



The National Climate Assessment: New & Improved Knowledge Enlarged & Advanced Process



What's NOT New?

- No surprises in the findings but improved data, deepened understanding, and increased knowledge
- The report confirms and strengthens virtually all the findings of previous assessments
- Observations of change remain visible in all regions and sectors
- Continued careful internal and external peer-review, transparency in revisions, and expert input from a variety of scientific perspectives
- Climate-related risks continue to grow nationwide



What's New about Process?

- Inclusive, broader expertise
 - Over 240 authors
 - 60 member federal advisory committee
- Public engagement, e.g. “Request for Information”
- Focus on a sustained process
 - Supporting quadrennial reports
 - Intermediate products to bolster assessment capacity

New Risk & Decision-Support Framing

- Importance of underlying vulnerabilities
- Assessments of the state of Adaptation, Mitigation and Decision Support
- Inter-sectoral links and cascading effects
 - Water, Energy & Land
 - Biogeochemical Cycles
 - Tribal Resources
 - Land Use & Land Cover
 - Rural Communities
 - Urban Systems, Infrastructure and Vulnerability
 - Coastal Zones, Development and Ecosystems
 - Oceans and Marine Resources – new topic for NCA



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What's New about Format?

- E-book – the first major government publication of its type to be submitted this way
- Global Change Information System – focused on helping people get electronic access to data, tools and experts associated with NCA who can help with climate-related decisions
- Traceable accounts – the process & rationale the authors used in coming to conclusions and their confidence in those conclusions

New Foundational Investments

- Scenarios – a way of visualizing potential future conditions in a rigorous and consistent way
 - New regional climate trends and projections products (see scenarios.globalchange.gov)
 - Global sea level rise guidance
 - Regional land-use (ICLUS)
- Indicators – keeping track of the rate of change and the capacity to respond
- Global Change Information System
- Partnerships, e.g., NCA Network – a network of public, private and NGO partners who are engaged in the NCA on an ongoing basis (see ncanet.usgcrp.gov)



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Climate Science

- Extraordinarily rapid change at high latitudes (sea ice decrease, permafrost warming, glacier melt – 2012 set a new record for minimum sea ice extent)
- Accelerating sea level rise better documented
- Altered water cycle – groundwater depletion, floods and droughts, seasonal shifts in flood peak
- Heat in the oceans will affect the climate system for years to come
- Oceans absorbing 25% of emitted CO₂, increasing acidity
- Parsing out human contributions to global change; attribution of some extreme events to human contributions

Storminess

- Increase in the overall strength of hurricanes and in the number of strong (Category 4 and 5) hurricanes in the North Atlantic since the early 1980s.
- Intensity of the strongest hurricanes is projected to continue to increase as the oceans continue to warm.
- Winter storms have increased slightly in frequency and intensity, and their tracks have shifted northward over the U.S.



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Increased Documentation of Impacts

- Impacts are now visible in every region
- Diminished ecosystem services, e.g. reduced ability of barrier islands and wetlands to buffer storm impacts
- Reinforced connections between climate and human health, e.g., air pollution, heat stress, disease vectors
- Warming and ocean acidification more clearly documented, increasing concern about the interactions of these issues



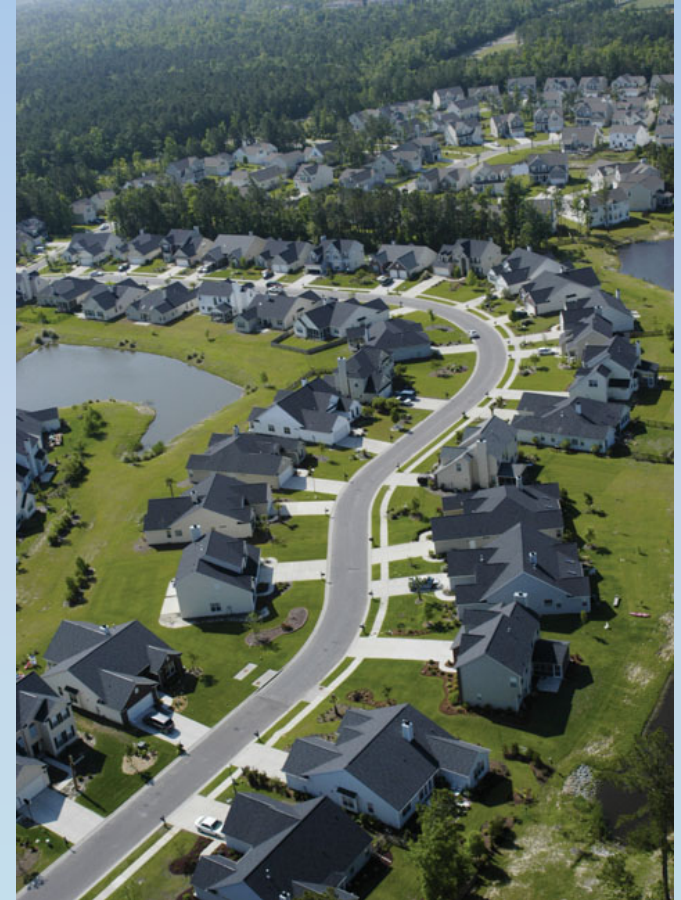
Increased Documentation of Impacts

- Implications for groundwater – shifts in recharge locations and rates, shifts from dependence on surface water to groundwater in prolonged drought
- Connections between large-scale wildfire, climate change, and drought
- Impacts of extreme precipitation, particularly in the NE, where there has been a 70% increase – huge infrastructure implications



Outline for Third NCA Report

- Letter to the American People
- Executive Summary: Report Findings
- Introduction
- Our Changing Climate
- Sectors & Sectoral Cross-cuts
- Regions & Biogeographical Cross-cuts
- Responses
 - Decision Support
 - Mitigation
 - Adaptation
- Agenda for Climate Change Science
- The NCA Long-term Process
- Appendices
 - Commonly Asked Questions
 - Expanded Climate Science Info



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Regions & Biogeographical Cross-Cuts

Oceans and
Marine
Resources



Coasts,
Development,
and Ecosystems



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