Third National Climate Assessment

Climate Change Impacts in the United States

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Mandate & Process for the 3rd NCA


- Prepared for Congress & the President with oversight by the US Global Change Research Program

- Directed by a 60-member Federal Advisory Committee
  - housed in NOAA, with a Technical Support Unit at the NCDC
  - harnessing 300 authors
  - orchestrating a multistage comment & review process that drew on the public, USGCRP agencies, and the National Academies
Human-induced climate change has moved firmly into the present.
Results of the 3rd NCA

• “Actionable science” showing how climate change is already affecting people where they live and work, what can be expected going forward, and what kinds of actions can reduce vulnerability and harm

• Underscores and updates findings of previous studies:
  – Global climate is changing in unnatural ways
  – Human activities are the main cause
  – Harm is happening now
  – How much more harm occurs depends on what we do

• Provides unprecedented granularity on changes and impacts by geographic regions and economic sectors
Observed U.S. Temperature Change

Temperature Change (°F) 1991-2012 vs. 1901-1960

U.S. Average

Temperature Change (°F) 1991-2012 vs. 1901-1960

Decade

-2
-1
0
1
2

1900s 20s 40s 60s 80s 00s
Projected Temperature Change

Temperature Change (°F) 2071-2099 vs 1970-1999

Lower Emissions (B1)

Higher Emissions (A2)
Observed U.S. Precipitation Change
Observed Changes in Very Heavy Precipitation

Percent change in amount falling in heaviest 1% of events

- 11% in Alaska
- 12% in Idaho
- 5% in California
- 27% in Virginia
- 37% in Illinois
- 71% in New York
- 33% in the South Central region

Legend:
- <0
- 0-9
- 10-19
- 20-29
- 30-39
- 40+
Past and Projected Changes in Global Sea Level

- **Proxy Records**
- **Tide Gauge Data**
- **Satellite Data**

Sea Level Change (feet)

- 0.66 ft
- 1 ft
- 4 ft
- 6.6 ft
Billion Dollar Weather/Climate Disasters 1980-2012
Vulnerability to Sea Level Rise
Unique Vulnerability of South Florida

[Map showing South Florida regions: Martin, Palm Beach, Broward, Miami-Dade, Monroe, West Palm Beach, Boca Raton, Fort Lauderdale, Miami]
Actions to Reduce Harm from Current and Future Climate Change

Mitigation

Adaptation
Opportunities for Connecting Science and Decision Making

• Efforts like the National Climate Assessment provide a platform of information that can support policy and planning

• There is a need for interdisciplinary and creative approaches that connect scientists and decision makers through mutual learning and shared production of relevant knowledge

• Decision-support processes should take into account the values and goals of stakeholder communities, evolving scientific information, and perceptions of risk
Importance of Regional Coordination

• Sharing best practices, learning by doing, and iterative and collaborative processes that include stakeholder involvement can help support progress

• Many opportunities exist for fostering regional cooperation on science, policy, and planning

• Southeast Florida Regional Climate Change Compact was highlighted as a model of success in the NCA
See the rest of the report at
http://nca2014.globalchange.gov