



National Oceanic and Atmospheric Administration (NOAA)

Availability for Public Comment on NCA6 Draft Prospectus; Call for Authors and Contributors, Technical Inputs; and Notice of Public Engagement

AGENCY: Office of Oceanic and Atmospheric Research (OAR), National Oceanic and Atmospheric Administration (NOAA), Department of Commerce (DOC)

ACTION: Notice of request for public comment on the Draft Prospectus of the Sixth National Climate Assessment, Call for Authors and Contributors, Call for Technical Inputs, and Notice of Planned Public Engagement.

SUMMARY: NOAA is publishing this notice on behalf of the U.S. Global Change Research Program (USGCRP), which seeks public comment on the proposed themes and framework of the Sixth National Climate Assessment (NCA6) as indicated by the Draft Prospectus presented in Part I. Based on input received from this notice, USGCRP will develop an annotated outline, which will be released for public comment at a later date. This notice also requests nominations for volunteer contributors and submission of technical inputs (Parts II and III) and provides notice of planned public engagement events (Part IV) for NCA6.

DATES: Comments and nominations must be submitted to the web address specified below and received by June 7, 2024, at 11:59pm.

ADDRESSES: Comments, nominations, and technical inputs from the public will be accepted electronically via the USGCRP Public Contribution System: <https://contribute.globalchange.gov>

Instructions for submitting comments are available on the website. Submitters may enter text or upload files in response to this notice.

FOR FURTHER INFORMATION CONTACT: Chris Avery, (202) 419-3474, cavery@usgcrp.gov, U.S. Global Change Research Program.

SUPPLEMENTARY INFORMATION: The following Federal Register Notice contains four parts:

Part I is a high-level description of the proposed themes and framework of NCA6. Comment on these themes and framework is requested from the public.

Part II is a call for volunteers to participate in NCA6 as authors and technical contributors.

Part III requests submission of relevant research for authors to review and consider in developing NCA6.

Part IV provides a notice of planned public engagement events throughout the NCA6 development cycle.

In addition to the proposed themes and framework, this Federal Register Notice requests public comment on ways to make the assessment information accessible and useful to multiple audiences; specific types of information or formats that would be most useful to decision-makers; how to best describe risks and impacts to inform decisions, as well as potential

opportunities to reduce those risks and impacts; new topics or new approaches to topics addressed in previous assessments; overarching themes that NCA6 should consider addressing; and other relevant input.

The Global Change Research Act (GCRA) of 1990 mandates that the U.S. Global Change Research Program (USGCRP) deliver a National Climate Assessment (NCA) to Congress and the President not less frequently than every four years that "1) integrates, evaluates, and interprets the findings of the Program; 2) 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; and 3) analyzes current trends in global change, both human-induced and natural, and projects major trends for the subsequent 25 to 100 years."

To date, five NCAs have been released. The first NCA was published in 2000, and the second was published in 2009. The third NCA was published in 2014, and the fourth was released in two volumes and completed in November 2018. The most recent, the fifth NCA, was released in November 2023, and can be found at <https://nca2023.globalchange.gov>.

NCA6 development will be transparent and inclusive, offering opportunities for diverse public participation throughout the

process. The production and review processes are designed to result in a report that is authoritative, timely, relevant, and policy-neutral; valued by authors and users; accessible to the widest possible audience; and fully compliant with the GCRA.

I. Overarching Themes for NCA6 (Draft Prospectus)

NCA6 will encompass a number of overarching themes and perspectives that respond to needs and gaps identified by previous assessments. We seek inputs on potential overarching themes for the NCA6 report, including on the topics listed below:

Identification of advancements or improvements, relative to previous assessments, in scientific understanding of human-induced and natural processes of global change and the resulting implications for the U.S.

Characterization of current and future risks associated with global change, with quantifiable metrics such as indicators and projections where possible, and with the needs of different sub-national geographies and multiple audiences in mind.

Examining trends and developments in adaptation; adaptation options and effectiveness of adaptation efforts; approaches for monitoring adaptation progress including indicators and metrics. Further exploration of how people understand the drivers, risks, and impacts of climate change; how changes in climate affects national security, society, and different people or groups of

people living within the U.S.; and how people behave in response to climate-induced change.

Identification of populations living in the U.S. at higher risk of climate impacts, perspectives on equity and environmental justice in connection with domestic mitigation and adaptation actions, exploration of the socio-economic impacts from these actions, and the role of frontline communities in the country's response to climate change.

Better understanding of sources and trends in U.S. and global greenhouse gas emissions; new strategies for mitigation, effectiveness of mitigation efforts, and new technology pathways for reaching different emissions targets; tradeoffs in different response options; and any other response-related questions that might support decision-making.

We seek comments on these proposed overarching themes, as well as suggestions for potential additional overarching themes.

Proposed Framework for NCA6

What follows is a proposed high-level framework intended to guide the scope and content for NCA6. Public comments are sought on all aspects of this proposed framework.

The proposed framework includes the following topics:

- A) Introduction and context for NCA6
- B) Foundational physical, social, and biological drivers of past and future climate change

- C) Climate risks and impacts to human health and well-being, social systems, and environments
- D) Regional and, where possible, sub-regional analyses within the United States
- E) Information needed to inform climate change mitigation and adaptation actions, increase resilience, and reduce risks
- F) Updates to the NCA Atlas and other climate services tools

This framework presents the anticipated scope and content of NCA6; it is not an indicator of the final structure of the report. Comments on these general topics, as well as any key scientific advances within a topic, are welcomed.

A. Introduction and Context for NCA6

Considerations of context and scope of NCA6 include the overarching themes noted above as well as the following: NCA's relationship to complementary domestic and international assessment efforts.

Advancements in science or scientific approaches since NCA5 and discussion of the associated uncertainty, including assessments completed or in progress after publication of NCA5, and in particular those under the auspices of USGCRP (e.g., the National Nature Assessment).

The geographic and temporal scope (i.e. historic to the next 25 to 100 years).

Risks to interconnected natural, built, and social systems, and the potential for cascading or compound impacts of global change.

Terms and their definitions used to describe confidence and uncertainty levels associated with key statements and findings (and accompanying traceable accounts), which may be similar to those used in NCA5.

We seek public comment on the proposed introductory and contextual material described above for NCA6.

B. Foundational Physical, Social, and Biological Drivers of Past and Future Climate Change

NCA6 will assess the state of scientific evidence regarding the social, physical, and biological drivers of global change, with an emphasis on advances in knowledge since NCA5, including the following:

Changing global and national conditions that influence 1) drivers of climate change, namely the activities that lead to emissions and atmospheric buildup of greenhouse gas concentrations; and 2) factors that affect communities' resilience and vulnerability, such as demographic and land-use changes, behavioral changes, advances in technology, and economic development.

Observations of changes in climate-related phenomena at global, national, and subnational scales, such as atmospheric composition, radiative forcing, temperature, precipitation, climate variability, large-scale climate modes (e.g., El Niño events), drought, wildfire, floods and associated hydrologic events (e.g., streamflow, snowpack), sea-level rise and other physical ocean changes, biogeochemistry of land and marine systems, ocean acidification, extreme heat, and storms (e.g., hurricanes), atmospheric rivers, polar changes (including permafrost and land-ice dynamics), and ice-sheet dynamics; and attribution of social, physical, and biophysical processes to human activities.

Future projections of changes in Earth system processes based on modeling results of the Coupled Model Intercomparison Project (CMIP). Treatment of future scenarios, and associated risks and impacts, will emphasize the most recent modeling data (i.e. CMIP6), with CMIP5 and other future scenarios included as determined by the available sources of information.

Scientific understanding of observed and future extremes, including the attribution of an extreme event (intensity, duration, frequency, etc.) to climate change-related causes and potential tipping points or other potential outcomes that may have a low probability of occurring, but could be extremely damaging or highly beneficial to the U.S. were they to occur.

We seek public comment on the proposed physical, social, and biological science framing described above for NCA6.

C. Climate Change Risks and Impacts to Human Health and Well-being, Social Systems, and Environments

The GCRA of 1990 requires that the NCA analyze "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." NCA6 will provide national-level overviews of observed and potential risks and impacts under a range of scenarios in these key areas of concern for people and the environment, with supporting regional information, as described under Part D.

To better understand global change, non-climatic trends (e.g., population changes) will be discussed to provide a broader context within which the effects of climate change can be understood. Current and future risks, impacts, and benefits will be identified in each of these topic areas, using quantifiable metrics where possible. The impact of extreme events will be addressed where possible. In addition, potential mitigation, adaptation, and resilience measures to reduce risks will be described, to the extent these are identified in available sources of information.

In addition to coverage of these mandated topics, the following additional specific areas are under consideration for inclusion in NCA6: land cover and land-use change; forests; ecosystems and ecosystem services; coasts; ocean ecosystems; marine resources; built environment; urban and rural systems; air quality; effects on Tribal and Indigenous communities; economics; and international effects, in particular those that may raise environmental, humanitarian, trade, or public safety and security issues for the United States. It is worth noting that NCA6 may choose to reduce its coverage of topics that are assessed in other products (such as the National Nature Assessment), depending on the assessment findings of the author teams.

NCA6 will prioritize use of data and research that include full geographic coverage of the entire nation, inclusive of Alaska, Hawai'i, U.S.-Affiliated Pacific Islands, and the U.S. Caribbean.

We seek public comment on the proposed areas of focus for NCA6 as described above and welcome input on other topics that should be considered for inclusion. Please note that topics listed in the Draft Prospectus or submitted as comments may or may not result in a standalone chapter or feature; development of the

table of contents is at the discretion of the NCA6 Federal Steering Committee.

D. Regional Analyses Within the United States

This section will describe sub-national, regional-level perspectives for each of the areas identified in Part C, allowing for discussion of topics of interest to each region.

The proposed regional analyses for NCA6 will follow the model of NCA5, which included the following regions of the United States: Northeast, Southeast, U.S. Caribbean, Midwest, Northern Great Plains, Southern Great Plains, Northwest, Southwest, Alaska, and Hawai'i and U.S.-Affiliated Pacific Islands (see <https://nca2023.globalchange.gov/chapter/front-matter#fig-1>). Areas of focus will vary across regions based on the availability of research and the regional identification of needs.

As appropriate and where available, NCA6 will also highlight information at the state, city, Tribal, and territory level, as well as urban and rural case studies to showcase climate trends, potential risks, and mitigation, adaptation, and resilience action with local specificity.

We seek public comment on the proposed level of detail to be provided at regional scales, sectors, or topics to focus on within particular regions, and overarching themes that should inform the regional analyses within NCA6.

E. Information Needed To Support Climate Change Mitigation, Adaptation, Resilience, and Risk Reduction

NCA6 will identify needs and opportunities for mitigation, adaptation, and resilience measures and planning in the face of observed and projected changes in climate. NCA6 will not evaluate nor recommend specific policy measures, actions, instruments, or mechanisms to deliver or incentivize either adaptation or mitigation responses at any level of government. Rather, the intention of NCA6 is to inform mitigation, adaptation, and resilience needs, planning, and actions across the nation. Scientific assessment of mitigation, adaptation, and resilience needs and opportunities will also be drawn from relevant information from Parts B, C, and D as outlined above, including evidence of successful measures, and discussed in the context of the research topics described below.

Review of the following is proposed for inclusion in NCA6:

Recent information on economic drivers of emissions; social and economic impacts of climate change across sectors and regions at different levels of warming.

Recent information on the potential for reducing greenhouse gas emissions, adapting to climate impacts, and building climate resilience through various solutions and strategies. This includes an assessment of the evidence regarding the effectiveness of these solutions and strategies.

Recent information describing case studies (see Part D), where relevant.

The NCA also underpins U.S. government decision-support tools and resources such as the Climate Mapping for Resilience and Adaptation (CMRA) portal, and U.S. Climate Resilience Toolkit. Moreover, the NCA is a significant climate service for both producers and users in their mitigation, adaptation, and resilience work.

We seek public comment on the proposed framing of information in NCA6 needed to support climate change mitigation, adaptation, resilience, and risk reduction, connections between NCA6 and other U.S. government decision support tools, and how NCA6 may inform development and delivery of climate services (see Part F).

F. Updates to NCA Atlas and Other Climate Services

The incorporation of NCA information into U.S. government decision-support tools and other climate services has proven to be an effective way of ensuring NCAs are both useful and usable. USGCRP will maintain and expand the NCA Atlas as NCA6 develops, in addition to maintaining and expanding other existing support tools (see Part E). USGCRP will also seek to identify needs and opportunities for new climate services or connections between NCA and other relevant tools. This could include assessments of available climate services, especially as they relate to adaptation, resilience, and mitigation efforts. Gaps and opportunities could be a result of governance challenges and/or modeling/scientific understanding. Suggestions for other decision-support tools and services are welcomed.

As with previous assessments, appendices and front matter sections will provide additional background, context, and detail on the development of NCA6. Topics currently planned for inclusion include report process details, legal mandates and requirements, tools, and technical inputs. Suggestions for other appendix topics are requested.

We seek public comment on all aspects of the anticipated scope and content of this framework for NCA6, as described above.

Responses: Response to this Request for Comment is voluntary.

Respondents need not reply to all questions or topics. Responses

may be used by the U.S. Government for program planning on a non-attribution basis. NOAA therefore requests that no business proprietary information or copyrighted information be submitted in response to this Request for Comment. Please note that the U.S. Government will not pay for response preparation, or for the use of any information contained in the response.

II. Call for Authors and Contributors

NCA6 will be written by a group of volunteers with expertise in topics relevant to climate science and global change.

Nominations are sought for authors with pertinent subject matter expertise, proficiency, or relevant background, including Indigenous Knowledge holders, in at least one of the topics delineated in the draft prospectus (Part I). Nominations are encouraged from all governmental and nongovernmental sectors.

The NCA6 Federal Steering Committee (FSC) recognizes the value of Indigenous Knowledge that Tribal Nations and Indigenous peoples have gained and passed down from generation to generation and recognizes Indigenous Knowledge as one of many important bodies of knowledge that can contribute to NCA6. The FSC understands that multiple lines of evidence or ways of knowing can lead to better-formed assessments and encourages nominations of Indigenous Knowledge holders for all NCA6 participant roles.

Submissions must document that nominees have demonstrated backgrounds such that they could contribute to the development of a robust assessment as subject matter experts in one or more of the topics described in the Draft Prospectus (Part I of this FRN) above. In addition, individuals interested in being considered for chapter leadership positions should have experience with leading collaborative teams under deadlines.

Authors volunteering to assist in writing NCA6 are providing an important service to the United States. In addition to providing an opportunity to inform policy, participation in NCA6 will allow authors to expand their professional networks and visibility, and to explore opportunities to create derivative products.

The Federal Government will not provide financial compensation for these roles. The Federal Government is anticipated to provide travel costs to authors to attend meetings if requested for NCA6; however, this is not guaranteed. Formal acknowledgment of participant contributions will be provided to each author and their institution as requested.

NCA6 will attempt to address the full breadth of each topic and seeks a suitably diverse author pool, including Indigenous Knowledge holders, biophysical and social scientists, engineers, planners, and traditionally underrepresented groups. Selection

criteria for all author positions will consider expertise, disciplinary background, career status, diversity, and geographic representation.

Participant Roles

Nominees may be invited to serve as Chapter Lead Authors, Graphics Development Leads, Authors, or Technical Contributors to NCA6.

A Federal Coordinating Lead Author (CLA) selected by the Federal Steering Committee (FSC) will serve as a liaison between the author team and federal agencies.

Chapter Leads (CLs) oversee chapter development by selecting authors, managing author teams, delegating chapter writing assignments, and providing drafts of the chapter to the CLA. CLs are closely involved with the writing process, working to ensure that the content of the chapter is consistent across sections and drafts are delivered on time. CLs will, with input and guidance from the FSC and CLA, establish author teams comprising federal and non-federal experts. Only non-federal experts may serve as CLs. Persons selected as CLs will be informed after the close of the nominations window.

The Graphics Development Lead is a new role introduced for NCA6. Graphics Leads will be a full author on the chapter team and will be responsible for leading and managing the development of all graphics within their assigned chapter. They will work directly with USGCRP staff and the NOAA Technical Support Unit throughout the process to ensure that well-designed informative graphics are developed alongside the text of the chapter. Technical Contributors are invited by CLs to contribute to chapters for discrete, specific content, such as a case study or a figure, on an as-needed basis. Technical Contributors are not chapter authors and may be either federal or non-federal employees. Technical Contributors may be brought on later in the NCA6 development process as specific expertise is identified.

Eligible nominees not selected as Chapter Leads will be considered for other chapter roles as appropriate. For more information on author roles, see <https://www.globalchange.gov/nca6>.

Nomination Process

In developing NCA6, USGCRP will follow the principles of a use-inspired, knowledge-informed assessment, shaped by both the potential uses of the final products and by science and other forms of knowledge. USGCRP recognizes the importance of lived experiences and acknowledges Indigenous Knowledge as an

important form of evidence. Across all phases of NCA6, USGCRP aims to be inclusive, represent diverse perspectives, and create products that are accessible to the widest possible audience.

Responses to this request for nominations for authors must be submitted by the closing of this FRN. The nomination forms can be accessed via <https://www.globalchange.gov/notices>. Interested persons may nominate themselves or third parties for these roles, and individuals may submit multiple nominations.

Each nomination must include 1) the nominee's full name, title, institutional affiliation, and contact information; 2) the nominee's area(s) of expertise; 3) the proposed NCA6 topic(s) (see Draft Prospectus in Part I above) for which the nominee is qualified; 4) a short description of the nominee's qualifications relative to contributing to the report; and 5) a current CV [maximum length four (4) pages].

All interested members of the public are encouraged to volunteer themselves for consideration. Nominations with missing information, or for nominees who do not meet the eligibility requirements above, may not be considered.

Expertise Sought

In accordance with the GCRA, USGCRP seeks nominations with expertise in the areas of climate/Earth system science, as well as sectoral, issue-specific, and regional impacts. This includes expertise in the following broad topic areas (subject to change):

Climate/Earth system science expertise to integrate, evaluate, and interpret the latest scientific findings; discuss the associated uncertainties; analyze current trends in global change; and project major trends for the subsequent 25 to 100 years.

Sectoral and issue-specific impacts expertise, including in the social sciences, to analyze the effects of global change on the natural environment (including terrestrial, aquatic, and marine ecosystems); agriculture (including food and food production); energy production and use; land and water resources (including land cover/land-use change, forests, coasts, oceans, and terrestrial/marine resources); transportation; human health and welfare (including air quality); human social systems (including the built environment, urban/rural systems, cities, and economics); biological diversity; Tribes and Indigenous peoples; and response.

Regional expertise that integrates across relevant natural and social science areas for the NCA regions (available at <https://www.globalchange.gov/nca5>).

Response expertise relevant to NCA6, including (but not limited to) mitigation, adaptation, resilience, or other relevant scientific topics.

Any other relevant climate services-related topic or skill set not listed above, including (but not limited to) engineering, planning, architecture, finance, business.

Further, authors are welcome to nominate themselves for topics not listed above that are consistent with the GCRA mandate.

In addition to technical knowledge, USGCRP seeks nominees with expertise that would be useful for developing an NCA chapter. These skills include (but are not limited to) the following: Clear and effective scientific writing, especially for a non-technical audience.

Graphic design experience, such as developing data-focused graphics that are clear and effective, development of infographics, or downscaling modeling visualization.

Team management experience, including overseeing the work of multiple technical experts to a central project.

Synthesis and assessment projects, especially across multiple research disciplines and types of technical inputs.

Conditions of Participation

All participation in and contributions to the NCA will be without compensation and will be potentially included in the publicly released NCA. By voluntarily participating in the NCA, you acknowledge the following:

1. Participation in the NCA means facilitating the development of the NCA, contributing new work to the NCA, or contributing preexisting work for the NCA. Any such work will be incorporated into the NCA at the Federal Government's discretion, including the possibility of modification, without any compensation and without redaction under the Freedom of Information Act (FOIA) or otherwise.
2. All contributions to the NCA of text and original figures (those newly created for NCA and not previously published) will be released under the Creative Commons 1.0 Universal Public Domain Dedication (CC0 1.0). Such contributions will not be protected by copyright or other intellectual property rights. Data, algorithms/models, and software code used to create or support the creation of text and original figures will also be publicly released in connection with the NCA. In some cases, such data, algorithms/models, and software code may be subject

to copyright restrictions prohibiting both their use for commercial purposes and the creation of derivative works, such as CC BY-NC-ND 4.0, but any such restrictions may not prohibit their use for the purpose of reproducing results.

3. Participants assume any and all risks associated with participation in the NCA. By participating, participants inherently waive all claims against the Federal Government and its related entities, except for claims based on willful misconduct, for any injury, death, damage, or loss of property, revenue, or profits (whether direct, indirect, or consequential) arising from participation in the NCA.

4. By participating, participants agree to indemnify the Federal Government in the event that it suffers liability or damages as a result of its use of the contribution.

Submission of a nomination is entirely voluntary and submitters are encouraged to ensure they understand the scope of the obligation before volunteering. More information, as well as information on asking questions beforehand, at <https://www.globalchange.gov/nca6>.

III. Call for Technical Inputs

In addition, this request presents an opportunity to submit relevant scientific/technical inputs to inform the assessment. Any interested parties are encouraged to submit relevant sources of information (e.g., papers, articles, reports, Indigenous

Knowledge, and other local knowledge) for the NCA6 author teams to consider and assess for their work. Technical submissions will be accepted electronically via the USGCRP Public Contribution System: <https://contribute.globalchange.gov> Instructions for submitting technical inputs are available on the website. Submitters may enter text or upload files in response to this notice.

After the closure of this FRN, submissions of technical inputs will still be accepted throughout the NCA6 development process. This call for technical inputs is expected to remain open until the close of the NCA6 call for public comments on the NCA6 Third Order Draft, anticipated to end in early 2027. Additional information on the process for submitting technical inputs can be found after the closure of this FRN on USGCRP's website. See <https://www.globalchange.gov/nca6> for more information.

Response to this call for technical inputs is voluntary.

IV. Notice of Planned Public Engagement Opportunities for NCA6

Multiple opportunities for public engagement to inform NCA6 will be presented throughout the report's development. The following planned public engagement schedule is presented to notify the public of these coming opportunities. The time ranges proposed

are subject to change based on the timing of various development stages for NCA6.

Public call for comments on the Draft Prospectus (Q2 2024)

Public call for authors and technical inputs (Q2 2024)

Public comment on NCA6 annotated outline (Q3 2025)

Public engagement workshops and webinars (Q3 2025)

Public call for art (Q2 2026)

Public call for Review Editors (Q3 2026)

Public comment on NCA6 Third Order Draft (Q4 2026 and Q1 2027)

National Academies of Sciences, Engineering, and Medicine peer review of NCA6 Third Order Draft (Q4 2026 and Q1 2027)

Interested parties are invited to participate in these public engagement opportunities to ensure robust public input to NCA6. Specific dates and locations for all engagements will be provided on <https://www.globalchange.gov/notices>. Members of the public may also sign up to receive updates through USGCRP's bimonthly newsletter at <https://www.globalchange.gov/newsletter-signup>.

David Holst,

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