



United States
Global Change
Research Program

NEWSLETTER

OF THE

U.S. GLOBAL CHANGE RESEARCH PROGRAM & NATIONAL CLIMATE ASSESSMENT



U.S. Global Change Research Program
National Climate
Assessment

Last month, the US Global Change Research Program (USGCRP) unveiled [new climate preparedness and resilience tools](#) on the [globalchange.gov](#) website, developed through an impressive interagency effort in support of the Sandy Recovery. The online sea level rise mapping tools that integrate the National Climate Assessment sea level rise scenarios with digital mapping capacity were developed through an extraordinary effort between USGCRP, the Council on Environmental Quality, NOAA, the Corps of Engineers, and FEMA.

On Tuesday, June 25, in [a speech at Georgetown University](#), President Obama announced his comprehensive [Climate Action Plan](#), with three major elements: cutting carbon pollution, preparing the US for the impacts of climate change, and leading international efforts to address global climate change. USGCRP and the National Climate Assessment are critical parts of the Plan, particularly within its preparedness component. USGCRP's Advancing Science and Informing Decisions investments map nicely to this line of effort. The President's Plan also builds on the ongoing activities of many federal agencies and the work of the Interagency Climate Change Adaptation Task Force that has been chaired by the Council on Environmental Quality, the Office of Science and Technology Policy (OSTP), and NOAA.



President Barack Obama delivers remarks on climate change at Georgetown University in Washington, D.C., June 25, 2013. (Official White House Photo by Pete Souza)

The section that focuses on preparedness includes Identifying Vulnerabilities of Key Sectors of Climate Change, which refers to a series of National Climate Assessment technical input documents that have already been prepared as a foundation for the Third NCA (for example Energy, Forests, Agriculture, Ecosystems and Biodiversity). Existing technical input documents that have not yet been published will also be released in the near future, including assessment reports on Water, Oceans and Marine Resources (which has a coastal communities component), and Transportation. The Plan also refers to assessment reports that are part of the ongoing assessment process, including new studies on food security (sponsored by USDA, launched this week) and health (supported by the USGCRP Climate Change and Human Health Interagency Working Group, CDC, EPA and NOAA).

Within the section on Using Sound Science to Manage Climate Impacts, the critical role of USGCRP in developing "Actionable Science" is noted, along with a commitment to complete the Third National Climate Assessment for release in the spring of 2014. In addition, the USGCRP Global Change Information System will support the "Toolkit for Climate Resilience" and access to climate data within the Climate Data Initiative.

USGCRP will continue to provide the science, tools, and technical information needed to underpin the President's Climate Action Plan and support its implementation going forward.

[News from the National Climate Assessment](#)

- **Update on the Third National Climate Assessment Report**
- **Creating a system of indicators of climate change**
- **Climate change and indigenous peoples in the United States**

UPDATE ON THE THIRD NATIONAL CLIMATE ASSESSMENT REPORT

Chapter author teams and staff have worked VERY hard to finish revisions and responses to the 4,161 comments received during the public comment period. Most of the current work focuses on ensuring consistency across the report and improving graphics. Responses to comments and revised drafts have been shared with 40 Review Editors who will evaluate the adequacy of responses to comments; their task will be complete by July 8, immediately followed by a meeting of the National Climate Assessment and Development Advisory Committee (NCADAC); the NCA federal advisory committee. The National Research Council and the NCADAC members will have opportunities to review the responses and revisions this summer before the NCADAC delivers the report to the government in the fall. After government review, the final Third NCA is slated to be released electronically in the spring of 2014!

CREATING A SYSTEM OF INDICATORS OF CLIMATE CHANGE

The USGCRP is leading an effort to identify an initial set of physical, societal, and ecological indicators that will provide information about our nation's changing climate to decision-makers and the public. These indicators, forming the central information of a proposed pilot study, are expected to provide a high level overview of change across the nation and inform decisions related to impacts, adaptation, vulnerability, and mitigation. Indicators also will be part of ongoing assessment activities, serving as a way to monitor changing conditions in near-real time (more information about the NCA indicators effort is [available online](#)).

Over the past several months, over 150 scientists and practitioners have been in conversations to develop the scientific basis for the selection of indicators using conceptual models and the recommendations of indicators that link to this conceptual model. These recommendations have been drafted and are currently under review to ensure that the recommended indicators support the vision of the national climate indicator system. The final recommendation of indicators and research priorities will be provided by the NCADAC Indicator Work Group in the fall. The indicators team will then work with the Global Change Information System (GCIS) to pilot a small set of indicators in early 2014, with a full launch of the system proposed for 2015. If you are interested in becoming involved with the effort or would like more information, please send an email to indicators@usgcrp.gov.

As a contribution to this effort, and to the NCA sustained assessment process, the Earth Science Division at NASA announced a competitive research opportunity to use NASA-produced data and/or modeling products, in concert with other data sources, to develop and test indicators. The selections were announced in June, and the program will support 14 projects with a total funding of approximately \$2.5M for a period of 12-18 months. These research projects will demonstrate new climate change indicators that could be considered for inclusion in future revisions to the NCA indicators system. Dr. Paul Houser, at George Mason University, was selected as the team lead. For more information on each of the funded research projects, please check out [this link](#).

CLIMATE CHANGE AND INDIGENOUS PEOPLES IN THE UNITED STATES

A forthcoming special issue of *Climatic Change* on "Climate Change and Indigenous Peoples in the United States: Impacts, Experiences, and Actions" includes a number of articles originally submitted as technical inputs to the NCA. The special issue was edited in part by NCA intern and engagement support staff member Julie Koppel Maldonado. Several of the articles are now [available online](#) through *Climatic Change*.

[News from the US Global Change Research Program](#)

- [Supporting recovery and adaptation planning in areas affected by Superstorm Sandy](#)
- [Metadata Access Tool for Climate and Health \(MATCH\)](#)
- [Training the next generation of the climate science workforce](#)
- [Updates from the US Carbon Cycle Science Program](#)

SUPPORTING RECOVERY AND ADAPTATION PLANNING IN AREAS AFFECTED BY SUPERSTORM SANDY



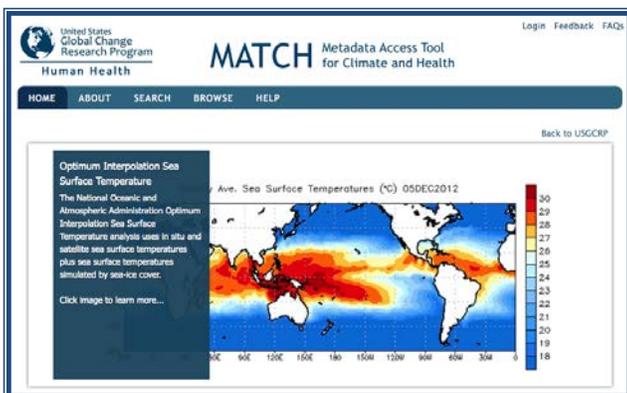
This map product displays what the future 100-year floodplain boundaries could look like with sea level rise.

On June 20, an interagency sea level rise and floodplain mapping team from USGCRP, NOAA, the U.S. Army Corps of Engineers, and FEMA released a Sea Level Rise Planning Tool to support recovery and adaptation planning in the Hurricane Sandy-affected areas. This partnership was carried out in coordination with NYC and the states of NY and NJ. Using the best available science and data, these Federal partners have jointly developed this tool to help state and local officials, community planners, and infrastructure managers understand possible future flood risks from sea level rise and use that information in planning decisions. The tool does not tell communities or individuals how to rebuild. But it can help inform decisions on how to balance the cost of rebuilding stronger and safer based on the amount of risk a community can tolerate over the long term.

A page on the current USGCRP website serves as the [portal to the resources](#) hosted on the websites of the partner agencies and to additional information on the data behind the tool. Frequently Asked Questions about how and why communities might use the tool are also provided, along with sea level rise maps and a flood elevation calculator. These sea level rise map services ([click here](#) for NJ and NY State counties and [click here](#) for NYC) integrate the best available FEMA flood hazard data for each location with information on future sea level rise from two different peer-reviewed sources: “[Global Sea Level Rise Scenarios for the United States National Climate Assessment](#)” and the [New York City Panel on Climate Change \(NPCC\) Climate Risk Information 2013](#). The sea level change [calculator tool](#) created by the US Army Corps of Engineers complements these NOAA maps by providing site-specific detail on projected flood elevations for 5-year intervals from 2010 to 2100. Such information can be used by citizens, elected officials, floodplain managers, professional engineers, and surveyors, in conjunction with other local information, for scenario planning, risk management, and adaptation.

METADATA ACCESS TOOL FOR CLIMATE AND HEALTH (MATCH)

On May 9th, USGCRP launched MATCH (Metadata Access Tool for Climate and Health). MATCH started as a small project from the Climate Change and Human Health Workgroup and grew into an online clearinghouse of over 9,000 federal data sets on climate and health. These data sets offer new opportunities to further improve public health and climate science communities. For instance, if investigators are trying to correlate warmer weather with incidence of heat stroke in a specific location, they can search MATCH for applicable data sets that can be synthesized to produce actionable insights.



MATCH garnered a great deal of media attention when it was released in conjunction with President Obama’s new government-wide [Open Data Policy](#). This policy requires that all new data generated by the government shall be made publically available and MATCH does exactly that. The CCHHG is already planning the next phase of MATCH with the intention of making it more interactive and user-friendly. Please [visit the website](#) for more information and to try out MATCH for yourself.

TRAINING THE NEXT GENERATION OF THE CLIMATE SCIENCE WORKFORCE

Fourteen interns hailing from colleges and universities around the country are making essential contributions to the work of USGCRP this summer. With interests ranging from chemistry to economics to meteorology, the students are working on a variety of projects including the development of the new indicators program, the National Climate Assessment report, and the MATCH system. While at USGCRP, the interns have the opportunity to expand their experience and skills as well as gain a larger perspective on the science and politics of climate change at the national level.

Current USGCRP interns (left to right): Justin Goldstein, GCIS (U of Oklahoma, PhD Geography 2013); Mark Shimamoto, MATCH (Climate Change and Human Health, George Washington U. MPH Environmental Health Science and Policy 2014); Eric Goldman, Indicators (U of Maryland, BA Economics and BS Environmental Science and Policy 2015); Tess Carter, NCA (Brown, BS Chemistry 2016); Ella Clarke, Indicators (U of Maryland, BS Environmental Economics, BA Spanish Language 2014); Tara Failey, Communications/Education (George Washington, MPH Environmental Health Science and Policy, 2013); Jordan McCammon, Indicators (Penn State, BS Meteorology 2016); Marques Gilliam, Indicators (U of Maryland, BA Environmental Science and Policy 2015); Christian McGillen, Indicators (Virginia Tech, BS Meteorology 2015); Krista Mantsch, NCA (Indiana U, MPA Environmental Policy 2014); Ryan Clark, Indicators (U.S. Coast Guard/U of Maryland, MS Atmospheric and Oceanic Sciences 2014); Sarah Anderson, Indicators (Washington State, Environmental Science PhD 2015); Not pictured: Samantha Brooks, SGCR (American University, MA Global Environmental Policy 2013), Julie Maldonado, NCA (American University, PhD Candidate Public Anthropology).



UPDATES FROM THE US CARBON CYCLE SCIENCE PROGRAM

Scientists from the North American Carbon Program (NACP) community and the US Carbon Program Office published [an article](#) summarizing the major outcomes of the 4th biennial NACP All Investigators' Meeting in the American Geophysical Union's May 14 publication Eos, Vol. 94, No. 20.

With support from NASA, DOE, and NSF, among others, the U.S. Carbon Cycle Science Program Office's international partner, the Global Carbon Project Office, released the [newest global CO2 budget paper](#). This publication establishes a process for future updates leading to full transparency and traceability of what goes into the annual CO2 budget. All data presented in the paper can be [downloaded](#) from the Carbon Dioxide Information Analysis Center at Oak Ridge National Laboratory.



Participants in the Global Carbon Program-IIASA Negative Emissions Workshop

In April, at the Global Carbon Project (GCP) Scientific Steering Group meeting, Gyami Shrestha represented the U.S. Carbon Cycle Science Program at the Global Carbon Project (GCP) Scientific Steering Group meeting in Vienna, Austria. She presented the Program's short and long-term priorities and discussed ways to foster the US Carbon Cycle Science Program's collaborations with the GCP and other international partners, including potential new future US-GCP activities such as a new Regional Carbon Cycle Assessment and Processes (RECCAP II) and the Global Carbon Atlas to which Gyami Shrestha was invited to serve as an editorial board member. Gyami also participated in the GCP-IIASA Negative Emissions Workshop.

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](#) 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.

