

**Buckeye Continuing Education Credit
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Emerging Risk

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Emerging Risk Presentation Goal

Situational Awareness

Emerging Risk Definitions

- **Lloyds:** An issue that is perceived to be potentially significant but which may not be fully understood or allowed for in insurance terms and conditions, pricing, reserving or capital setting.
- **PWC:** Those large scale events or circumstances beyond one's direct capacity to control, that impact in ways difficult to imagine today.
- **S&P:** Risks that do not currently exist.

Emerging Risk Definition

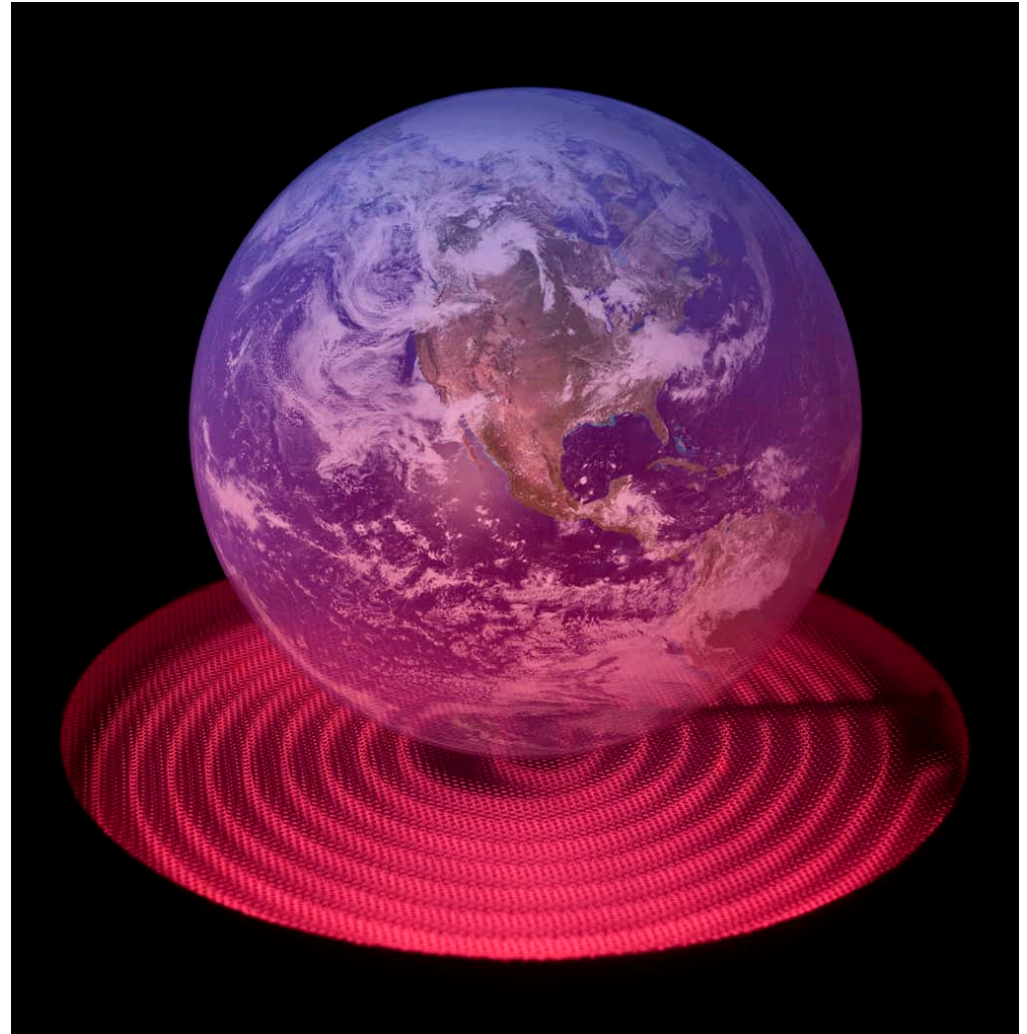
- **Completely new risks that have never been seen before.**
 - *appearance of AIDS virus in humans*
 - *development of the first atomic bomb*
- **Previously known risks that are evolving in unexpected ways with unanticipated consequences.**
 - *U.S. home mortgage market*
 - *liability regimes/regulatory changes*

Emerging Risk Characteristics

- **Significance may be uncertain, not well understood.**
- **Difficult to quantify due to lack of data and/or volatility.**
- **Consequences and implications can be ambiguous.**
- **Interactions and interconnectedness with other risks can be complex.**
- **May be systemic, outside of organizational control.**

Welcome to “VUCA” World

- **VOLATILITY**
- **UNCERTAINTY**
- **COMPLEXITY**
- **AMBIGUITY**



Core Global Emerging Risk Categories

- Geopolitical
- Societal
- Economic
- Technological
- Environmental



Emerging Global Geopolitical Risks

- Increased international terrorism.
- Proliferation of weapons of mass destruction.
- Wars between nations and civil wars.
- Failed and failing states.
- Transnational crime and corruption.
- Failure of democratic institutions.
- Instability in the Middle East.



Emerging Risks: Failed or Failing States

Could Food Shortages Bring Down Civilization?

Key Factors in Food Shortages:

- Population growth
- Loss of topsoil
- Water shortages
- Rising temperatures

Food Shortages Can Lead to Failed States.

Emerging Global Societal Risks

- **Pandemics and infectious diseases.**
- **Chronic diseases in the developed world.**
- **Greater economic inequality.**
- **Breakdown of critical infrastructure.**
- **Rapid shifts in demographic patterns.**
- **Unsustainable world population growth.**



Emerging Risks: U.S. Infrastructure

Infrastructure Report Card Grade: “D”

- Bridges
- Dams
- Drinking Water-Water Mains
- Power Grids
- Levees
- Waste Water, Solid Waste Disposal
- Roads and Railroads
- Transit systems
- Inland Waterways
- Schools
- Harbors

Emerging Global Economic Risks

- Oil price shock/energy supply interruptions.
- Unsustainable national deficit levels.
- Global economic instability.
- Fiscal crises caused by demographic shifts.
- Asset price/commodity market volatility.
- Fall in value of U.S. dollar.



Emerging Risks: U.S. Deficit Levels

USA Inc.

- Cash Flow: Negative \$1.3 Trillion (2010)
- Net Worth: Negative \$44 Trillion
- Off-Balance-Sheet Liabilities: Enormous
- Profits: Rare

Emerging Global Technological Risks

- **Disruptions in technology and business systems.**
- **Breakdown in communications infrastructure and Internet blackouts.**
- **Cloud computing vulnerabilities.**
- **Cyber wars and business espionage.**
- **Emergence of risks associated with new technologies.**



Emerging Risks: EMP Technological Nightmare

- Communication satellites out
- Ground electronics fried
- Transformers destroyed
- Power grid taken down
- Internet unavailable

Emerging Environmental Risks

- **Climate change and extreme weather.**
- **Loss of freshwater services.**
- **Natural and man-made catastrophes.**
- **Depletion of oil reserves.**
- **Depletion of key raw materials.**
- **Increased industrial pollution.**
- **Loss of biodiversity.**



Climate Change

“We’d be out of our minds if we wrote weather insurance on the opinion global warming would have no effect at all.”

Warren Buffett

Shareholder Annual Meeting (2006)

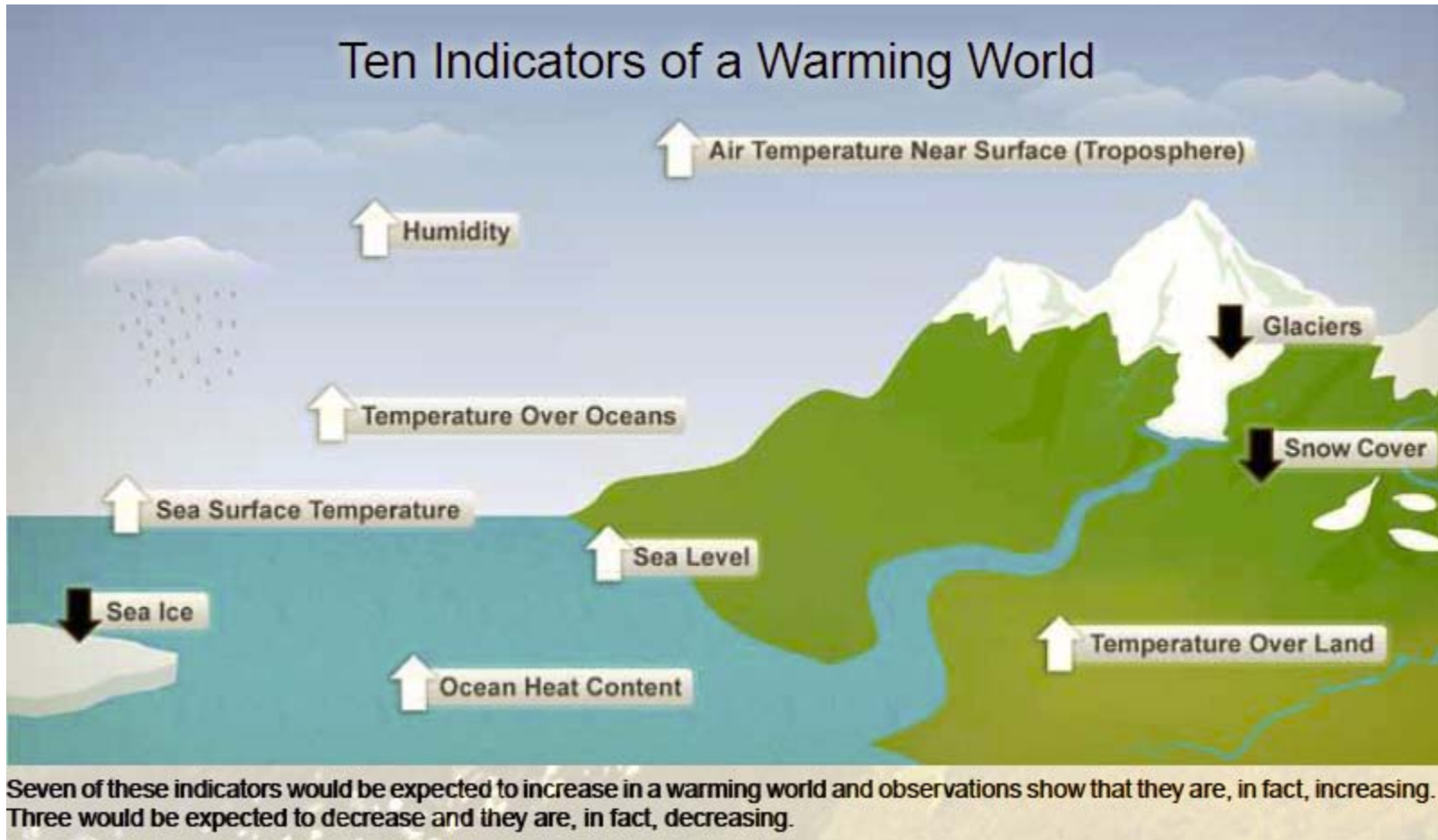
Emerging Risks: Climate Change

U.S. Global Change Research Program (2009)

The 10 Key Findings

- **Global warming is unequivocal and primarily human-induced.**
- **Climate changes are underway in the U.S. and are projected to grow.**
- **Widespread climate-related impacts are occurring now and expected to grow.**
- **Climate change will stress water resources.**
- **Crop and livestock production will be increasingly challenged.**
- **Coastal areas are at risk from sea-level rise and storm surge.**
- **Risks to human health will increase.**
- **Climate change interact with social, environmental stresses.**
- **Thresholds will be crossed, leading to large changes in climate and ecosystems.**
- **Future climate change and its impacts depend on choices made today.**

Emerging Risk: Climate Change



Emerging Risk: Climate Change

Key Issues for Society

- Population shifts and development choices are making more Americans vulnerable to the expected impacts of climate change.
- Vulnerability is greater for those who have few resources and few choices.
- City residents and city infrastructure have unique vulnerabilities to climate change.
- Climate change affects communities through changes in climate-sensitive resources that occur both locally and at great distances.
- Insurance is one of the industries particularly vulnerable to increasing extreme weather events such as severe storms, but it can also help society manage the risks.
- The United States is connected to a world that is unevenly vulnerable to climate change and thus will be affected by impacts in other parts of the world.

Emerging Risk: Climate Change Insurance Opportunities

- New opportunities for leadership
- Risk management services
- New risks to insure in evolving industries
- New incentives to insureds in auto, homeowners, and commercial policies.

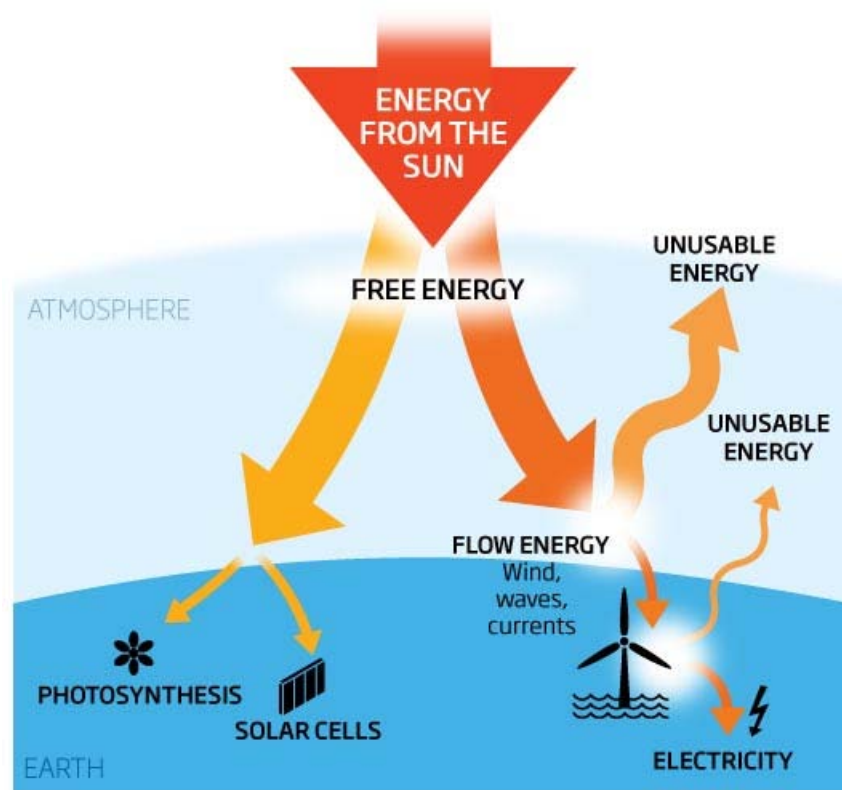
Emerging Risk: Climate Change

Something to Consider

Not all energy is useful

©NewScientist

Solar energy from the sun is converted to useful ("free") energy by photosynthesis and the formation of atmospheric and ocean currents. By harnessing wind and wave power we could waste some of that useful energy

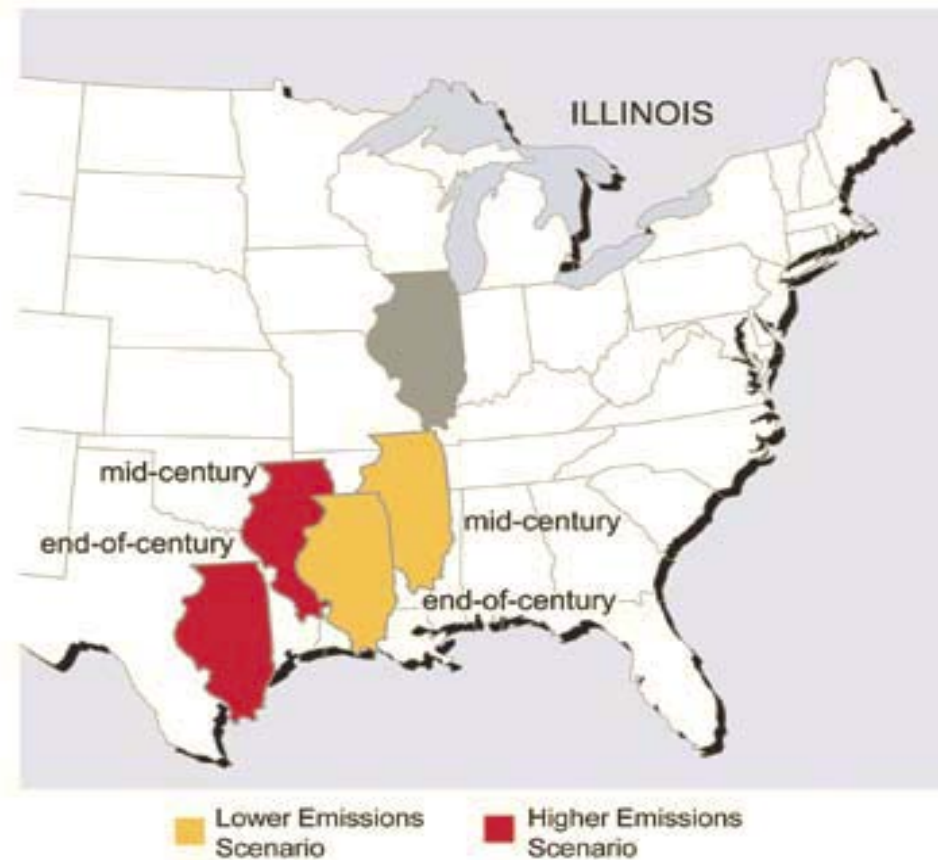


Emerging Risk: Climate Change

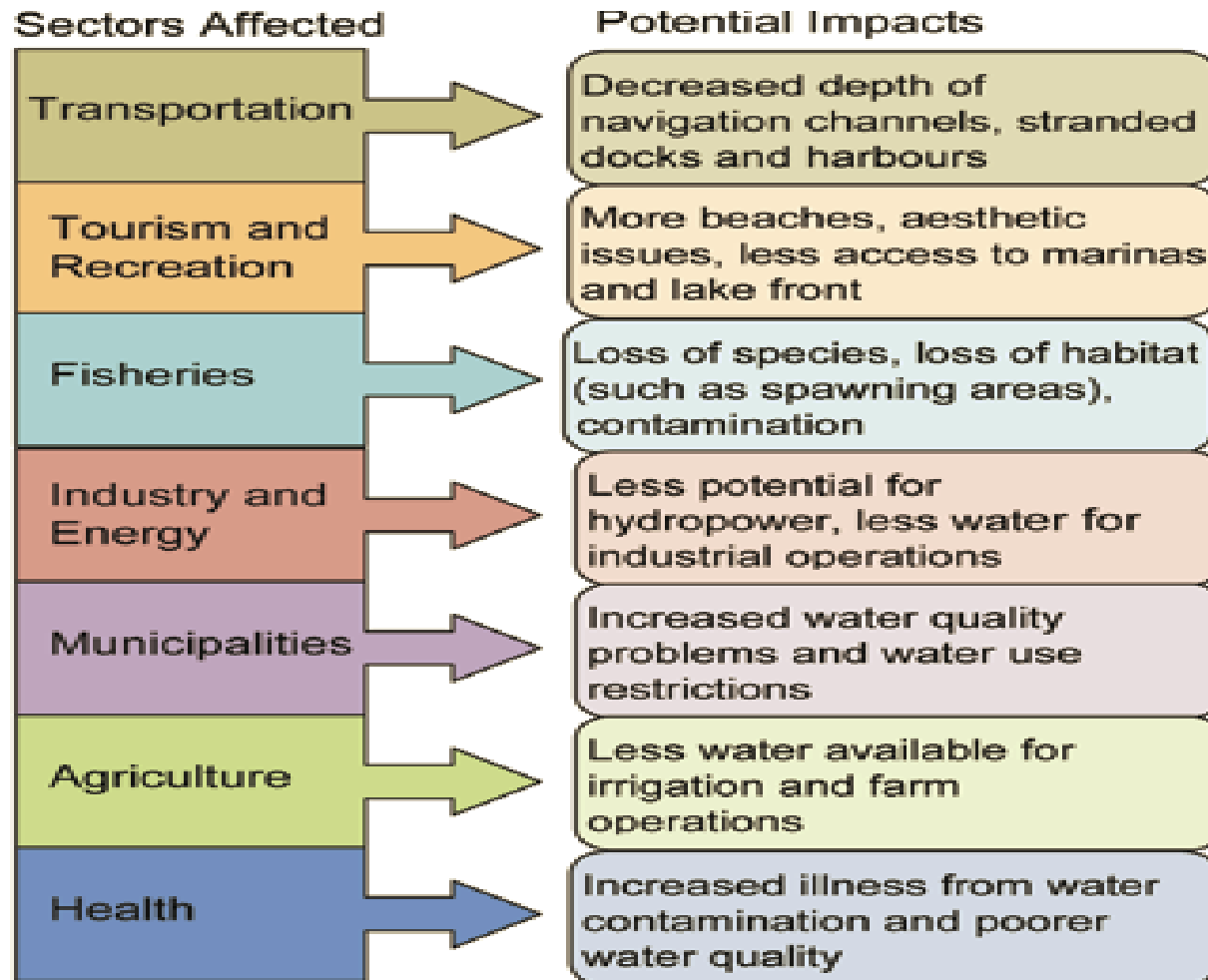
Key Issues for the Midwest

- Heat waves, air quality problems, insect and waterborne diseases increases.
- Reduced water levels in the Great Lakes affecting shipping, infrastructure, beaches, and ecosystems under higher emission scenario.
- More periods of both floods and water deficits.
- Challenges in managing crops, livestock, and forests due to heat waves, floods, droughts, insects, etc.
- Threats to native species from changing climate conditions, pest, disease, invasive species, etc.

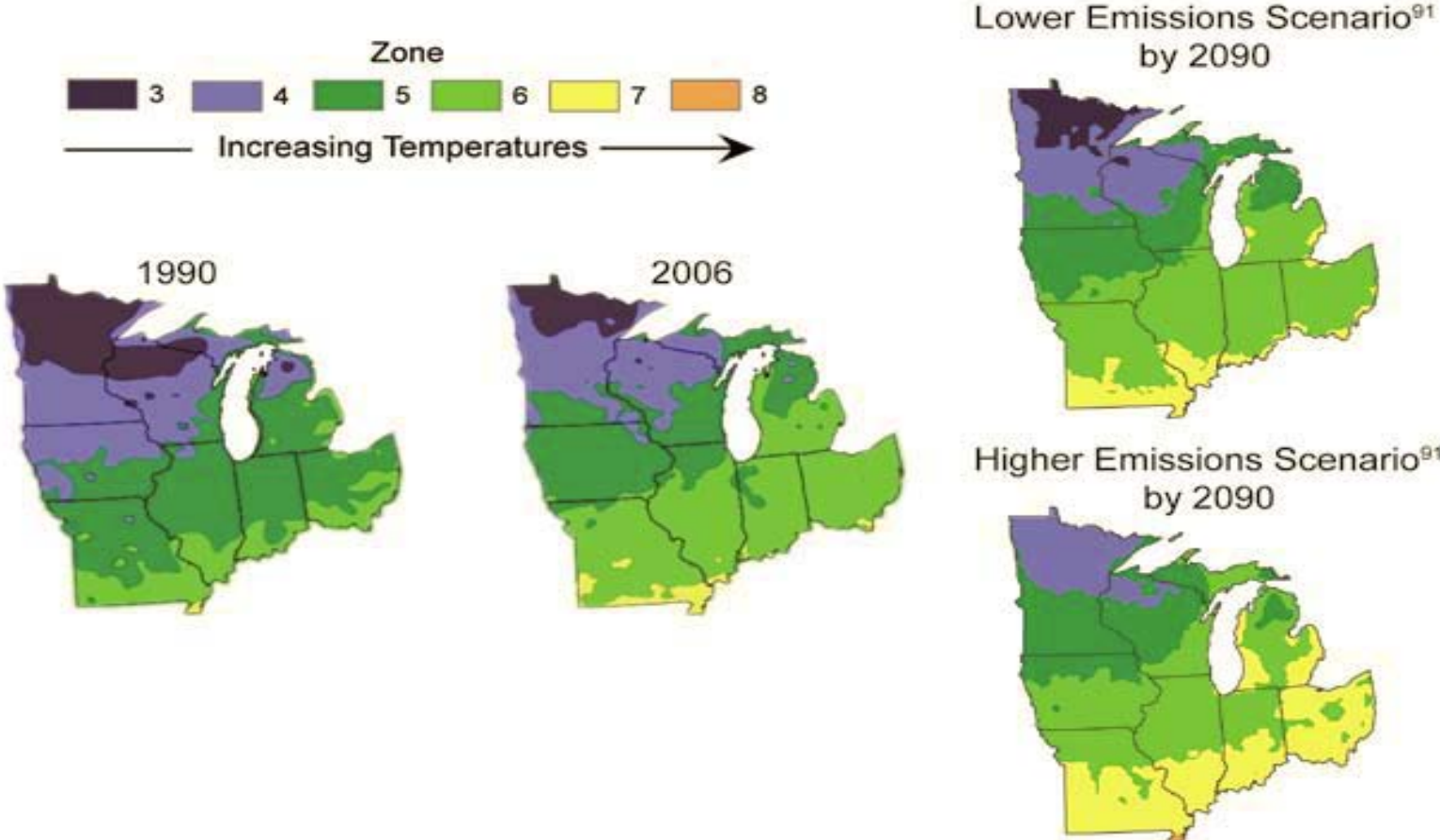
Emerging Risk: Climate Change Midwest



Emerging Risk: Climate Change Midwest



Emerging Risk: Climate Change Changes in Plant Hardiness Zones

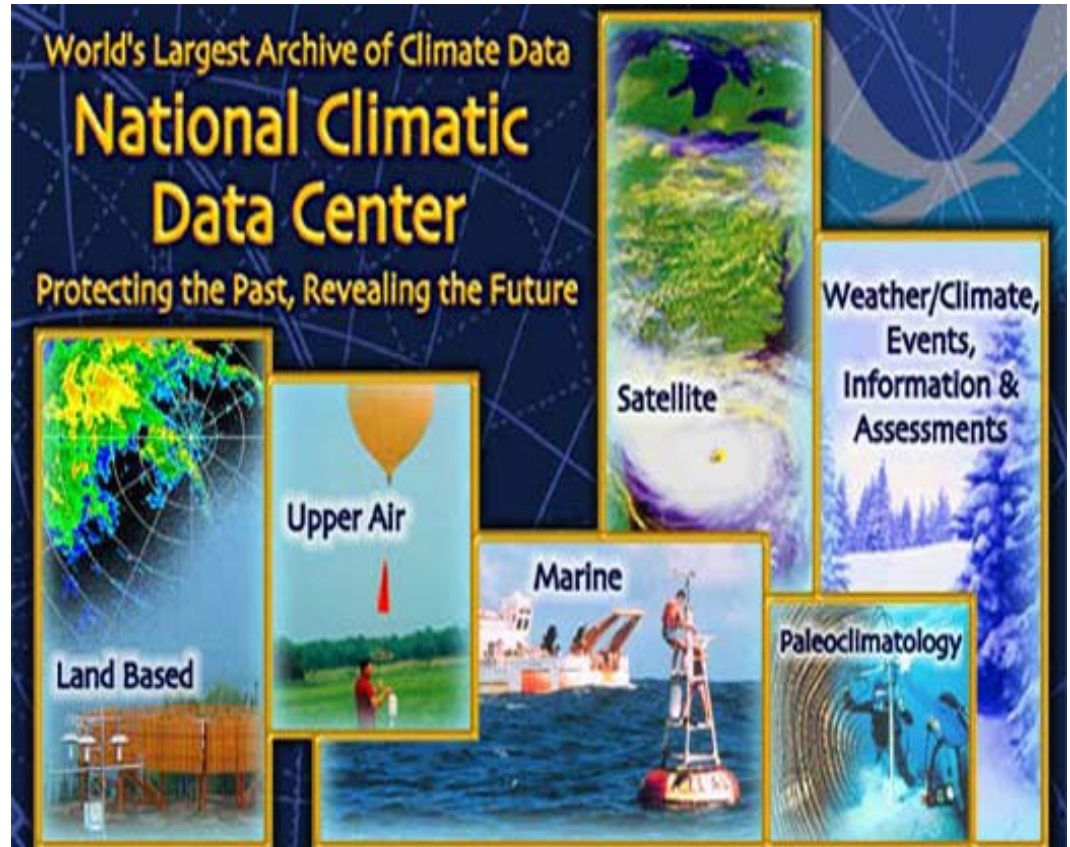


Emerging Risk: Climate Data

NOAA Satellite and Information Center

- Largest source
- Current
- Credible
- Low cost
- Accessible

www.ncdc.noaa.gov



Emerging Risk and Strategic Foresight

- **“Black Swans”**
- **“Predictable Surprises”**

Emerging Risk and Strategic Foresight

BLACK SWANS

OUT
OF THE
BLUE



Emerging Risk and Strategic Foresight

“PREDICTABLE SURPRISES”

- ERM Framework
- Change Points
- Business Environment Fault Lines

Emerging Risks and ERM

ERM Process Framework

- Establish Context
- **Identify Risks**
- Analyze/Quantify Risks
- Integrate Risks
- Assess/Prioritize Risks
- Treat/Exploit Risks
- Continually Monitor and Review

Emerging Risks and ERM

Risk Identification

- Surveys/Questionnaires
- Financial Statements
- Records and Files
- Flowcharts
- Personal Inspection
- Industry Check Lists
- Events
- Experts/Delphi Type Methods
- Environmental Scanning
- Scenario Analysis
- Trend Analysis

Emerging Risks and Strategic Foresight

Scanning:

- Map the “system” under consideration.
- Understand the history.
- Scan the environment.
 - look for changes in the context*
 - integrate the internal and external*
 - explore unfamiliar and “uninteresting” areas*
 - remember that all of the data may not exist*
- Involve outsiders and colleagues.

Emerging Risks and Strategic Foresight Scenarios (examples):

- **Significant Regulatory Changes**
- **Systems Failure**
- **Natural and Man-Made Hazards**
- **Supply Chain Disruption/Quality Issues**
- **Employee Related Issues**
- **Economic Conditions**
- **Technological Breakthroughs**
- **Strategic Business Partners**
- **Environmental Impairment**
- **Ethical Company Behavior/Fraud**

Emerging Risks and Strategic Foresight

Trends:

Understanding trends, their underlying drivers, and their implications can help us identify emerging risks and evaluate their potential significance.

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THANK YOU !

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