United States Global Change Research Program
National Climate Assessment

The National Climate Assessment: Preparing the Nation for Change

Thank you for your interest in the National Climate Assessment. November and the first half of December have been very busy, and very productive months for the National Climate Assessment. We held four major "methodology" workshops that engaged over 300 participants from government, academia, NGOs, and private industry, a public briefing session about the Federal Advisory Committee, three meetings of the Interagency NCA Task Force and multiple briefing sessions for both government and public audiences. In cooperation with agency personnel, several consultants, and members of the scientific community, 5 workshop reports and white papers are currently in process. Read on below for highlights from the individual workshops.

Our biggest project has also been our most challenging one – trying to get the Federal Advisory Committee for the Assessment in place. We have now been at work on this for nine months, and hope that in January that effort will bear fruit and the Committee will finally be established. The first meeting is likely to be in early February, we encourage you to check our website for updates at http://assessment.globalchange.gov.

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Regional and Sectoral Workshop

On November 15-17, the NCA held a workshop on *Planning Regional and Sectoral Assessments,* hosted by the United States Geological Survey at their headquarters in Reston, VA. The approximately 140 participants represented a broad spectrum of regional and sectoral users and producers of assessments, including federal scientists and program managers, academics, and representatives from NGOs, state and local governments, utilities, and resource management agencies. The first day of the workshop featured plenary talks about previous Assessment efforts, the new vision for a sustained assessment process, the role of the NCA within USGCRP, and the approach to developing scenarios of the future that integrate climate, socioeconomic and environmental conditions. Presentations on Canadian, Australian, and United Kingdom assessments and possible approaches to state and tribal assessment efforts helped frame future discussions on international and indigenous connections. Participants also discussed ways

to build capacity and enhance the ability to conduct vulnerability assessments and plan for and implement adaptation within regions and sectors. Days 2 and 3 featured 12 breakout sessions during which individuals discussed and provided input on how to structure and define the regional, sectoral and cross-cutting aspects of the report, how to engage with various audiences and users of the Assessment, and how to define and structure the long-term assessment process.

Several themes emerged from the workshop. First, the participants expressed a lot of interest in a "flexible" approach to setting regional boundaries. This approach would acknowledge the intersection of sectors within regions and could also help deal with sectors and issues that cross regional boundaries. However, there was also considerable interest in having a standard approach for handling regions and sectors to promote a consistent information base for the Assessment. Finally, the need to include cross-cutting topics, such as water-energy-land; ecosystems-agriculture-carbon/nitrogen cycles; coastal ecosystems and development; urban infrastructure and health; environmental justice, national security, and food security also received a lot of attention.

The workshop was a major success; it provided the NCA team with a great deal of valuable input on the outline of the 2013 report and the long-term process. A full summary of the meeting results will be compiled in a report that will be posted on the NCA webpage. The report is expected to be completed in January 2011.

Ecological Indicators Workshop

On November 30 and December 1, the NCA and the Ecosystems Interagency Working Group of the USGCRP—with sponsorship from the Environmental Protection Agency—co-hosted a workshop on *Ecosystem Indicators in Relation to Changes in Climate,* at the U.S. Department of Agriculture Economic Research Service in Washington, D.C. The approximately 60 workshop participants were invited based on their expertise and experience with climate indicators, observing networks, and related activities. The participants included federal agency personnel intimately involved in ecological monitoring and indicators and NGO and academic scientists involved in the issue. Through invited presentations, breakout sessions, and plenary discussions, participants provided individual input that will be summarized for the Interagency NCA Task Force and the soon-to-be-established Federal Advisory Committee.

Participants provided inputs on the definition of an indicator, the necessary measurements to assess climate change impacts and ecosystem responses, and examples of successful long-term trend analyses. One of the most important outcomes of the workshop was a comprehensive list of observing networks that include information on the network goal, its metadata policy, and the current contact information. The report from the workshop will provide guidance for selecting indicators for 2013 NCA report and in future NCA activities. Another suggestion from participants was to establish a standing committee of experts that will work with the Federal Advisory Committee on the appropriate selection criteria for candidate indicators.

Scenario Development Workshop

From December 6-8, the Department of Energy hosted a 60 person workshop on *Scenario Development* at the Hyatt in Arlington, VA. The workshop started off by examining a white paper that explored types, definitions, and alternative uses of scenarios, their applications in previous assessments, and connections with the Intergovernmental Panel on Climate Change approach to scenarios. Participants discussed how the New York City Adaptation Plan and several Department of the Interior activities utilized scenarios, as well the experiences of researchers who have used scenario development as an engagement technique. Breakouts included suggestions for the types of data needed for scenario development, engagement strategies, and alternative ways to think about time and spatial scales.

Many suggestions were made about the overall assessment process and use of scenarios, such as:

- The need to move beyond "impact analysis" to the support of "risk management" that integrates adaptation, mitigation
- The need to frame vulnerabilities in terms of biophysical, ecological, and human factors
- Ways to integrate multiple stresses and sources of information
- Ways to improve characterization of and communication about uncertainty
- The need to prioritize interactions with stakeholders and consider their input on the relevance and legitimacy of scenarios
- Ways to focus on the most pressing issues and evaluate potential solutions

Some participants requested that the NCA develop storylines that include historical climate analogues, describe a wider range of integrated climate-society scenarios, and create "toolkits" and how-to guides on the development of scenarios in regions and sectors. Participants also suggested that the NCA compile an inventory of existing scenario resources and utilize case studies of scenario applications from previous participatory processes. Overall, the workshop provided an abundance of productive ideas that (after discussion with the Federal Advisory Committee) will help the NCA build credible scenarios for the 2013 report as well as for the longer-term process.

Climate Change Modeling and Downscaling Workshop

Directly following the Scenarios Workshop, on December 8-10, was the *Climate Change Modeling and Downscaling Workshop*, also sponsored by the Department of Energy. Approximately 60 people attended the workshop, the focus of which was on the issues and approaches for using models and model output in the Assessment.

The workshop kicked off with an overview of past practices and challenges associated with modeling, including spatial and temporal scales, characterizing uncertainties, and connecting climate models to impacts models. A significant topic of conversation was how to make progress in providing regional climate and socioeconomic information through a variety of approaches, including downscaling larger-scale models and building regional models. Breakout groups and panels addressed the implications for integrated assessment models, inter-sectoral modeling, scaling issues, and which IPCC model results and other sources would be the most appropriate basis for the 2013 report. Other discussions focused on building an aspirational view of what can be achieved with a continuing Assessment process and ways to

ensure that the expectations of scientists and stakeholders are well managed in order to avoid communication issues.

Among the suggestions from individuals in the group were to 1) make sure that the 2013 report activities lead to a longer-term, rigorous modeling approach for the future; 2) start from the CMIP 3 archive, but do what is possible to compare the CMIP 3 and the CMIP 5 approaches in the 2013 report; 3) include a mitigation policy option; 4) initiate some well structured inventories of downscaling activities, including best practices in downscaling; 5) work on building "climate futures" that support the scenario development efforts for regions and sectors; 6) be very explicit about what we know and what we don't know; and 7) develop better ways to use modeling to support inter-sectoral analysis.

New Staff Members Join the NCA Team

Maxine J. Levin is on detail to the NCA from the Natural Resources Conservation Service (NRCS), where she is currently a Soil Scientist with the Soil Survey Division in Beltsville, MD and Washington, D.C. She has worked as a soil chemistry technician, soil survey mapper, and soil interpretations specialist with the NRCS and National Cooperative Soil Survey for almost 30 years and she has been working at the national level for over 15 years. Some of her most recent experiences were working as a USDA representative to the United Nations Rio Convention in desertification, land degradation, biodiversity, wetlands and global warming and as a liaison to the Smithsonian Natural History Museum; she has also been a science fellow in international efforts in Rwanda and Thailand and Project Manager for the National Drought Policy Commission. Maxine holds a degree in Soils and Plant Nutrition from the University of California at Berkeley. She is delighted to now join the staff of the National Climate Assessment.

Bryce Golden-Chen recently joined us as a program specialist for the National Climate Assessment. He supports the NCA director and staff by planning events and workshops, assisting with Interagency National Climate Assessment (INCA) Task Force and Federal Advisory Committee meetings, managing schedule and travel arrangements, maintaining stakeholder databases, and communicating and documenting NCA activities and processes. Bryce's undergraduate training in multi-stakeholder environmental problem-solving concentrated on global climate change science and international and federal policy responses. His graduate studies focused on negotiation for urban and regional sustainability planning and practices. Bryce earned an M.S. and a B.S. from the interdisciplinary Earth Systems Program at Stanford University.

Dr. Kandis Y. Boyd-Wyatt is Designated Federal Officer for the National Climate Assessment Development and Advisory Committee (NCADAC). Dr. Boyd-Wyatt has 15 years of experience working throughout NOAA in various scientific and managerial capacities. Currently, she is the Executive Management and Operations Officer for the National Environmental Satellite Data and Information Service. Previously, Dr. Boyd-Wyatt spearheaded the Turn Around Don't Drown Program, a national flash flood safety awareness campaign. Dr. Boyd-Wyatt also served as the on-site meteorologist during the 2004 landfall of Hurricane Katrina. Dr. Boyd-Wyatt started her career in central Iowa, where she worked as both an operational Meteorologist for the National Weather Service and an on-air meteorologist. Dr. Boyd-Wyatt received her Bachelor's Degree in Meteorology from Iowa State

University, two Masters Degrees in Meteorology and Water Resources from Iowa State University, and a Doctorate Degree in Public Administration from Nova Southeastern University.

Other USGCRP News: USGCRP Strategic Planning Underway

The U. S. Global Change Research Program (USGCRP) is developing a new decadal strategic plan in compliance with the terms of the Global Change Research Act (GCRA) of 1990. The plan, which will dictate the direction of the program from 2011-2020, will provide guidance to ensure that the USGCRP functions successfully around the new program priorities, which include adaptation science, climate services, integrated observations, fundamental research, modeling, Assessments, and communication, education, and engagement. The goal of the new USGCRP strategy is to be a truly integrated "end-to-end" program that not only provides basic science, but also tools to use the science, and to translate it to a broad audience. The primary challenge is to develop a plan that has sufficient flexibility and agility to respond to scientific and technological advances, changing user needs, and economic fluctuations.

There will be many opportunities coming up in the next year for public input on the plan, including webinars to examine the outline of the plan, and a public comment period, among others. There has also already been significant input into the strategic planning process, including 21 public "Listening Sessions" held throughout the US in 2007-2009. Reports from these listening sessions are available at www.globalchange.gov. USGCRP and Member Agencies have also commissioned more than twenty reports on related topics from the National Research Council (NRC) over the last four years that will also be used to help guide the creation of the plan. The final strategic plan will be released by the end of 2011.

Happy Holidays from the National Climate Assessment team!

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For more information:

For more information, please see http://globalchange.gov/what-we-do/assessment or contact the U.S. Global Change Research Program, Suite 250, 1717 Pennsylvania Ave. NW, Washington DC 20006. Tel. (202)223-6262, Email engagement@usgcrp.gov

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The U.S. Global Change Research Program (USGCRP) coordinates and integrates federal research on changes in the global environment and their implications for society. The USGCRP began as a presidential initiative in 1989 and was mandated by Congress in the Global Change Research Act of 1990(P.L. 101-606), which called for "a comprehensive and integrated United States research program which will assist the Nation and the world to understand, assess, predict, and respond to human-induced and natural processes of global change."

The National Climate Assessment (NCA) is being conducted under the auspices of the Global Change Research Act of 1990, which requires a report to the President and the Congress that evaluates, integrates and interprets the findings of the USGCRP every four years. The NCA aims to incorporate advances in the understanding of climate science into larger social, ecological, and policy systems, and with this provide integrated analyses of impacts and vulnerability, helping the federal government prioritize climate science investments, and helping to provide the science that can be used by communities around our Nation try to create a more sustainable and environmentally-sound plan for our future.