

Interagency Group on Integrative Modeling

CMIP5 Briefing

U.S. Global Change Research Program

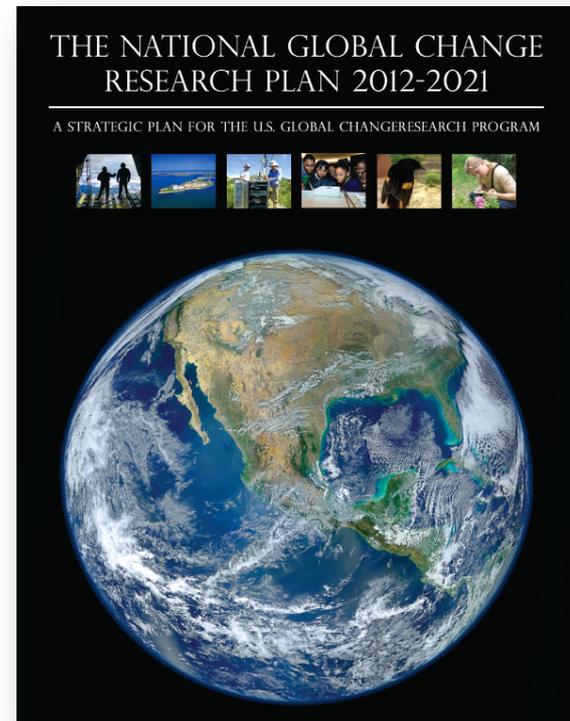


United States
Global Change
Research Program



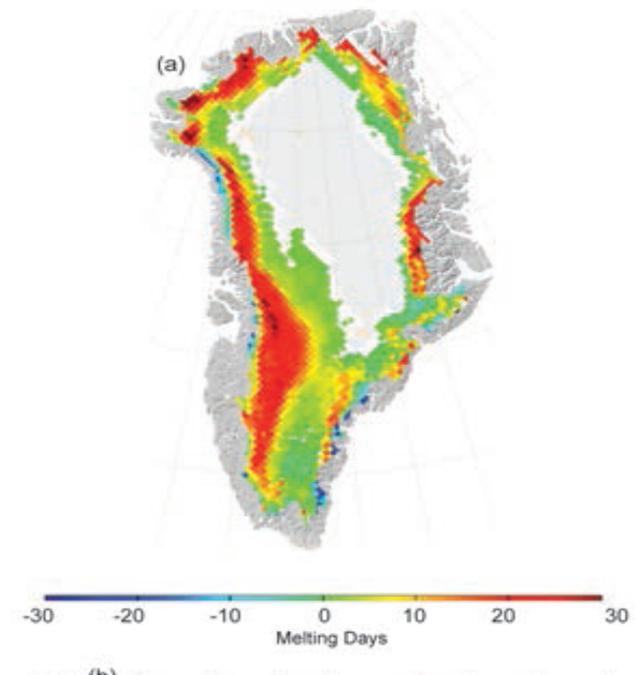
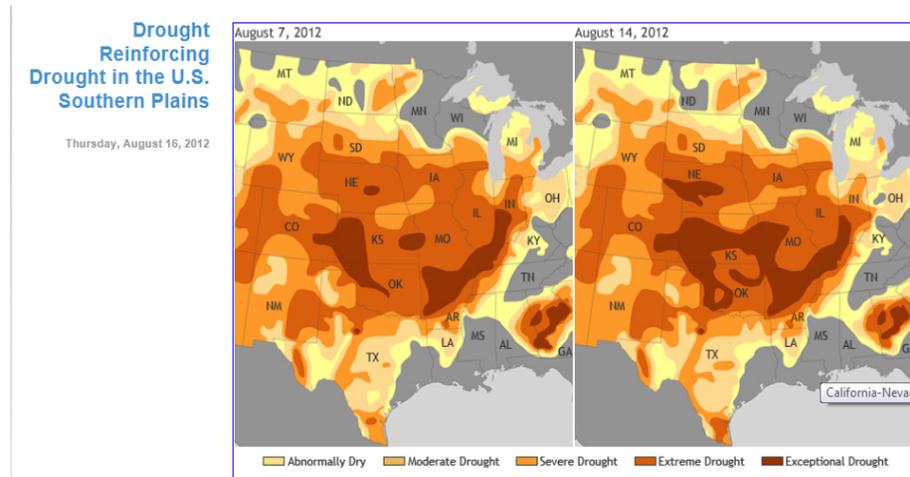
USGCRP – Strategic Plan

- **Goal 1: Advance Science**
- **Goal 2: Inform Decisions**
- **Goal 3: Conduct Sustained Assessments**
- **Goal 4: Communicate and Educate**
- **Crosscut: Provide knowledge on scales appropriate for decision making**
- **Cross-cut: Incorporate social and biological sciences**
- **Cross-cut: enable response to global change via iterative risk management**



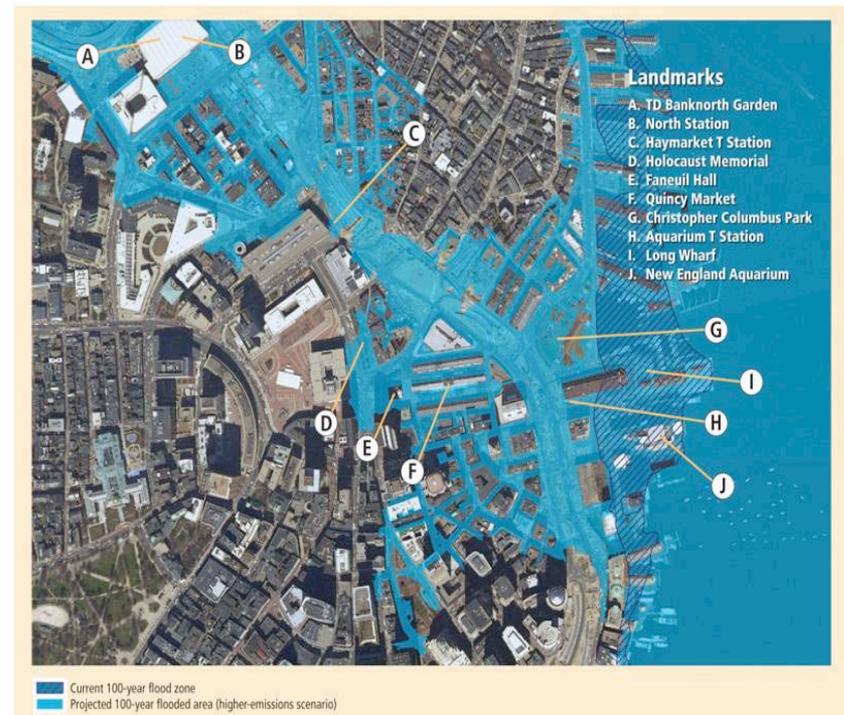
Theme 1: Extremes, Thresholds and Tipping Points

- Project trends in extremes
 - Observations, research & modeling
 - Understand the role of natural and human processes
- Characterize potential thresholds and tipping points
 - physical, biological and human systems



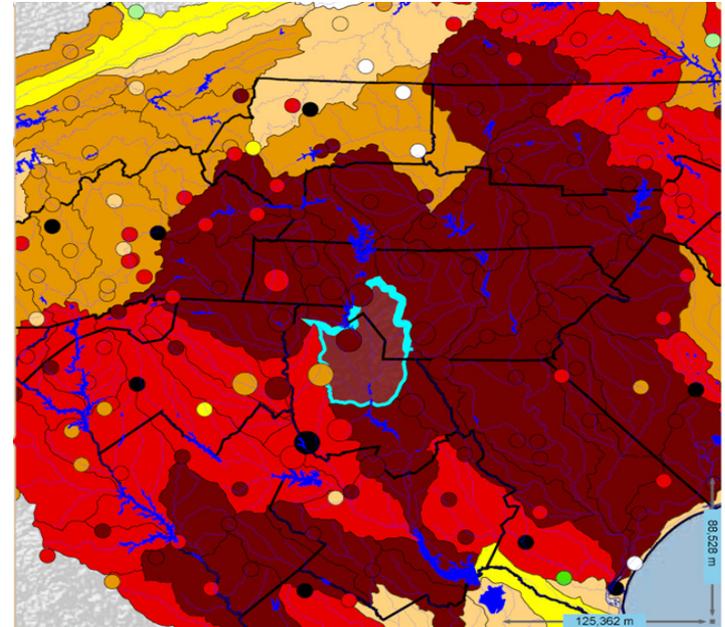
Theme 2: Integrated Research on Coupled Earth and Human Systems

- Develop scenarios that better reflect reality
 - combine societal, biological and physical aspects of global change
- Exploit multi-source data
 - Physical/biological
 - socioeconomic
- Improve decision frameworks
 - Trends, extremes
 - Uncertainty
 - risk analysis



Theme 3: Actionable Science for Informed Policy Making and Management

- Science basis for Federal and regional agency adaptation planning
- Science tools useful for managers and policy makers, and for science translators
- Relevance to decision sciences
- Assess adaptation and mitigation decisions



North and South Carolina drought conditions, ranging from incipient (light) to extreme(dark)



IGIM role in USGCRP

Coordination and collaboration

- Leverage multi-agency capabilities to efficiently and cost-effectively advance individual agency goals: science, projections, impacts, risk
- Advance climate and earth system modeling and data infrastructure capabilities with collaboration instruments: projections, IA, IAV, risk

Challenges

- Advancing beyond CMIP5: benchmarks, metrics, socioeconomic,...
- Advancing confidence in projections: CMIP3, CMIP5, CMIP6
- Identifying unifying themes of interest across IGIM for action
 - Higher resolution and uncertainty characterization – striking the balance
 - Water, carbon, etc.
 - Continuum from weekly predictions to centennial projections – theory and modeling
 - Response to the NRC Report from IGIM and the modeling centers



Path forward

- **TODAY**
 - CMIP5 briefing: results, applications, success stories, failures, misgivings, things to fix, path forward
- **Next 3 years**
 - Setting goals and planning for AR6 and CMIP6
 - **Entraining input from end users – model linkages...**
 - **Topical barriers to achieving goals, e.g., water cycle**
 - **Organizing federal goals involving major modeling centers and data infrastructure platforms**

