

**Preliminary Guidance on Eight Priority Topics  
for the 2013 National Climate Assessment  
Nov 8, 2011 - DRAFT**

This document is intended to give guidance to technical input teams and chapter authors on eight topics that are priorities for the 2013 NCA. These eight topics are 1) risk-based framing, 2) confidence characterization and communication, 3) documentation, information quality, and traceability, 4) engagement, communications, and evaluation, 5) adaptation and mitigation, 6) international context, 7) scenarios and 8) sustained assessment. This document is not intended to be an exhaustive resource on all these topics; rather, it is intended to be brief and hit the high points. Note that most of the enumerated titles below are hyperlinks. Following the link will launch a presentation file that gives detailed information on the topic.

**1) Risk-Based Framing**

- Risk is defined as the product of likelihood and consequence.
- Risk management can be based on either quantitative or qualitative representations of likelihood and consequence; however, a written traceable account to sources used and the rationale behind the quantitative and qualitative judgments, respectively, must be provided in the synthesis document.
- NCA leadership recommends that this framework be used for *key vulnerabilities*. Key vulnerabilities can be defined as those with a large magnitude, early vs. late onset of impacts, high persistence and irreversibility, wide distributional aspects, high likelihood, and great importance (based on perceptions). This means that this framing does not have to be used for every statement, only major conclusions.
- One example of incorporating this framework can be taken from the New York City Panel on Climate Change (Figure 1). The annual frequency of days in which air temperature will exceed 90°F is forecasted to increase from a baseline of 14, to 23–29 in the 2020s, 29–45 in the 2050s, and 37–64 in the 2080s. As time progresses (indicated by blue bubbles progressing from left to right on Figure 1), the likelihood of impact on city infrastructure increases from low to high, and the magnitude of consequence increases from medium to high. Risk management actions would therefore progress from a “watch” state to a state in which strategies are developed to mitigate the impact.

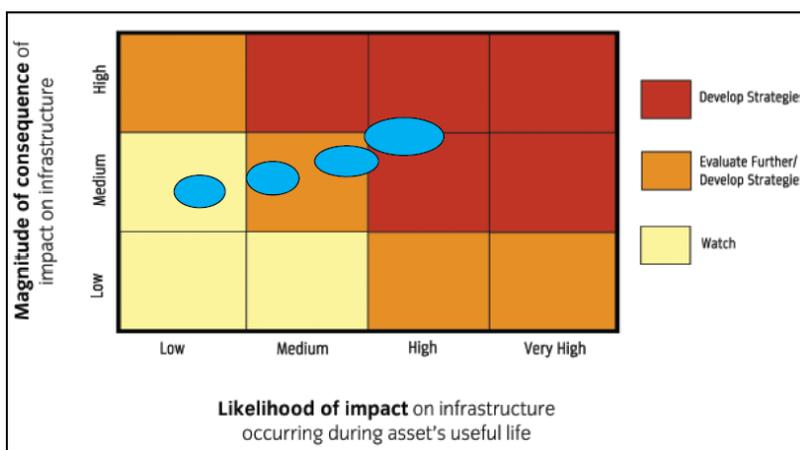


Figure 1 Example of risk management framework for tracing heat waves in New York City.

**2) Confidence Characterization and Communication**

--Coming Soon--

### **3) Documentation, Information Quality, and Traceability**

- To help ensure the overall quality, the NCA authors will be required to assess the quality of all source material and data used by applying the standards set forth in the National Oceanic and Atmospheric Administration's (NOAA) Information Quality Guidelines. The Guidelines are intended to ensure the objectivity, utility and integrity of disseminated information. While there is some latitude in determining whether inputs meet the standards in the Guidelines, depending on the intended use of the source material, more definitive guidelines will be available in December 2011 for even application of the guidelines. These guidelines are primarily for authors, however, they will be publically available so that the process is transparent and contributors have insight into the author process.
- Also available are some [Frequently Asked Questions](#) for anyone intending to contribute information to the NCA, outlining some key considerations in making input as usable as possible for the NCA (<http://www.globalchange.gov/images/NCA/nca-info-quality-assurance-faq.pdf>)
- If the NCA authors wish to use key figures, statements or data, they will be required to provide digital links, original papers, data etc. Rights and permissions will be required for the reproduction and use of any image or article. Thus, it is strongly preferred that technical input is submitted with as much information regarding sources as possible and links to the underlying material and data. GCRP staff and working groups are developing web-forms to ensure minimum documentation and meta-information is provided. Authors will be required to interact with contributors of technical input to further document sources as necessary. Guidance is being developed (and will be available in December 2011) for technical input teams that indicates expected documentation needs, including on the provenance, methods and review of the input.
- It is not required that all source material be based on peer reviewed material; however, documentation of sources and methodologies used in collecting the data (often referred to as the metadata) is needed. This does not have to result in a published document, but if contributors/authors are able to demonstrate that qualified professionals in the field or relating to the subject matter have reviewed the methods and data, (and/or are using the results) then this will facilitate easier acceptance of the technical input. In general, information that is not published should be replicable and collected and documented using accepted methods in that field of study. In general, access to the original data is required if important conclusions are based on unpublished work. Exceptions may apply, but further guidance and contact information will be supplied in December 2011.

### **4) Engagement, Communications, and Evaluation**

#### **Engagement and Communications**

The strategic plan for the NCA includes a commitment to working with stakeholders to understand their perspectives and ideas, share data and information, build partnerships, and collaboratively design, assemble, and deliver assessment information. Teams are encouraged to engage with relevant stakeholder communities as they prepare their inputs and as a means toward developing the sustained assessment process. The NCADAC has already approved an initial engagement strategy for the NCA, available from [http://www.globalchange.gov/images/NCA/nca-engagement-strategy\\_5-20-11.pdf](http://www.globalchange.gov/images/NCA/nca-engagement-strategy_5-20-11.pdf), which all teams should review as a part of their planning.

#### **Reporting on Engagement and Communications**

If possible, teams should plan to submit a report on the engagement and communications activities conducted as a part of their report development via Emily Cloyd ([ecloyd@usgcrp.gov](mailto:ecloyd@usgcrp.gov)). This report should include the following:

- List of all individuals involved in the technical input development, including contact information and way(s) engaged
- Copies of any communications materials developed as a part of the process, including (but not limited to)
  - Communications and engagement plan, including information about how draft and final products were disseminated and if they are available in hard copy or via the internet
  - Invitation letters (these may also be bcc'd to [engagement@usgcrp.gov](mailto:engagement@usgcrp.gov), although including a sample of one in the report would be useful to the ECE WG)
  - Workshop or meeting read-ahead materials and materials generated in the course of the activity (agenda, white papers, handouts, presentations, post-workshop communications)
  - Fliers, brochures, or websites (screen shots and links)
  - Any feedback received from participants about these materials
- Any evaluation mechanisms used, including (but not limited to)
  - Pre- and post-activity knowledge or capacity surveys
  - Written evaluations from meetings or workshops and of overall process
  - Summary of oral evaluations
  - Summary of follow-up discussions with participants

## **5) Adaptation and Mitigation**

- The Adaptation and Mitigation working group co-chairs are anxious to maximize integration across chapters. Rosina Bierbaum, Joel Smith, and Arthur Lee would greatly appreciate technical input teams' answers to the following questions:
  - Are you collecting information on adaptation practices used today and their efficacy either in reducing risks from observed climate conditions or in reducing risks from future climate change? If so, we can use this information to develop a compendium of best practices across scales and sectors?
  - Can you include a session in any workshop you hold that focuses on adaptation opportunities/practices? Our working group can help with questions/participants and possibly with funding.
  - Can you tell us what case studies you are preparing and if it is possible to build an adaptation component into them?
  - Are you identifying any particularly interesting intersections of mitigation/adaptation in your sector/region?

Please send your answers to Sheila O'Brien ([sobrien@usgcrp.gov](mailto:sobrien@usgcrp.gov)) and Rosina Bierbaum ([rbierbau@umich.edu](mailto:rbierbau@umich.edu)) and identify your lead person on adaptation issues.

## **6) International Context**

- In an effort to integrate priority topics where appropriate throughout the NCA, teams are encouraged to use text boxes to include international/global priority topics in regional, sectoral and cross-cutting chapters. Technical input teams are also encouraged to include international/global priority topics in their reports.
- Some questions to consider include:

- How might U.S. supply and demand chains be affected by climate change outside our borders? For regions, are there key economic activities that are vulnerable to climate change beyond the region, which will impact regional economies?
- How will global economic markets and economic growth be affected if resource scarcity or fluctuation is induced by climate change and how might this affect the US economy including consumers, commodity prices and the financial sector?
- How might U.S. investments and programs overseas be affected by climate change and by policies on climate adaptation and mitigation?
- How might climate risks affect the availability, demand, and conservation of natural resources and wildlife that cross international boundaries? How might climate change affect the migration of people, diseases and pests to and from the US?
- Are there useful lessons for the US in how other countries incorporate climate risks into decision making and in particular, how they address uncertainty, scenarios, adaptation strategies etc.

## 7) ***Scenarios***

- To bound uncertainty about future climate conditions and to take advantage of existing research, the NCADAC has specified that writing teams and those providing technical inputs to the assessment assume climate change consistent with the IPCC Special Report on Emissions Scenarios (SRES) B1 and A2 emissions scenarios. In addition to this minimum set, other scenarios can be assumed as well (e.g., new results from CMIP5 using RCP8.5 and RCP2.6). Groups should indicate the scenario assumed in developing a finding and contrast and compare results with those consistent with the SRES B1 and A2 scenarios.
- Documents describing climate change historical trends and future outlooks have been prepared for each of the NCA regions and the nation as a whole. Regional technical teams are asked to review draft documents to insure that for each region, they (1) focus on climate features of greatest importance and (2) incorporate the best available information. Interested sectoral teams are asked to comment on the national outlook document. Comments are due by November 18, 2011, and final versions are expected in December 2011. Until finalized, drafts are intended for review and initial use by technical input teams. They are subject to change based on review. The drafts are not for public distribution.
- Climate change simulations consistent with IPCC SRES B1 and A2 scenarios that are used in the assessment should be produced by one or more of the following four global climate models: (1) Canadian Global Climate Model version 3 (CGCM3), (2) NCAR Community Climate Model Version 3 (CCSM3), (3) Geophysical Fluid Dynamics Laboratory (GFDL) Climate Model Version 2.1 (CM2.1), or (4) United Kingdom (UK) Hadley Centre Climate Model Version 3 (HadCM3). Relevant results derived using these models are available through the [CMIP3 data archive](http://www-pcmdi.llnl.gov/ipcc/about_ipcc.php). ([http://www-pcmdi.llnl.gov/ipcc/about\\_ipcc.php](http://www-pcmdi.llnl.gov/ipcc/about_ipcc.php))
- Teams requiring higher resolution climate change data should make use of:
  - North American Regional Climate Change Assessment Program (NARCCAP) results in cases where dynamical downscaling methods are desirable, or
  - Results derived using statistical downscaling methods where these are better suited to an application.

- For groups requiring information on sea level changes, a draft narrative description of scenarios consistent with SRES B1 and A2 emissions scenarios will be available after October 17, 2011. This document will also provide information about selected regional anomalies. Preparation of the draft included a review process. After additional review by regional and sectoral technical input teams, a final description of sea-level change scenarios will be finalized by mid-February 2012.
- The National Land Cover Database 2006, maintained by the Multi-Resolution Land Characteristics Consortium, provides a baseline land cover characterization for the assessment. Teams requiring information about land cover and land use scenarios may consider results developed by recent Federal assessments including: the 2010 Research Planning Act Assessment by the USDA Forest Service; the USGS assessment of carbon stocks, carbon sequestration, and greenhouse gas fluxes in ecosystems under the Energy Independence and Security Act of 2007; or the EPA National-Scale Housing-Density Scenarios Consistent with Climate Change Story Lines. Groups should at a minimum consider the results of these assessments and studies that are consistent with SRES B1 and A2 scenarios.
- The SRES emissions scenarios are based on underlying narrative descriptions of potential socioeconomic futures. Historical data sets from the Census Bureau and the Bureau of Economic Analysis provide context, and projections of population at regional scale are also available.
- Participatory scenario planning is a process used to identify key management questions pertinent to the future development and use of resources in a given region and to consider the implications of uncertain future climate and socioeconomic conditions. Regional and sectoral teams are asked to identify ongoing scenario planning activities in their domain, and report these activities to the scenario team.
- If interested groups wish to engage in scenario planning as inputs to the NCA, they are asked to develop adaptation scenarios to manage impacts associated with the A2 and B1 scenarios. Limited technical assistance is available to support activities of this kind.
- Point of contact for scenarios information: W. R. Emanuel, [wemanuel@usgcrp.gov](mailto:wemanuel@usgcrp.gov).

## 8) Sustained Assessments and Research Needs

- Teams are requested to identify a “path forward” for the assessment activities that they have initiated, as well as priority resource requirements to sustain them. Please contact John Hall, [John.Hall@osd.mil](mailto:John.Hall@osd.mil), and Maria Blair [maria.blair@cancer.org](mailto:maria.blair@cancer.org).
- Teams are also asked to identify key research and data priorities for filling gaps in ongoing programs and providing support for adaptation and mitigation decisions. Please contact Tony Janetos, [Anthony.Janetos@pnnl.gov](mailto:Anthony.Janetos@pnnl.gov), and Diana Liverman, [liverman@email.arizona.edu](mailto:liverman@email.arizona.edu).