August 7, 2020

Dr. Chris Avery
Chief of Staff for the National Climate Assessment
U.S. Global Change Research Program
1800 G Street, NW, Suite 9100
Washington, DC 20006

Re: Environmental and Energy Study Institute Comments on the Draft Prospectus of the Fifth National Climate Assessment

Dr. Avery:

Thank you for the opportunity to comment on the Draft Prospectus of the Fifth National Climate Assessment (NCA) (NCA5). The NCA is a vital source of information for the American public and policymakers. The U.S. Global Change Research Program's shift to provide more localized climate information in the Fourth NCA (NCA4), through the regional framework, provided a critical service to communities, companies, municipalities, and states that are making decisions now on how to adapt to the impacts of climate change. This information also underscores the urgent need to reduce greenhouse gas emissions to avoid the worst climate impacts. Your efforts to synthesize the most up-to-date science are critical.

The Environmental and Energy Study Institute (EESI) was founded in 1984 on a bipartisan basis by members of Congress to help educate and inform policymakers, their staff, stakeholders, and the American public about the benefits of a low-emissions economy that prioritizes energy efficiency, renewable energy, and new clean energy technologies. In 1988, EESI declared that addressing climate change is a moral imperative, and that has since guided our work. Through EESI's Congressional education work, we consistently interface with experts on all facets of climate science, technology, and policy development, and much of the information we bring together is highly relevant to the formulation of the NCA5.

Respectfully, we offer for your consideration the following comments on and ideas for the Draft Prospectus for the NCA5.

Cross-cutting Comments

The NCA5 has the opportunity to bring together much needed information on the state of climate science and human responses to climate change. EESI recommends that the NCA reaches out to regions and sectors, as early as possible in the formulation of the assessment, to hear what information is most needed and to use this guidance to help organize and frame the synthesis of the science.

1020 19th Street NW, Suite 650 • Washington, DC 20036
Ph: 202-628-1400 • Fax: 202-204-5244 • Email: eesi@eesi.org
www.eesi.org

In its current form, the overarching themes and framework of the NCA5 do not mention integration of traditional ecological knowledge (TEK) to inform the report. TEK contributes unique information to understand climate systems and human responses to climatic changes. Specifically, it builds out a rich understanding of localized climate conditions over time. Federally-recognized tribal communities have sovereignty over their land and knowledge, and TEK should be incorporated throughout the NCA5 with their consent and active participation (i.e., as authors, editors, reviewers, etc.).[1] The NCA's role is to bring together the best knowledge and science on climate change in the United States and integrating TEK is a key way to ensure that the report is as substantive and inclusive as possible. EESI's briefings on Coastal Resilience in Alaska[2], Coastal Resilience in the Great Lakes[3], and Bridging the Gap Between Science and Decision-making[4] all provide recommendations on how TEK can be better integrated into science and research.

The NCA5's overarching themes currently include "identification of vulnerable populations for climate-related risks and potential impacts." As this theme is integrated throughout the assessment, it will be important to use the literature on underlying reasons for vulnerability to underpin this work. Specific attention should be paid to the disproportionate impact of climate change on frontline communities (i.e., those experiences climate change first and worst), communities of color, low-income communities, and legacy communities (i.e., those impacted by decades of unabated pollution). For example, research has progressed on understanding the uneven impact of extreme heat and pollution on different populations (i.e., differentiated impacts based on race, income level, etc.).[5]

The NCA5 also has the opportunity to draw on extensive climate change research. Biological and physical sciences have been well integrated in previous NCA reports. Past NCAs have also integrated some social science research, especially economic research. There is a substantial opportunity to increase the social science disciplines that the NCA5 draws on given the breadth of climate research now available. For sections of the NCA5 exploring the human dimensions of climate change, we recommend drawing on African and Black American studies, anthropology, archeology, behavioral science, environmental studies, Native American and indigenous studies, sociology, and women and gender studies, in addition to economics. These disciplines provide case studies, lessons learned, best practices, and barriers surrounding human responses to climate change. Experts from these fields should also be called upon to serve as authors, editors, and reviewers for the assessment. EESI's briefings held during Climate Adaptation Data Week[6] provide specific examples of how these disciplines advance our understanding of climate change.

[1] EESI also encourages the inclusion of TEK from unrecognized tribal communities.
[2] "Coastal Resilience in Alaska: Programs and Policies Helping Communities Adapt in the Nation's Fastest-Warming State," Environmental and Energy Study Institute, archive available at https://www.eesi.org/briefings/view/042120alaska; last accessed on August 7, 2020.
[3] "Coastal Resilience in the Great Lakes Region: Science, Policies, and Programs Furthering Local Resilience Goals," Environmental and Energy Study Institute, archive available at https://www.eesi.org/briefings/view/021320greatlakes; last accessed on August 7, 2020.
[4] "Bridging the Gap Between Science and Decision-Making: Briefing Series: Climate Adaptation Data Week," Environmental and Energy Study Institute, archive available at https://www.eesi.org/briefings/view/041620data; last accessed on August 7, 2020.
[5] "Urban Heat Management and the Legacy of Redlining," Journal of the American Planning Association, available at https://www.tandfonline.com/doi/full/10.1080/01944363.2020.1759127; last accessed on August 7, 2020.
[6] "Climate Adaptation Data Week Series," Environmental and Energy Study Institute, archive available at https://www.eesi.org/climate-adaptation-data-week-series; last accessed on August 7, 2020.

Climate impacts on cultural heritage have yet to be well-integrated into the NCAs. EESI's briefing on Cultural Heritage and Climate Change[7] emphasizes the need for the scientific understanding of climate impacts on archeological and culturally significant landmarks to be acknowledged and addressed in the NCA5. For example, the Bering Land Bridge National Preserve on the Western coast of Alaska contains one of the highest concentrations of archaeological artifacts in North America; however, warming temperatures, thawing permafrost, and rising sea levels are damaging the site and washing away the heritage and artifacts it contains. Without increased coordinated documentation and archaeological attention, this and sites across the U.S—including over 13,000 in the Southeastern United States—are at risk of being lost forever.[8] Archeological and anthropological research can be drawn upon to inform a chapter on cultural heritage or a section within each regional chapter on this topic.

Proposed Framework for NCA5 Comments

Section 1: EESI supports the inclusion of "risks to interconnected natural, built, and social systems" in this section. Bringing together research at the nexus of these systems—such as research on frontline communities located in low-lying areas prone to flooding and how best to help them prepare for and cope with climate change—will be an important contribution of the NCA5.

Section 2: In this section, "attribution of physical and biophysical processes to human activities" is currently grouped with all "observations of changes in climate-related phenomena." EESI suggests that new attributional analysis related to extreme events should be broken out into its own section. This relatively new area of climate science is of particular interest to a decision-maker audience, so making it easily accessible and understandable will be especially important.

Section 3: The section provides a list of topics to be covered beyond the mandated topic areas. Each of these areas merits attention, and, in addition, EESI suggests adding effects on frontline communities, environmental justice communities, and other marginalized communities to the list, especially as it related to the intersection with human health. This list also includes "ecosystems and ecosystem services." These are overlapping concepts with nature-based solutions to climate change, which can serve both mitigation and adaptation roles for climate change, but also help prevent other environmental problems such as invasive species, biodiversity loss, and contamination of air and water. EESI's fact sheet on Nature as Resilience Infrastructure[9] can serve as a resource to identify recent literature on the ways in which nature, often in conjunction with built infrastructure, can increase the resilience of communities and generate other co-benefits.

Section 4: EESI supports the approach to highlight "state-level information, as well as urban and rural case studies to showcase climate trends, potential risks, and resiliency planning with local specificity." It should be acknowledged that communities are already experiencing climate impacts, so risks are not only potential, but also actualized. Similarly, we now have the opportunity to not

[7] "Cultural Heritage and Climate Change: Briefing Series: Climate Adaptation Data Week," Environmental and Energy Study Institute, archive available at https://www.eesi.org/briefings/view/041520data; last accessed on August 7, 2020.
[8] "National Landmarks at Risk," Union of Concerned Scientists, available at https://www.ucsusa.org/sites/default/files/2019-09/National-Landmarks-at-Risk-Full-Report.pdf; last accessed on August 7, 2020.
[9] "Fact Sheet: Nature as Resilient Infrastructure – An Overview of Nature-Based Solutions," Environmental and Energy Study Institute, available at https://www.eesi.org/papers/view/fact-sheet-nature-as-resilient-infrastructure-an-overview-of-nature-based-solutions; last accessed on August 7, 2020.

just look at resilience planning, but also actions and solutions. In terms of adaptation and resilience planning and implementation, the NCA5 should incorporate best practices and case studies on processes for community and stakeholder inclusion. EESI's briefing on Community-Centered Resilience[10] features the example of Louisiana's Strategic Adaptations for Future Environments (LA SAFE) initiative, which should be used as a model across the country.

Case studies on urban and rural areas will be a useful contribution to the NCA; however, case studies do not need to be bound only by population density. Additional categories for bounding case studies should also be considered, including environmental justice communities, coastal communities, low-income communities, historically significant regions, archeologically important sites, etc. EESI's Regional Coastal Resilience[11] briefing series contains dozens of case studies that may be useful to this area of inquiry.

This section also requests comments on the appropriate level of detail to provide at the regional level. Through EESI's work with practitioners across the climate space as well as with decisions-makers, we can affirm that localized climate data is the most useful information to practitioners and decision-makers at the state, local, and national levels. EESI held a briefing[12] in April 2020 on Washington state's Sea Level Rise in Washington State - A 2018 Assessment[13], which provides probabilistic projections for sea level rise for 171 locations across the state. This is the granularity requested by policymakers to plan for infrastructure and community development. EESI recommends including as high a level of detail as possible at the regional, state, and sub-state scales. EESI's Climate Adaptation Data Week[14] showcases how we can communicate these downscaled data to decision-makers, if the information is available.

EESI also encourages the NCA5 to explicitly discuss where there are gaps in the downscaled data to highlight research needs. For example, Alaska is currently limited by the lack of downscaled climate information for most regions of the state, as identified during EESI's briefing on Coastal Resilience in Alaska[15]. During the course of this assessment, the Administration should seek to fill these local and regional data gaps using the vast array of data in produced and managed by the Federal agencies.

Section 5: The section title focuses on "information needs" for adaptation and resilience. EESI suggests that while information needs are one area of adaptation and resilience research, this scope limits the discussion of adaptation and resilience critical to managing the impacts of climate change. As early as the third the NCA, the report provided hundreds of examples of how communities and sectors were trying to adapt to climate change including best practices and lessons learned. The

[10] "Community-Centered Resilience: Lessons from Louisiana," Environmental and Energy Study Institute, archive available at https://www.eesi.org/briefings/view/110619lasafe; last accessed on August 7, 2020.
[11] "Regional Coastal Resilience," Environmental and Energy Study Institute, archive available at https://www.eesi.org/projects/coastal-resilience; last accessed on August 7, 2020.
[12] "Localizing Sea Level Rise Projections for Decision-Makers: Briefing Series: Climate Adaptation Data Week," Environmental and Energy Study Institute, archive available at https://www.eesi.org/briefings/view/041320data; last accessed on August 7, 2020.
[13] "Sea Level Rise in Washington State - A 2018 Assessment," Washington Sea Grant, University of Washington Climate Impacts Group, Oregon State University, University of Washington, and U.S. Geological Survey. Prepared for the Washington Coastal Resilience Project. https://cig.uw.edu/resources/special-reports/sea-level-rise-in-washington-state-a-2018-assessment/; last accessed on August 7, 2020.
[14] "Climate Adaptation Data Week Series," Environmental and Energy Study Institute, archive available at https://www.eesi.org/climate-adaptation-data-week-series; last accessed on August 7, 2020.
[15] "Coastal Resilience in Alaska: Programs and Policies Helping Communities Adapt in the Nation's Fastest-Warming State," Environmental and Energy Study Institute, archive available at https://www.eesi.org/briefings/view/042120alaska; last accessed on August 7, 2020.

scope of this section should be broadened to include these research areas again in the NCA5. Specifically, across each region of the United States, there is significant research on how different sectors are adapting to a variety of climate impacts and many cities and states have implemented adaptation plans for which lessons learned can now be synthesized. Including this information in the NCA5 will be a significant contribution of this report in synthesizing the existing research on these topic areas.

This section specifically calls out the use of literature on economics impacts. Literature on economic impacts of past extreme weather events on different sectors, using the new attribution analysis of apportioning climate change to extreme events, will be useful as communities, companies, and governments plan and implement resilience strategies. Further, economic analysis of how climate action (e.g., renewable energy deployment, pre-disaster mitigation, etc.) and economic development (e.g., jobs, lower disaster recovery costs) go hand in hand is an important contribution. The limits of economic modeling should be acknowledged. Literature from additional social science fields, as mentioned in the cross-cutting comments, should also help to inform Section 5 of the framework.

This section also suggests that links will be provided to U.S. government decision-support tools. This is an excellent way to increase visibility of tools including the U.S. Climate Resilience Toolkit included in the framework. We recommend that the National Oceanic and Atmospheric Administration's Digital Coast be included as one of the tools. EESI is able to demonstrate the value of available tools in briefings including Southeast Coastal Resilience[16]. NCA5 may also consider including decision-support tools generated by state agencies in addition to federal level resources. There is also a plethora of non-governmental decision-support tools. It may serve as a useful resource to curate a list of the best tools in an appendix of the report. It should be noted that just providing toolkits may not help communities use them. The toolkits must be designed and disseminated in ways that make them useful, usable, and actionable (i.e., provide downscaled, digestible data and have a "clearing house" capability to help communities use these tools during their decision-making processes).

As demonstrated by the NCA4, we already know that climate impacts are happening now. The NCA5 will be critical to help the U.S. to prepare and respond to current and future climate changes. Thank you for your consideration.

Sincerely,

Daniel Bresette
Executive Director

[16] "Coastal Resilience in the Southeast: Science, Policies, and Programs Furthering Local Resilience Goals," Environmental and Energy Study Institute, archive available at https://www.eesi.org/briefings/view/031320southeast; last accessed on August 7, 2020.