased Facilities
- Auto Travel – Reimbursed mileage
 - Personal
 - Rented
- Airline Travel – Reimbursed Trips

Rutherford used calculation tools from World Resources Institute and World Business Council for Sustainable Development

Data Management

- Convert all GHG emissions to CO₂ equivalents
- Normalize data based on the average number of employees in the year evaluated (2006 in this case)
- Units tracked = Tons of CO₂ emissions per person per year

Adjustments to Methodologies

- New employees are included in normalization process
- New leases will include data reporting obligations
- For leased facilities – work with owner to address this initiative
- Annual Update
 - Compare to industry / regulatory developments

Emissions Goals

- Reduce GHG Emissions by 7% per employee between 2006 and 2012

Because Rutherford is a service-based organization we Used a "Rate-Based Goal" - Instead of an "Absolute Goal"

- Maintain net-zero GHG emissions by purchasing offsets

Auditing and Verification

- Internal Audit
- Management Review
- Corrective Action

So What Are YOU Doing About Your Environmental Risks...?

How are you dealing with circumstances that are uncertain, vague, evolving, controversial... ?

- *Level of certainty*
- *Possibility, probability and significance*
- *How important is this issue*
- *Birth of the insurance industry in the late 1600's- Edward Lloyd spread the risk of loss*
- *Implement a sound risk management program*

Managing Ambiguity in a Time of Great Change

How do we frame the issues, trends and events that would affect capital investment and deployment of resources in response to shareholders, regulators and influencers, e.g., NGO's

What drives business decisions, organization and transactions?

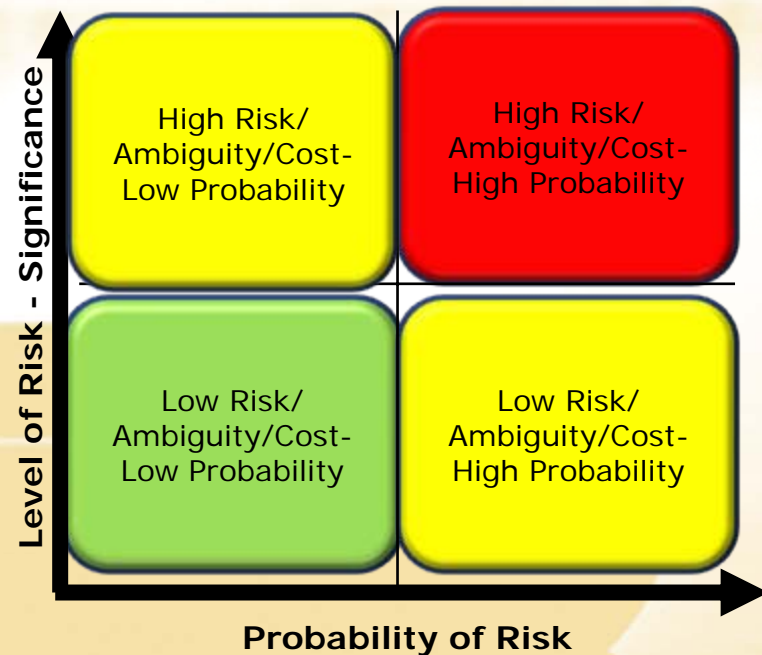


Assessing Environmental Risk

The amount of “certainty” - reduces ambiguity

KEY PARAMETERS:

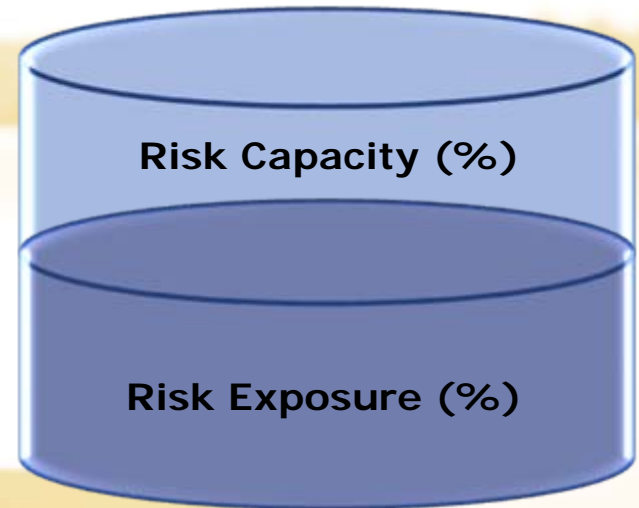
- Time
- Probability
- Significance
- Risk vs. Impact



The Hidden Value in Risk

Beyond the “Negative”

- Risk is not a “dirty four letter word”
- Capital investment follows sound risk management
- Risk management can lead to a “common language” in valuing environmental performance



“Available Risk Capacity” - a positive competitive advantage

What's Over the Horizon?

- **New issues- e.g., Climate Change (energy)**
 - Early engagement- "on the bleeding edge"...
 - Regulatory expectations- international and U.S.
 - Understand your impact (footprint) and manage your risks
- **Environmental risk management- blunt "volatility"**
- **Environmental performance is now a core business variable and differentiator**
- **Smart Asset Management- proper accounting**
- **Available risk capacity- business growth**

Superior Environmental Performance Yields Business Value

RUTHERFOORD
RISK MANAGEMENT AND INSURANCE PROFESSIONALS

Stephen J. Myers
Vice President and Practice Leader
Environmental Risk Management Practice
stephen.myers@rutherford.com
(518) 357-4936 (office)
(518) 423-4806 (cell)

RUTHERFOORD
RISK MANAGEMENT AND INSURANCE PROFESSIONALS