



# NEWSLETTER

OF THE

## U.S. GLOBAL CHANGE RESEARCH PROGRAM



It's been a hot summer for global change science. [Future Earth](#), an emerging sustainability research program with [close ties to USGCRP's mission](#), named the United States among the major hubs for its new global secretariat. Several USGCRP member agencies announced a plan for U.S. participation in the [Global Energy and Water Exchanges Project \(GEWEX\)](#), with an initial commitment to enhance multi-agency collaboration on the science of land-atmosphere interactions and the terrestrial water cycle in North America. USGCRP and its member agencies also supported the launch of a new [food resilience](#) theme on [climate.data.gov](#), featuring data and tools to help the agriculture sector manage the impacts of climate change.

On the programmatic side, USGCRP convened a successful workshop with [NCA](#) contributors, [NCAnet](#) members, agency representatives, and evaluation experts to develop frameworks for evaluating the [Third National Climate Assessment](#). The workshop report, expected in September, will include potential evaluation focus areas, target audiences, possible metrics and methods, and options for embedding evaluation and learning into the [sustained assessment process](#). Read on to learn about more NCA integration activities, key workshops and events, and how the social sciences can help translate global change research into action.

### NEWS ON THE NATIONAL CLIMATE ASSESSMENT

#### New Regional Guides Help Educators Use the NCA

NOAA, the [NCAnet Education Affinity Group](#), and members of the [CLEAN network](#) have published a series of [guides to help educators](#) teach climate using the [regional chapters of the Third NCA](#). The guides break down key messages for each of the ten U.S. regions covered in the report, and each key message is supported by guiding questions, figures from the report, lesson plans, videos, and other resources. The guides also demonstrate how the Third NCA can be applied to the integration of [Next Generation Science Standards](#) in science education, with an accompanying [overview and specific examples](#) for use at the middle school and high school levels.

#### NCA at ESA

Three NCA-focused sessions took place at the [Ecological Society of America \(ESA\) Annual Meeting](#) in Sacramento, CA. Over twenty NCA authors and USGCRP staff members gave talks during two Ignite sessions: one focused on regions, one focused on sectors through the lens of impacts on ecosystems. While many presenters were new to the Ignite format—5-minute speed presentations where the slides auto-advance every 15 seconds—all rose to the challenge to communicate their science in new ways. The talks painted a grim picture of climate change impacts but also illuminated paths forward through adaptation and collaborative action. Both sessions ended with audience participation in discussions of climate science, ecosystem services, policy and decision making, and solutions to climate challenges. At a



USGCRP staff member Emily Cloyd presents at an ESA Ignite session. (Credit: Tess Carter)



A panel of NCA authors at ESA talks about how ecologists can use and contribute to climate assessments. (Credit: Emily Cloyd)

third session, authors of the [Third NCA](#) and the [IPCC Fifth Assessment Report](#) discussed how ecologists can use these major assessments in their research, help with outreach efforts, and contribute to future assessments.

## NEWS ON ADVANCING SCIENCE

### Workshops on Global Change Scenarios

In June, USGCRP held [two workshops](#) on developing scenarios for global changes in [population](#) and [land use/land cover](#), respectively. These workshops brought together modelers and

scenario users to identify critical uncertainties in projecting changes in population; key natural, socioeconomic, and policy variables affecting land use/land cover change; and capabilities (and gaps therein) to produce long-term population and land use/land cover projections for future research needs. [Resources](#) and [presentations](#) from each workshop are available online; stay tuned for workshop reports.

### Upcoming PI Meeting: North American Carbon Program and Ameriflux

*January 26–29, Washington, DC*

A [call for abstracts and breakout sessions](#) has been issued for the joint PI meeting of the [North American Carbon Program \(NACP\)](#) and [Ameriflux](#). In addition to NACP and AmeriFlux researchers and students, the meeting will be relevant to scientists and program managers associated with U.S., Canadian, and Mexican carbon programs; social scientists and policy makers; and anyone studying the carbon cycle in North America and its coastal waters.

## NEWS ON INFORMING DECISIONS

### Social Sciences and Global Change: From Research to Action

Several USGCRP staff members, agency researchers, and colleagues from the academic community co-authored a [commentary paper](#) in *Nature Climate Change* based on the recommendations from USGCRP's [Social Sciences Task Force](#). The paper places USGCRP efforts to integrate social and biophysical sciences in the context of a wider movement to understand global change as a societal challenge and address it through informed policy actions.

## MORE NEWS

### Climate and Health Spotlights in Two Events

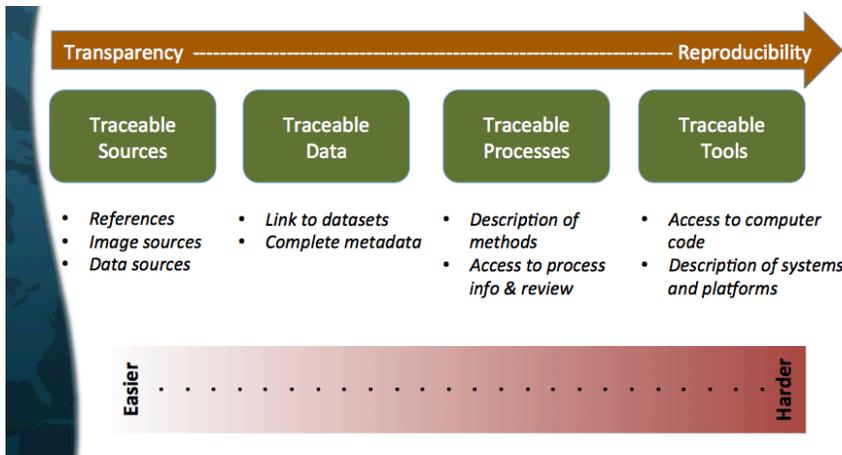
In early August, USGCRP member agency HHS held its first all-hands [briefing on the effects of climate change on human health](#). Co-chairs of USGCRP's interagency [Climate Change and Human Health Group \(CCHHG\)](#) and others gave presentations about climate science, critical health impacts, and populations of concern for an audience of over five hundred. USGCRP and the CCHHG were highlighted throughout as key suppliers of climate and health information, with examples including the [Third NCA](#), the [Metadata Access Tool for Climate and Health \(MATCH\)](#), and the interagency [Special Report on the Impacts of Climate Change on Human Health](#) (currently in development). The Special Report was also discussed at the [Expert Consultation on the Effects of Climate Change on Children's Health](#), held at HHS in July. This was the first public event of a newly formed, climate-focused subcommittee of the [Presidential task force on children's environmental health](#). Experts discussed children's unique vulnerabilities to the health effects of climate change and identified areas in need of further research. Many Special Report authors were in the audience to absorb this information; each chapter of the Special Report will include a section on populations of concern.

### GCIS Highlighted at the ESIP Summer Meeting

The [Summer Meeting](#) of the [Federation of Earth Science Information Partners \(ESIP\)](#) in Frisco, CO, featured a technical session devoted to USGCRP's [Global Change Information System \(GCIS\)](#). The GCIS—a structured data server ultimately

intended to become a unified web-based source of information about global change—currently provides metadata and documentation for the findings of the [Third NCA](#) and interfaces with [globalchange.gov](http://globalchange.gov) to serve this and other content to

front-end users. At the ESIP session, USGCRP staff gave presentations and led discussions on the GCIS, its information model, and its practical applications, with a focus on support for the NCA launch in May. The audience, which included data managers, data scientists, programmers, and academics, engaged with USGCRP staff in conversations about collaborative, open framework approaches to enhance semantic web interoperability between institutions. Among the key next steps for the GCIS are 1) moving beyond transparency toward full traceability for the Third NCA (see left), and 2) supporting traceability through metadata and documentation for the forthcoming [Special Report on the Impacts of Climate Change on Human Health](#).



This diagram shows the components of traceability for a scientific report along a continuum from transparency to reproducibility. The GCIS provides some of these components, and continues to progress toward full traceability, for the Third NCA. (Credit: USGCRP GCIS team)

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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. 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 conducted under the auspices of the Global Change Research Act of 1990, which requires a report to the President and Congress every four years that evaluates, integrates, and interprets USGCRP findings. The NCA aims to incorporate advances in the understanding of climate science into larger social, ecological, and policy systems, thereby providing integrated analyses of impacts and vulnerability, helping the Federal Government to prioritize climate science investments, and delivering science that can be used by communities throughout our Nation to plan for a more sustainable and environmentally sound future.