
U.S. Global Change Research Program Advancing Science to Inform Decisions

Mike Kuperberg, Executive Director, U.S. Global Change Research Program

Innovations in Climate Resilience
29 March 2023

Who is this guy & why is he here?



Mike Kuperberg

- Ecologist and toxicologist by training
- Educated at Florida State and Florida A&M universities
- Research faculty at Florida State University
- Came to DC to work as a Program Manager for the U.S. Department of Energy's Office of Science
- Currently Executive Director for the U.S. Global Change Research Program (USGCRP)

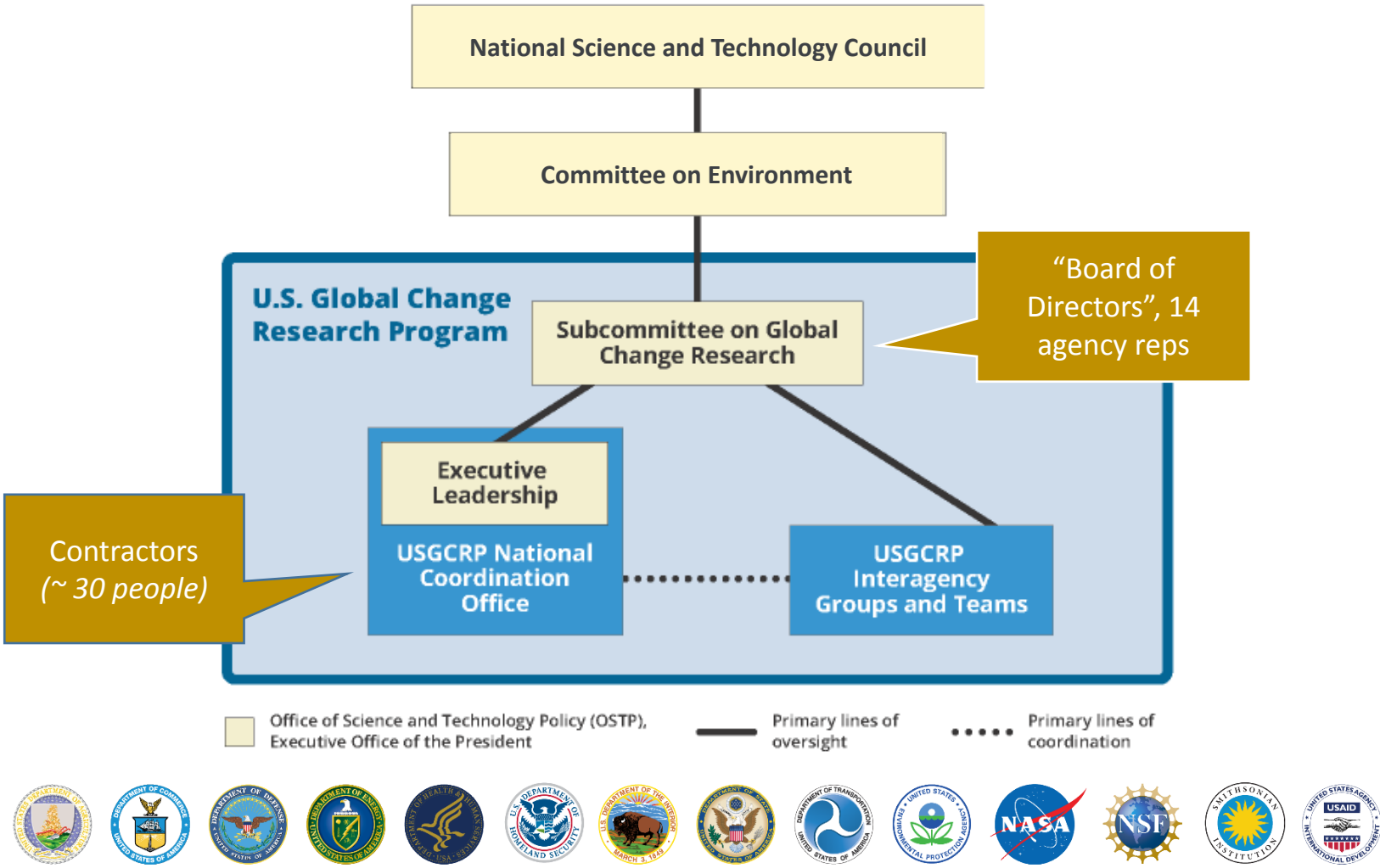
About USGCRP

- Began as a Presidential Initiative in 1989
- Mandated by Congress in the GCRA
- 14 member agencies
- FY2022 budget crosscut approx. \$3.75 billion
- Interagency Distributed Cost Budget supports the National Coordination Office (NCO) and activities of the organization

“[A] comprehensive and integrated United States research program which will assist the Nation and the world to understand, assess, predict and respond to human-induced and natural processes of global change”

(P.L. 101-606)

USGCRP oversight & coordination



FY2021 USGCRP budget cross-cut

Funding amounts are shown in millions of dollars (\$M) and are rounded to the nearest millions (totals reflect the rounded sum of the unrounded agency amounts).

Agency	FY 2020 Enacted (\$M)	FY 2021 Enacted (\$M)	FY 2022 President's Budget (\$M)
Department of Agriculture	111	128	405
Department of Commerce	306	444	731
Department of Energy	256	305	366
Department of Health and Human Services	10	19	154
Department of the Interior	38	207	461
Department of Transportation	0	1	52
Environmental Protection Agency	18	20	51
National Aeronautics and Space Administration	1,469	1,617	1,827
National Science Foundation	246	521	762
Smithsonian Institution	8	8	13
TOTAL (USGCRP)	2,461	3,270	4,822

USGCRP interagency groups

Approximately 400 individuals participate in USGCRP groups

- Tuning in to teleconferences
- Participating in assessment development
- Active membership in interagency groups, **open to all federal agencies**

Current Interagency Groups	
Carbon Cycle	International Activities
Observations	Sustained Assessment
Integrated Modeling	Indicators
Human Health	Integrated Water Cycle
Social Science	Adaptation and Resilience
Coasts	Climate Engagement and Capacity Building

National Global Change Research Plan

“[The Program] shall develop a 10-year National Global Change Research Plan for implementation of the Program” (GCRA)

- New decadal plan (2022-2031) released in December 2022
- Four Plan Pillars:
 - Advancing Science
 - Engaging the Nation
 - Informing Decisions
 - Collaborating Internationally



Our Changing Planet

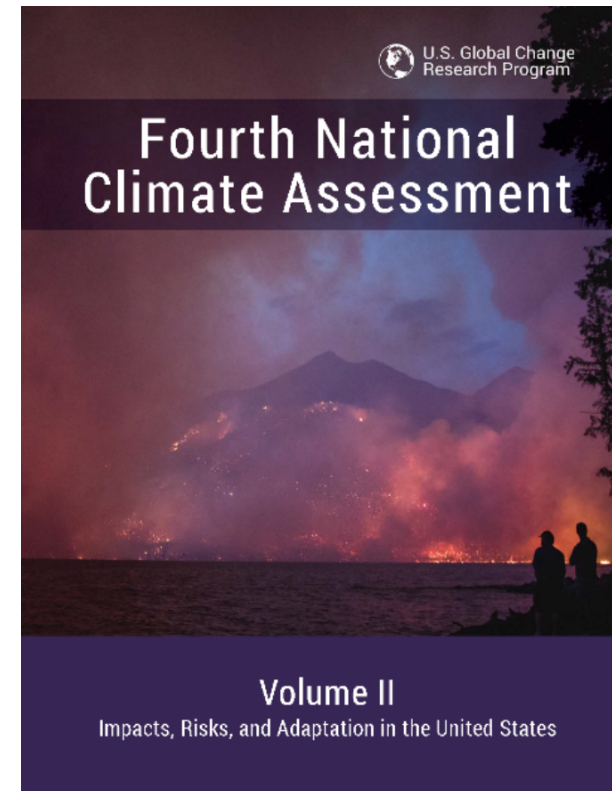
“Each year at the time of submission to the Congress of the President's budget [the Program] shall submit to the Congress a report on the activities conducted by the Committee” (GCRA)

- *Our Changing Planet*, USGCRP’s annual report to Congress, includes:
 - Summary of the program’s achievements for the past year
 - Priorities for future global change research
 - Budget cross-cut



The National Climate Assessment

- *“Not less frequently than every 4 years [the Program] shall prepare and submit to the President and Congress an assessment which:*
 - *Integrates, evaluates, and interprets the findings [of the Program] and discusses the scientific uncertainties associated with such findings;*
 - *Analyzes the effects of global change on the natural environment, agriculture, energy production and use, land and water resources, transportation, human health and welfare, human social systems, and biological diversity;*
 - *Analyzes current trends in global change, both human-induced and natural, and projects major trends for the subsequent 25 to 100 years.”*

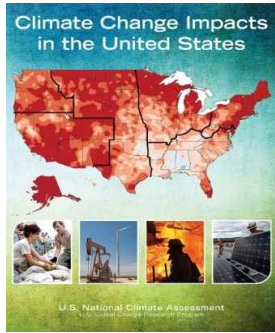


NCA4 (2018)

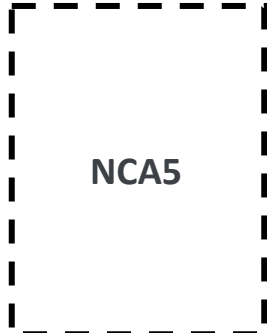
National Climate Assessments



2001

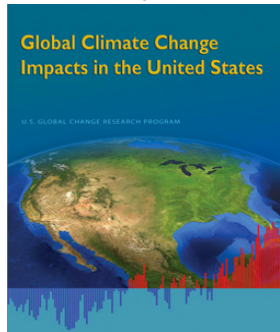


2014

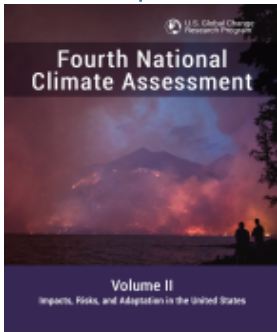


2023

2009



2018



NCA5 chapters

- Overview
 - Climate Trends
 - Earth System Processes
 - Water
 - Energy
 - Land Cover and Land Use
 - Forests
 - Ecosystems and Biodiversity
 - Coastal Effects
 - Oceans and Marine Resources
 - Agriculture
 - Built Environment
 - Transportation
 - Air Quality
 - Human Health
 - Tribes and Indigenous Peoples
 - International
 - Complex Systems
 - **Economics**
 - **Social Systems and Justice**
 - Northeast
 - Southeast
 - U.S. Caribbean
 - Midwest
 - Northern Great Plains
 - Southern Great Plains
 - Northwest
 - Southwest
 - Alaska
 - Hawai'i and U.S.-Affiliated Pacific Islands
 - Adaptation
 - Mitigation
- Focus on...
- **Compound Extreme Events**
 - **Western Wildfires**
 - **COVID-19**
 - **Supply Chains**
 - **Blue Carbon**
- Appendices
- Process
 - IQA
 - Data Tools
 - **Indicators**

*New chapters or features highlighted in blue



What is new: process and structure

- New chapters and features
 - 4 new chapters
 - Focus boxes
 - Additional support tools
- More public engagement
- Early emphasis on report figures and a public call for art
- Even higher level of documentation
- Improving inclusion and accessibility
- Improving functionality of NCA5 website



New knowledge informing NCA5

- **Scientific Advances:** improved understanding of Earth system process, like how sensitive the climate is to greenhouse gas concentrations and how climate change is making extreme weather events more frequent and more severe.
- **Understanding People:** greater understanding of how people are experiencing climate change, including how many communities are experiencing disproportionate impacts or where climate change is exacerbating existing inequities.
- **Practical Examples:** strides in the social sciences and increased documentation of communities implementing proven climate solutions to reduce the worst harms from climate change and protect the things they value most.

International context of the GCRA

- Promote international cooperation on global change research
- Coordinate U.S. activities with the programs of other nations and international organizations
- Involve developing country scientists and decision-makers in this research while also building capacity abroad in the realm of global change science

To these ends, USGCRP develops international partnerships that advance program priorities, link to program areas, and leverage investments by other entities

Recent priority topics of interest

- Expanding USGCRP participation and membership
 - Lots of interest from non-member agencies
 - DHS became the 14th member in February 2023
- Fulfilling USGCRP's full global change mandate
 - National Nature Assessment (E.O. 14072)
- Climate information and climate services
 - Climate information and validation
 - Emerging Federal climate services framework
- Climate security
 - Collaboration with intelligence community
 - Linkages across the government

Thank you

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Connect with us:



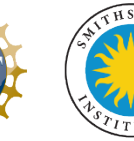
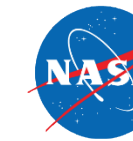
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