



EDUCATION SESSION

CLIMATE CHANGE RISKS

June 13, 2023

TOPIC A

CLIMATE-RELATED FINANCIAL REPORTING PROJECT

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HIGH RISK: LIMITING THE FEDERAL GOVERNMENT'S FISCAL EXPOSURE BY BETTER MANAGING CLIMATE CHANGE RISKS

June 13, 2023

**Federal Accounting Standards Advisory Board Meeting
Climate-Related Financial Risk Education Panel Discussion**

**Joe Thompson, Assistant Director
Natural Resources and Environment Team
U.S. Government Accountability Office**

Added to High Risk List in 2013

Limiting the Federal Government's Fiscal Exposure by Better Managing Climate Change Risks

To reduce its fiscal exposure, the federal government needs a cohesive strategic approach with strong leadership and the authority to manage risks across the entire range of related federal activities.

Why Area Is High Risk

Numerous studies have concluded that climate change poses risks to many environmental and economic systems and creates a significant fiscal risk to the federal government. For example, according to the November 2018

Limiting the Federal Government's Fiscal Exposure by Better Managing Climate Change Risks



The rising number of natural disasters and increasing reliance on federal assistance is a key source of federal fiscal exposure. Since 2005, federal funding for disaster assistance is approaching half a trillion dollars (about \$430

Limiting the Federal Government's Fiscal Exposure By Better Managing Climate Change Risks

Limiting the Federal Government's Fiscal Exposure by Better Managing Climate Change Risks



Rating changes since last update

The rating for Monitoring increased from not met to partially met.

Criteria still needing attention

Leadership Commitment, Capacity, Action Plan, Monitoring, and Demonstrated Progress

GAO's High Risk Series: Limiting the Federal Government's Fiscal Exposure by Better Managing Climate Change Risks

Technical Assistance to Federal, Tribal, State, Local, and Private-Sector Decision Makers



Federal Insurance Programs



Rating changes since last update

The rating for Monitoring increased from not met to partially met.

Criteria still needing attention

Leadership Commitment, Capacity, Action Plan, and Demonstrated Progress

Disaster Aid and Resilience



Federal Government as Leader of National Climate Strategic Plan



Federal Government as Property Owner



Rating changes since last update

The ratings for Capacity and Monitoring increased from not met to partially met.

Criteria still needing attention

Leadership Commitment, Capacity, Action Plan, Monitoring, and Demonstrated Progress

Disaster Resilience Framework



- Framework organized around 3 principles—information, integration, and incentives—and a series of questions.
- Framework principles can help:
 - Officials that manage federal agencies/programs consider actions they might take to increase resilience to natural hazards.
 - Identify gaps in existing federal efforts or analyze any type of existing federal effort.

Federal Climate-Related Financial Risks – Information and Process Resources

- **OMB Analytical Perspectives and papers and NCA5 economics chapter**

10. BUDGET EXPOSURE TO INCREASED COSTS AND
LOST REVENUE DUE TO CLIMATE CHANGE

The climate crisis poses a serious threat to the United States economy and human welfare, with a narrowing This assessment is complementary to the analysis directed by Section 6(a) of Executive Order 14030. “[T]

- **TCFD –reporting process for companies, adaptable for federal use?**



Task Force on Climate-related Financial
Disclosures

- **Ongoing GAO work** evaluating organizational arrangement to use information on federal climate-related financial risks to make climate change adaptation investment decisions.

The Fifth National Climate Assessment for FASAB

Dr. Fred Lipschultz
USGCRP Senior Scientist (Contractor)

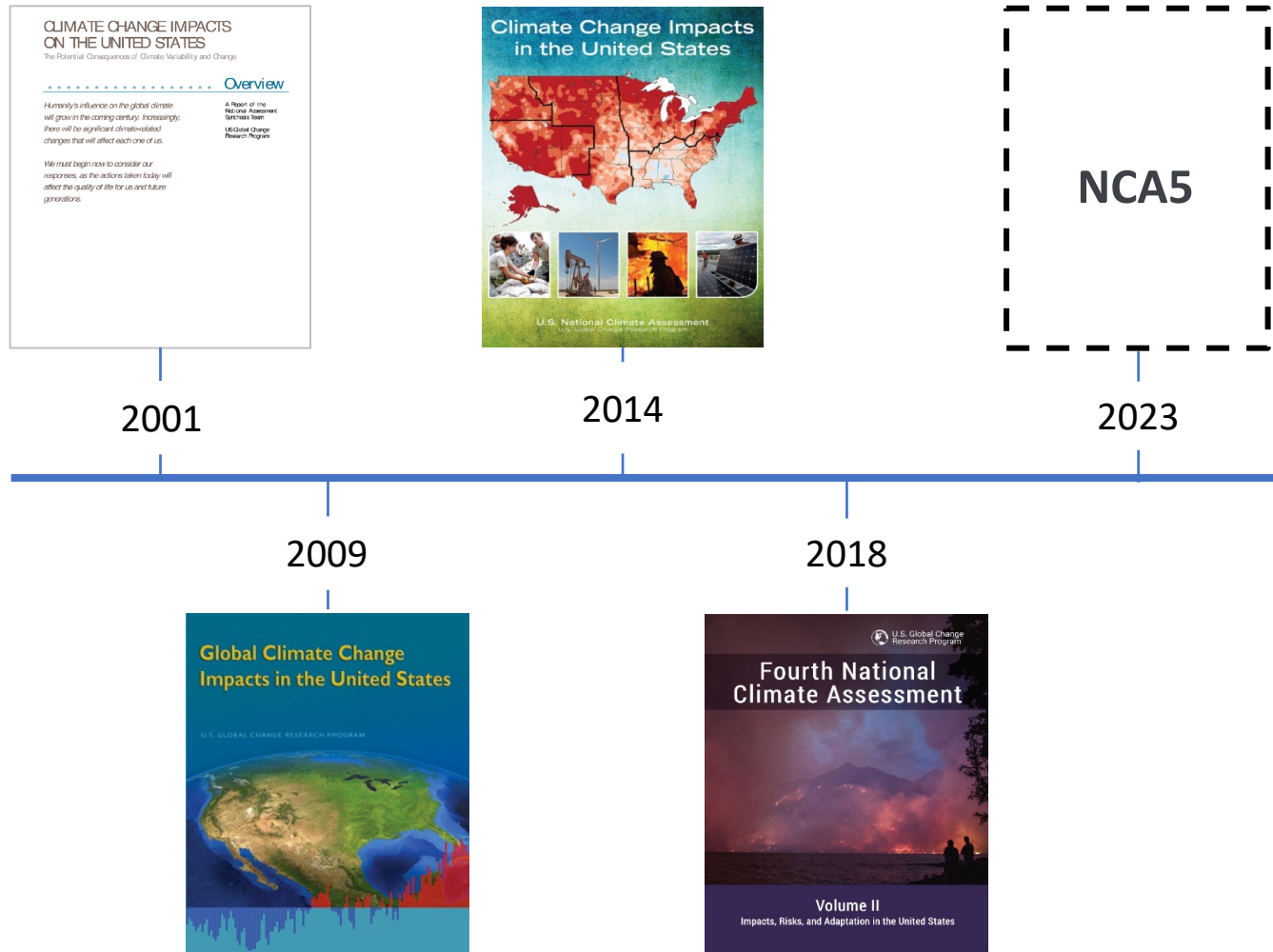
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U.S. Global Change Research Program

- The U.S. Global Change Research Program (USGCRP) was mandated by Congress in the Global Change Research Act of 1990 (GCRA), (P.L. 101-606), “to assist the Nation and the world to **understand, assess, predict** and **respond** to human-induced and natural process of global change.”
- Through USGCRP, agencies work to:
 - Coordinate global change research across the government.
 - Use research results and products to provide information regarding risk management in a changing climate.
 - Inform and deliver products mandated by the GCRA, including the quadrennial National Climate Assessment (NCA).



National Climate Assessments



A “**risk-based framing**” is used to ensure the assessments focus on issues of high importance to decision-making and to help with communicating assessment outcomes.

- What is it **you value** that is at risk?
- How are the **things** we value at risk?
- What is being **done**?

What is an Assessment?



Increasing complexity, # of authors & papers,
and strength of the review process

Journal article

- One study that *presents* results of one analysis; typically <10-12 authors
- Peer reviewed through journal publication process

Review article

- Surveys, combines, and *summarizes* previously published studies about a given topic (i.e. literature review or meta-analysis)
- Peer reviewed through journal process

Scientific Assessment

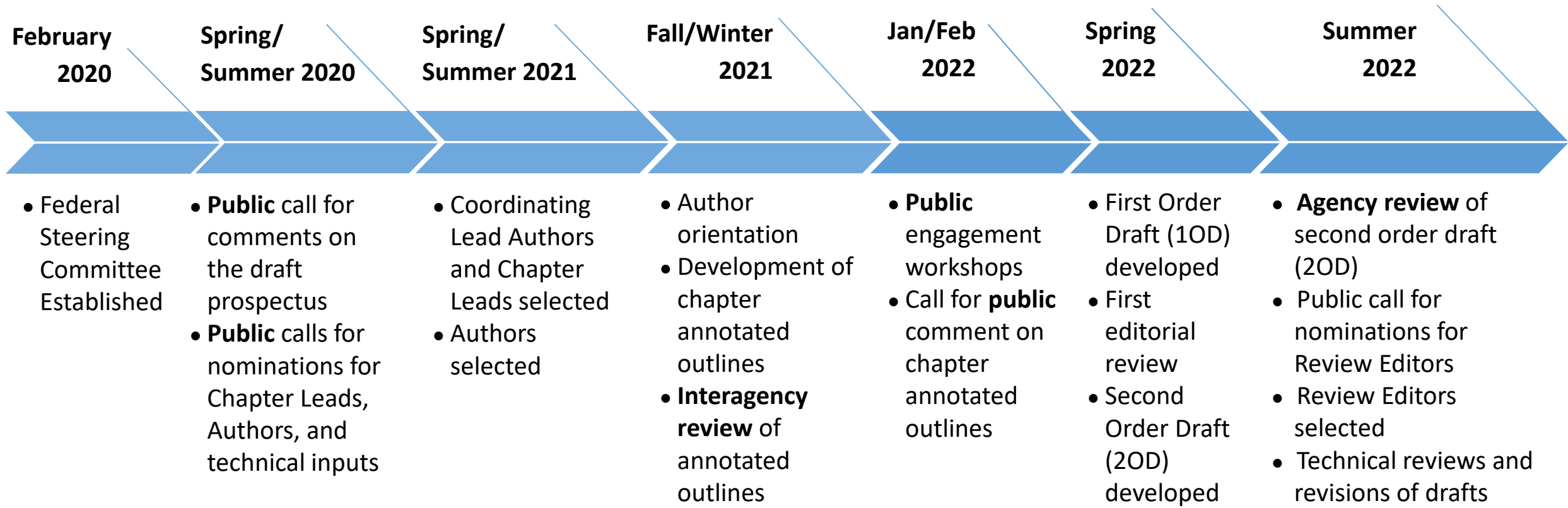
- Reports that *synthesize* and *weigh* the published scientific literature across a broader range of topics to determine key findings, describe uncertainties, and identify progress in the state of scientific understanding
- Developed by extensive research community, undergoes multiple rounds of robust peer review and transparent government and public input processes



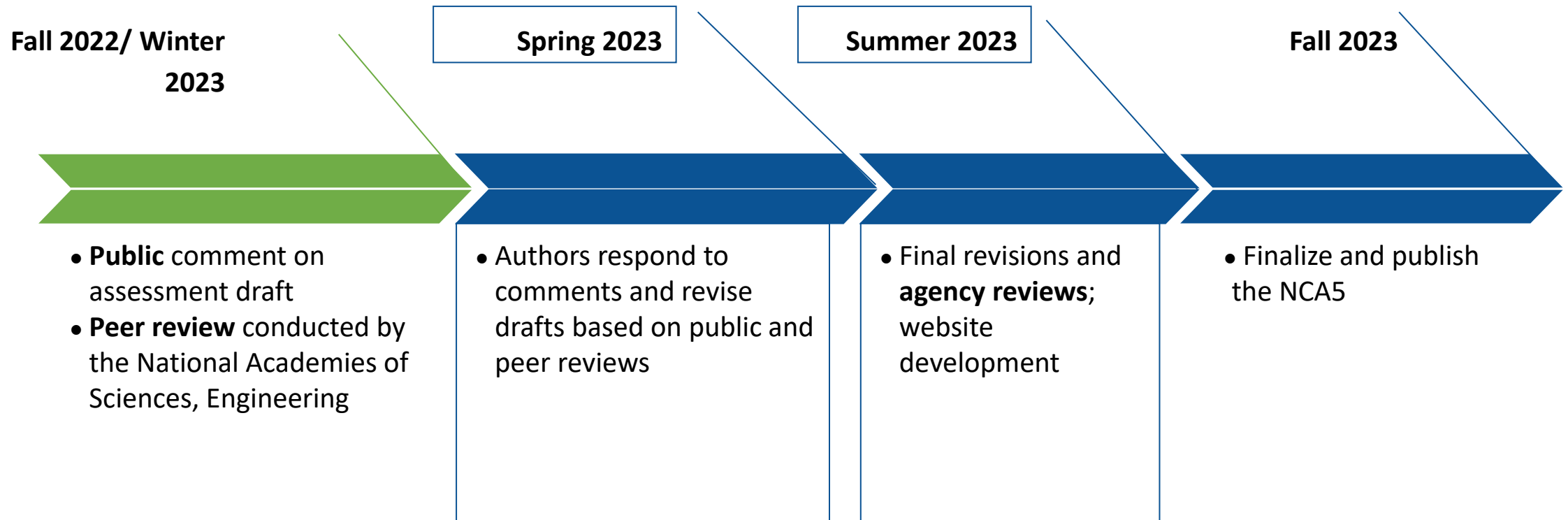
What is an Assessment?

- An **evaluation** of a body of scientific or technical knowledge that **synthesizes** individual studies, data, models, and assumptions, and **applies best professional judgment** to bridge uncertainties
- Assessments are a **consensus-based** view of the state of science.
- They are **relevant for policy** and decision-making but **do not prescribe** specific policy interventions or advocate for a particular viewpoint.
- The NCAs must also be fully compliant with the Global Change Research Act (GCRA 1990) and other applicable laws and policies, making them **authoritative, timely, and transparent**.

NCA5 Process To Date



Next Steps in NCA5 Development



NCA5 Table of Contents

- 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



New knowledge informing NCA5

- **Scientific Advances:** improved understanding of Earth system process; 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

Major themes of the draft assessment

How We Are Addressing Climate Change

- Every degree counts
- Innovation in mitigation and adaptation
- Communities taking action to strengthen resilience

How We Experience Climate Change

- Many extreme events are becoming worse and are more harmful in an interconnected world
- Climate change exacerbates inequality
- Every part of the United States is feeling the effects



Photo credits: NOAA NWS, Wakefield, Virginia, Forecast Office; Washington State University Vancouver; US Geological Survey.

Major themes of the draft assessment

What Is At Risk

- Safe, reliable water supplies
- Food security
- Homes and property
- Infrastructure and critical services
- Human health
- Ecosystems
- Economies at home and abroad
- Regional economies and livelihoods
- Job opportunities
- Culture, heritage, and traditions



Photo credits: (Left) Zachary Haslick/Aerial Associates Photography Inc., (center top) Lauren Dauphin/NASA Earth Observatory, (center bottom) Vik Friedman/US Department of Energy, (right) Alisha Goldstein/EPA

Major themes of the draft assessment

Where We Are Headed

- *Societal choices* drive greenhouse gas emissions
- Rising emissions → rapid global warming → increasing risks

How We Move Forward

- Avoiding the worst impacts and reducing unequal vulnerabilities *requires* sharply reducing emissions and transformative adaptation
- Mitigation and adaptation actions result in both near-term and systemic, cascading benefits
- Transformative change is an opportunity for a safer, healthier, more just Nation



Actions on climate change taken by some Hopi persons engage science, tradition, and education. Photo credit: Michael K. Johnson©, University of Arizona.

Draft Economics Chapter

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- Effects of climate change on U.S. markets, budgets, and the economic opportunities of households, businesses, and institutions
- Economics of climate mitigation and technology options are covered in other chapters
- Provides example of US economic impacts of climate extremes and climate change AND projected impacts
- Discusses how markets and budgets respond
- Considers how economic opportunities will change
- Over 250 references

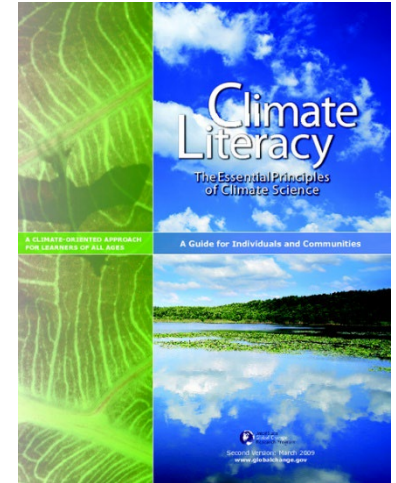


Economics in draft NCA5 Chapters

- About 150 specific “\$” amounts mentioned across nearly all chapters
- About 30 uses of ‘GDP’ to quantify costs nationally
- “Cost(s)” appears on ~20% of the ~1700 pages (Narrative, references, traceable accounts, etc.)
- Beyond economics, emphasis on human social systems, justice and impacts across the report
- EPA. (2021). Climate Change and Social Vulnerability in the United States: A Focus on Six Impacts. US Environmental Protection Agency, EPA 430-R-21-003. www.epa.gov/cira/social-vulnerability-report

Beyond Assessment at USGCRP

- [“Selecting Climate Information to Use in Climate Risk and Impact Assessment”](#) is a guide for federal agency climate adaptation planners
- [“A Federal Framework and Action Plan for Climate Services”](#) provides a blueprint for USGCRP to coordinate action
- *“Climate Literacy: The Essential Principles of Climate Science”* is an interagency guide that provides a framework and essential principles for formal and informal education about climate change. Currently being updated from 2009
- “Climate Resilience Information System” integrates common climate information needs across the USG
- [Climate Mapping for Resilience and Adaptation](#) (CMRA) for BIL and IJJA information



Thank you!

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