



The USGCRP's [U.S. Carbon Cycle Science Program](#) is making progress in understanding the changes, magnitudes, and distributions of carbon sources and sinks, the processes operating within and between major terrestrial, oceanic, and atmospheric carbon reservoirs, and the underlying mechanisms involved, including human activities, fossil fuel emissions, land use, and climate forcings. Program scientists are currently quantifying many of the intricate complexities and interactions between the major carbon reservoirs and climate. To execute this undertaking, Federal agencies and departments with carbon cycle interests coordinate, manage, and support the overall science and implementation plans under two major thrusts:

[North American Carbon Program](#)

(NACP) and

[Ocean Carbon and Climate Change \(OCCC\) Program](#)

. As these science programs mature and generate needed carbon observations, field and experimental results are being used to constrain advanced carbon models at scales from experimental sites to regions as an important means of incorporating site, regional, and global observations into global carbon models and analyses. The ultimate objective is to develop increasingly realistic and predictive coupled carbon-climate and Earth system models to provide better insight into future feedbacks and drivers between the major components of the Earth system.

The [U.S. Carbon Cycle Science Program](#) contributes to all goals of the CCSP Strategic Plan

(2003)—focusing particularly on Goal 2, “Improved quantification of the forces bringing about changes in the Earth’s climate and related systems.” The program addresses directly the six overarching carbon cycle questions of Chapter 7 of the CCSP Strategic Plan. The research element is synergistic with the Ecosystems, Global Water Cycle, Climate Variability and Change, Atmospheric Composition, Land-Use and Land-Cover Change, and Human Contributions and Responses research elements. The agencies responsible for carbon cycle research are DOE; NASA; NIST; NOAA; NSF; USDA’s Agricultural Research Service (ARS), Cooperative State Research, Education, and Extension Service (CSREES), Forest Service, and Natural Resources Conservation Service (NRCS); and USGS. Together, they have planned and are coordinating a multidisciplinary research strategy to integrate the broad range of needed infrastructure and resources, scientific expertise, and stakeholder input essential for program success and improved decision processes. More information can be found at [www.carboncyclescience.gov](http://www.carboncyclescience.gov)