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

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Biological and Environmental Research Advisory Committee

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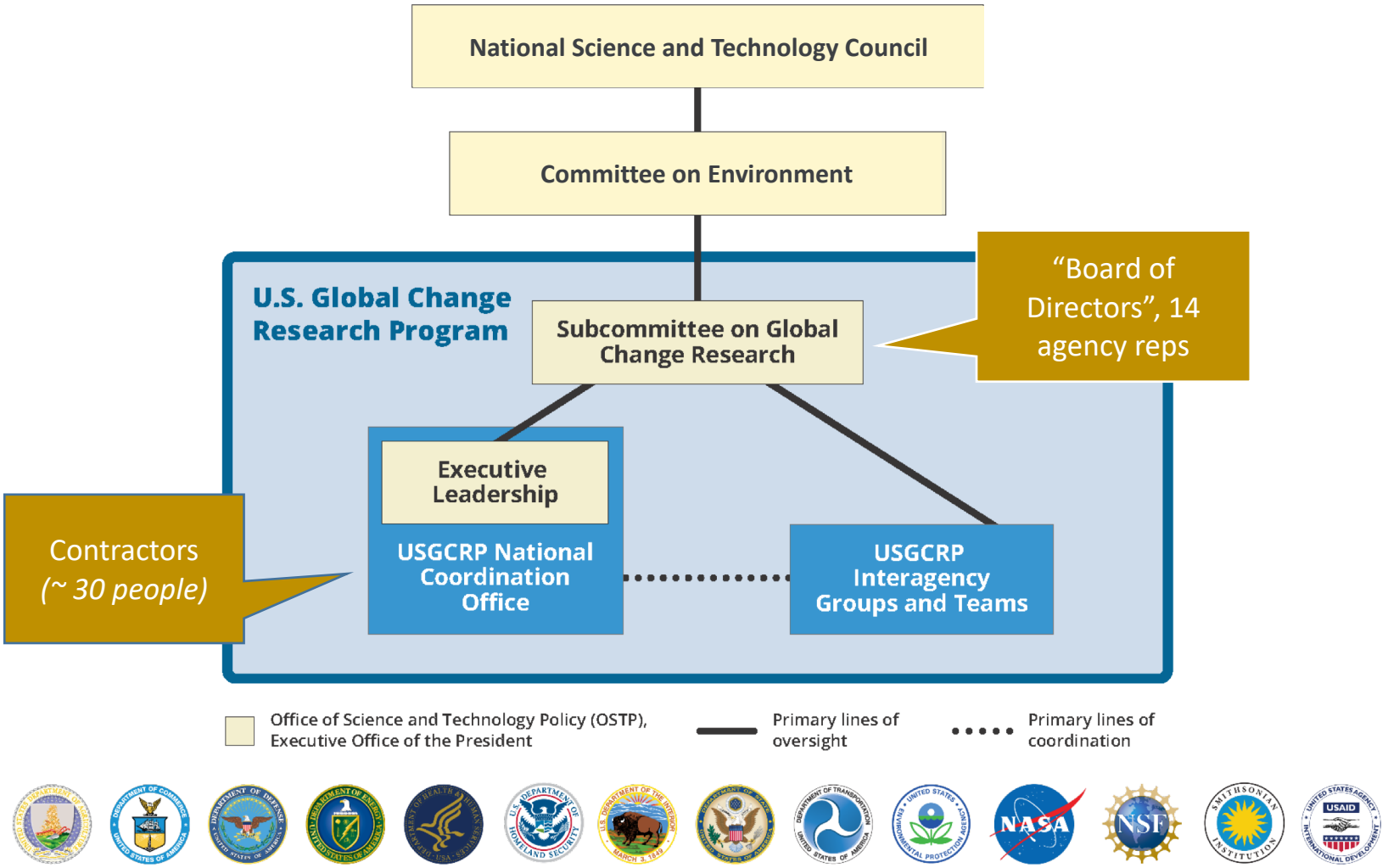
About USGCRP

- 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 2021 Enacted (\$M)	FY 2022 Enacted (\$M)	FY 2023 President's Budget (\$M)
Department of Agriculture	118	140	302
Department of Commerce	445	483	730
Department of Energy	305	354	383
Department of Health and Human Services	29	29	261
Department of the Interior	207	232	375
Department of Transportation	1	2	2
Department of State	0	0	0
Environmental Protection Agency	20	19	51
National Aeronautics and Space Administration	1608	1750	1966
National Science Foundation	660	737	1055
Smithsonian Institution	8	8	14
U.S. Agency for International Development	0	0	0
Total	3,401	3,754	5,139

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

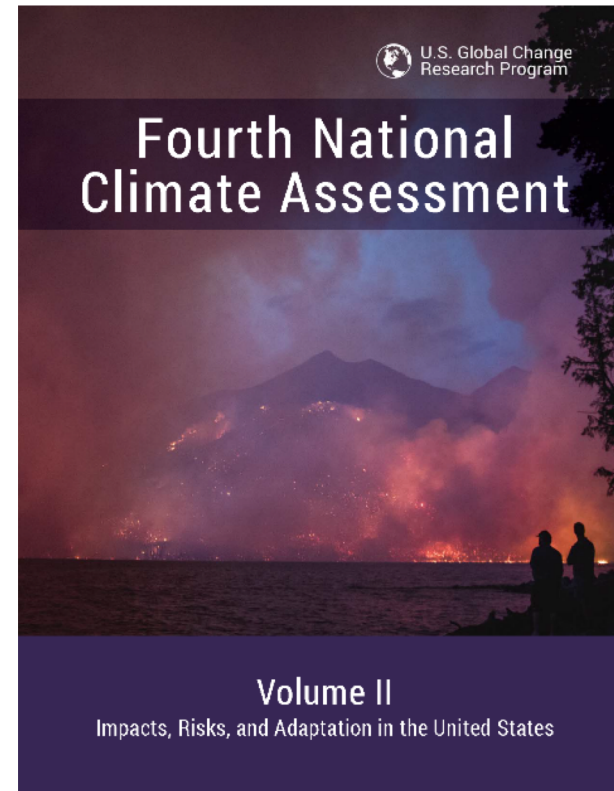
“Each year at the time of submission to the Congress of the President's budget [the Program] shall submit to the Congress a report on the activities conducted by the Committee” (GCRA)

- *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)

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

Circling back to the Strategic Plan



USGCRP 2022–2031 Strategic Plan

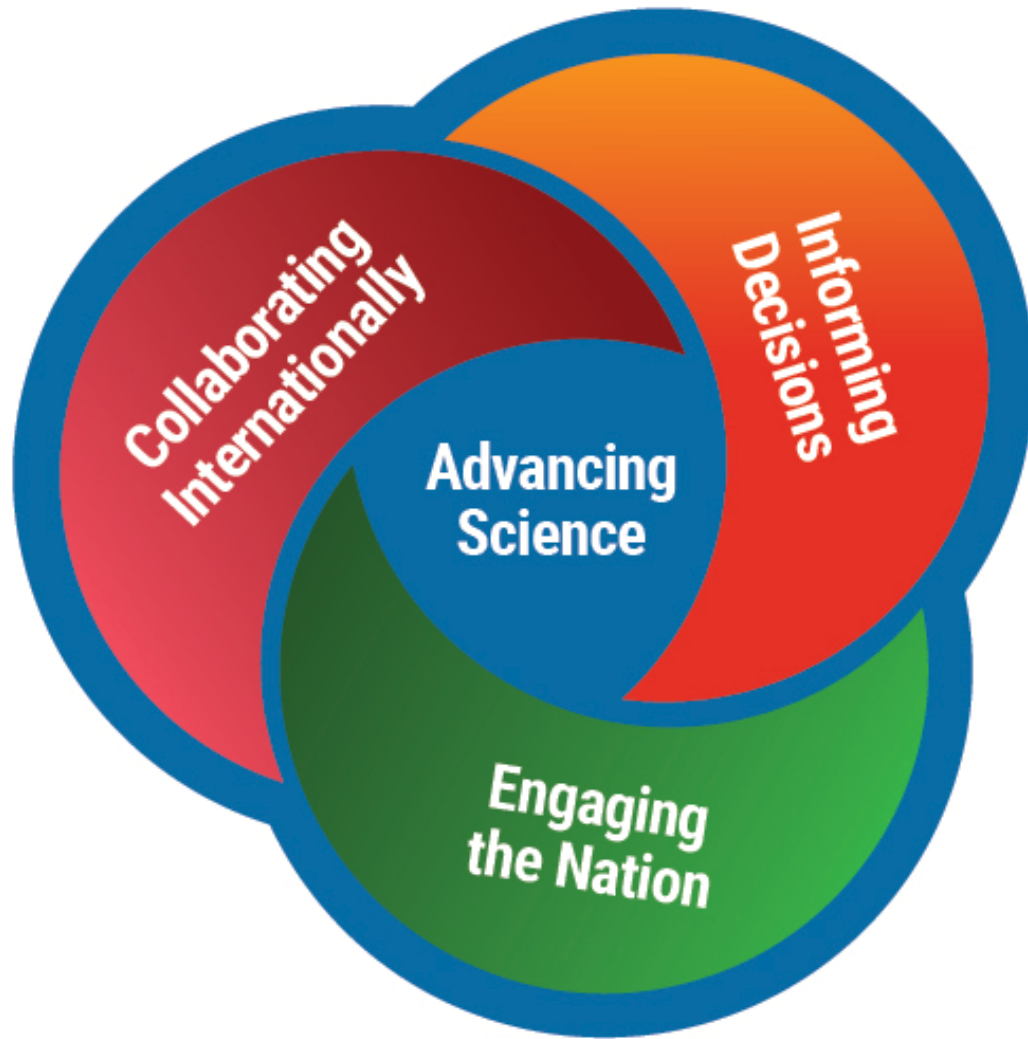
Vision

A Nation, globally engaged and guided by science, meeting the challenges of climate and global change for the benefit of all.

Mission

To empower the Nation and the world to anticipate and respond to urgent risks of climate and global change, by creating and providing accessible, usable knowledge.





USGCRP 2022–2031 Strategic Plan

Pillars of the 2022–2031 Decadal Strategic Plan

- Advancing Science
- Engaging the Nation
- Informing Decisions
- Collaborating Internationally

Pillar 1. Advancing Science

Advance scientific knowledge of interconnected natural and human systems and risks to society from global change.

Earth System Change: Observations, Modeling, Data Access and Management

- **Extreme Events:** Advance understanding of the physical and social processes that drive the nature and outcomes of extreme events.
- **Tipping Points:** Improve understanding of the potential for abrupt, widespread changes in physical, natural, and human systems.
- **Biodiversity:** Monitor and assess the relationships among climate and global change and the distribution, productivity, and diversity of species.
- **Land and ocean change:** Understand trends in and future evolution of human-driven changes to Earth's land and ocean.
- **Climate sensitivity and carbon cycle feedbacks:** Reduce uncertainties in estimates of future climate system behavior.
- **Uncertainty:** Advance quantification of uncertainty in Earth observations and modeling.



Pillar 1. Advancing Science (cont.)

Advance scientific knowledge of interconnected natural and human systems and risks to society from global change.

Risks to Coupled Human–Natural Systems: Observations, Modeling and Analysis

- ***Complex, adaptive, interconnected systems:*** Understand how the dynamics of coupled human-natural systems affect vulnerability and risk.
- ***Global change impacts, risks, and vulnerability:*** Understand dynamics affecting the vulnerability of human-natural systems to global change impacts.
- ***Social drivers, impacts, and responses:*** Use social science insights and methods to understand global change risks, opportunities to build resilience, and effective delivery of global change information.
- ***Response measures:*** Evaluate the effectiveness, social context, and consequences of actions to manage climate and global change risks.



Pillar 2. Engaging the Nation

Enhance the Nation's ability to understand and respond to global change by expanding participation in the Federal research enterprise.

- **Organizations:** Expand engagement with organizations that develop and use global change information to identify science needs.
- **Frontline communities:** Proactively engage with and learn from communities that face higher risks from climate and global change and may have lower capacity to adapt.
- **Workforce:** Advance development of a more inclusive scientific workforce.
- **Research design:** Enhance user participation in the research design process to improve information on critical risks for decision support.



Pillar 3. Informing Decisions

Provide accessible, usable information to inform decisions on mitigation, adaptation, and resilience.

- ***Data and tools:*** Enhance usability of and public capacity to use Federal data, information, and analysis tools for decision-making.
- ***Scientific assessment:*** Assess global change science and risks to society to support decision-making.
- ***Engagement to improve decision support:*** Enhance user engagement in the research design process to ensure that key risks are addressed, and information meets the needs of decision-makers.
- ***Indigenous Knowledge:*** Elevate Indigenous Knowledge in the global change research enterprise.
- ***Evaluation:*** Measure the effectiveness of assessments and decision-support efforts.

Pillar 4. Collaborating Internationally

Build global capacity to respond to global change through international cooperation and collaboration.

- **Assessments:** Participate in developing international scientific consensus on global change.
- **Enhancing collaborations:** Enhance international science collaborations that strengthen global capacity to understand and respond to Earth system change.
- **Capacity strengthening:** Share practices that improve the capacity of developing countries to understand, assess, and respond to global change risks.
- **Informing policy:** Provide relevant observations, science, and information to support international policymaking.

New in This Plan

- Enhancing “global change” in the U.S. Global Change Research Program
- Advancing knowledge of coupled human–natural systems
- Diversity, equity, inclusion, justice, and accessibility as a cross-cutting theme
- Enhancing focus on international collaboration

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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