

Federal Government Science to Combat, Mitigate and Adapt to Climate Change

for the President's Council of Advisors on
Science and Technology

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October 18, 2021

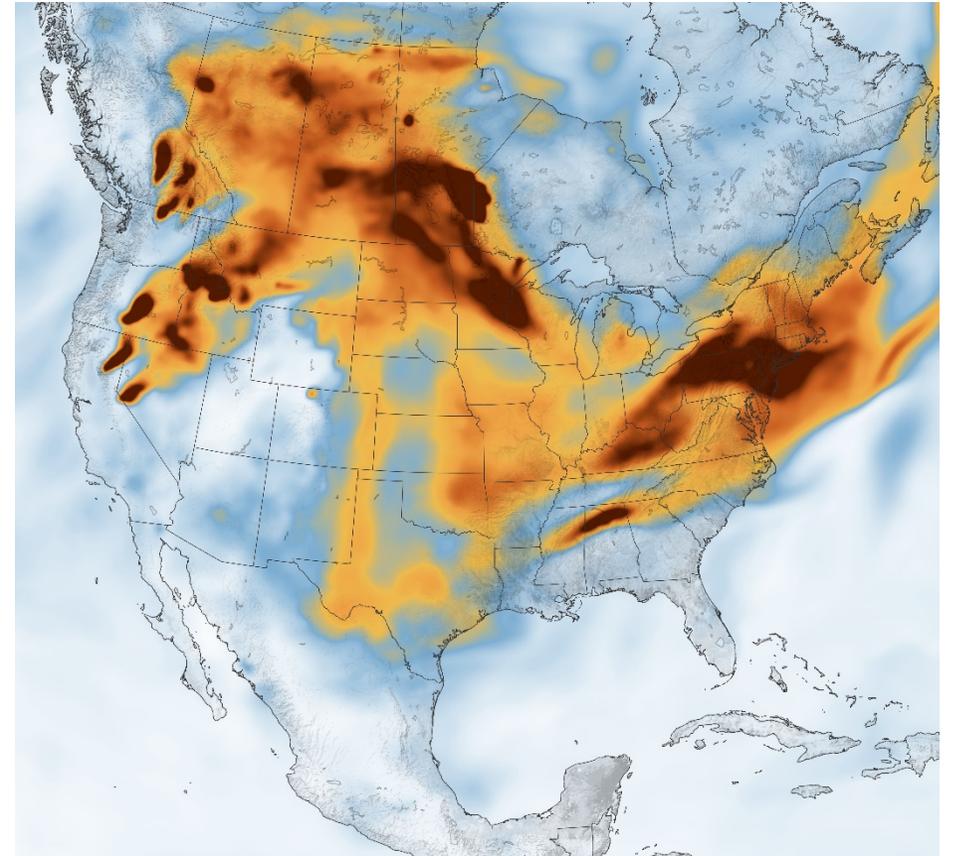


President Biden to Eric Lander

“Climate change represents an existential threat that requires bold and urgent action. But at the same time, the necessity of solving it also presents us with an extraordinary opportunity to make groundbreaking investments in our infrastructure, enhance America’s resilience, promote environmental justice, and create new cutting-edge industries and millions of good-paying jobs that will advance American leadership for generations to come.”



Black Carbon Column Mass Density July 21, 2021



From NASA Earth Observatory

Climate Science at OSTP

- **We organize & support the enterprise to understand**
 - How the climate system works and is changing
 - What impacts climate change is having
 - How can we avoid the unmanageable? (mitigation)
 - How can we manage the unavoidable? (adaptation).
- **We share this knowledge to inform understanding and action**
- **We use this knowledge to inform policy and Federal action**



U.S. Global Change Research Program

- Founded by law in 1990, USGCRP is a confederation of 13 Federal agencies mandated to “assist the Nation and the world to understand, assess, predict, and respond to human-induced and natural processes of global change”
- Coordinates **research**
- Delivers the **National Climate Assessment**
- Coordinates U.S. participation in the **IPCC**



Accelerating Climate Science and Actionable Information

U.S. Global Change Research Program

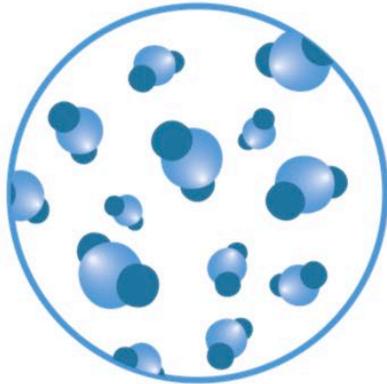
- I challenged USGCRP to push the frontiers in:
 1. Improving our understanding of the Earth system and focus on changes that pose the greatest risks and opportunities to society
 2. Integrating climate science into operations and delivering climate knowledge to the world



IPCC Sixth Assessment Report

OBSERVED

CO₂
concentration



Highest

in at least

2 million years

Sea level
rise



Fastest rates

in at least

3000 years

Arctic sea ice
area



Lowest level

in at least

1000 years

Glaciers
retreat



Unprecedented

in at least

2000 years



IPCC Sixth Assessment Report

PROJECTED



Extreme heat

More frequent

More intense



Heavy rainfall

More frequent

More intense



Drought

Increase in some
regions



Fire weather

More frequent



Ocean

Warming
Acidifying
Losing oxygen

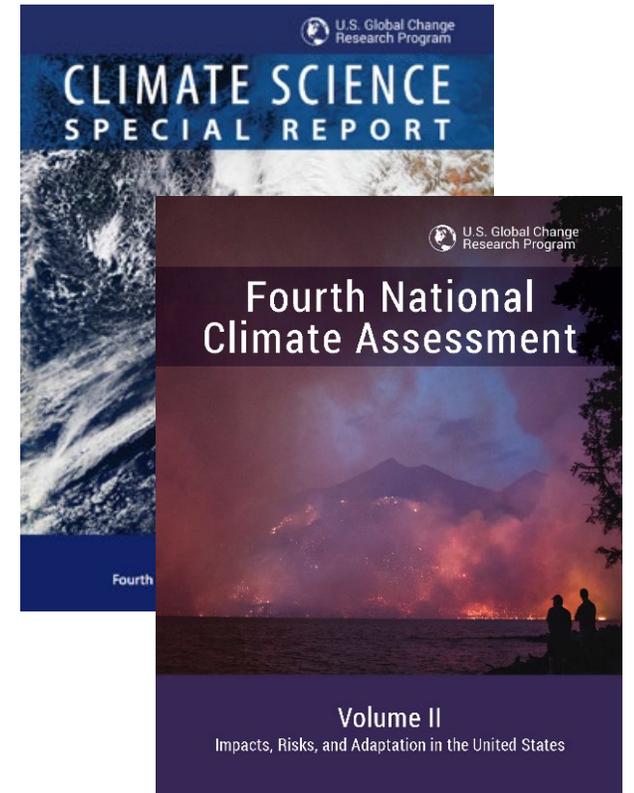


Providing Climate Information to the Nation

The National Climate Assessment

National Climate Assessment -- scientific assessment of observed and projected climate change and the impacts on humans and the environment.

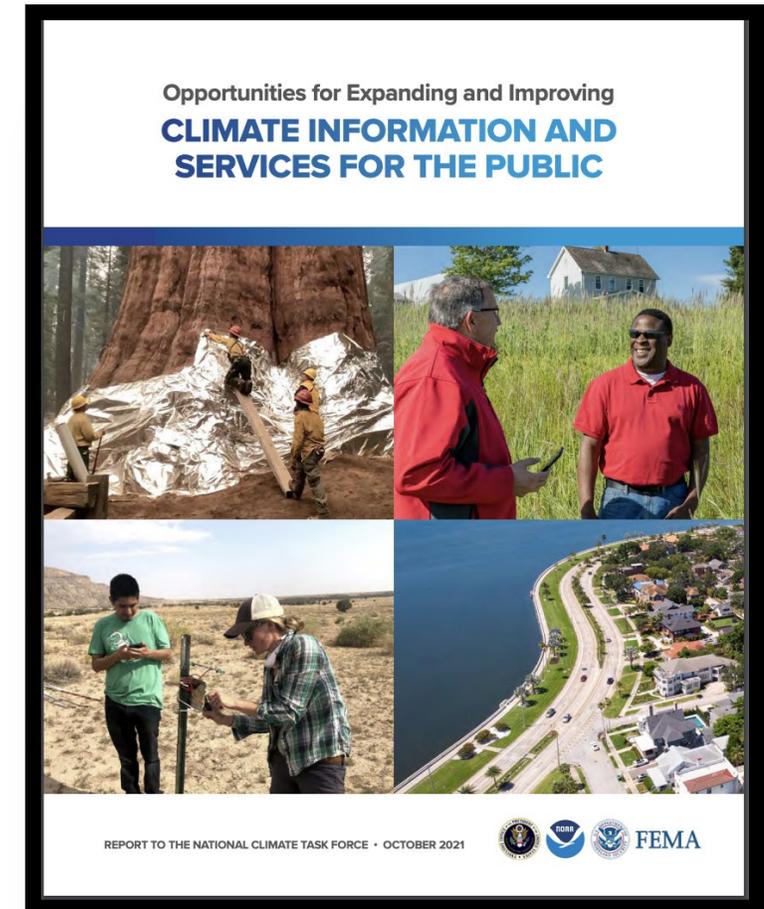
NCA5 is underway now, due out in 2023.



Useable Climate Information and Services for the Public

211-d Report lays out opportunities to:

- Focus climate services on the challenges that pose greatest risks and opportunities to society
- Foster interagency coordination and strategic public-private partnerships to develop, deliver and continually advance climate services
- Enhance the usability, translation and relevance of climate services to support use by all Americans
- Strengthen core science capabilities needed to expand and improve climate services



Climate Resilience Information System

USGCRP is coordinating an interagency effort to provide non-experts with access to a full suite of authoritative information produced by the U.S. research enterprise about observed and projected changes.



Emerging climate resilience landscape

- Integrating resilience into Federal agency efforts
 - 20+ Federal agency Climate Adaptation & Resilience Plans released October 7
- Providing funding/incentives and addressing financial risk
 - EO on Climate-Related Financial Risk: strengthens resilience of financial system, improves disclosure of risks, reinstates Federal Flood Risk Management Standard
- Addressing current and emerging climate-related hazards
 - Announcement of \$5 billion in pre-disaster funding for communities, states, and tribal governments
- Advancing useable science to inform resilience decisions
 - 2 major roadmaps for Federal efforts were released October 12



Budgetary context for climate

“The President’s FY22 Budget Request includes more than \$36 billion of investments to combat climate change, including investments in resilience and clean energy, enhancing U.S. competitiveness, and putting America on a path to achieve net-zero emissions no later than 2050—all while supporting communities that have been left behind.”



Climate Science connects with multiple other, related efforts

- Earth observations
- Biodiversity & conservation
- Ocean research and policy
- Scientific integrity
- Resilience
- Arctic research
- Environmental justice
- Natural resource accounting

OSTP's Energy Division – the pathway to 2050



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Thank you!

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