



Understanding and Responding to Our Changing Planet

The U.S. Global Change Research Program in the 2012 Budget

The 2012 Budget sustains the President's commitment to global-change research as part of a government-wide effort to understand, predict, mitigate, and adapt to climate change and transition the United States to a clean-energy economy. Investments in climate science over the past several decades have contributed to an improved understanding of global climate and our changing planet. **The 2012 Budget provides \$2.6 billion for the multi-agency U.S. Global Change Research Program (USGCRP), an increase of 20.3 percent or \$446 million over the 2010 enacted level** (see Table).

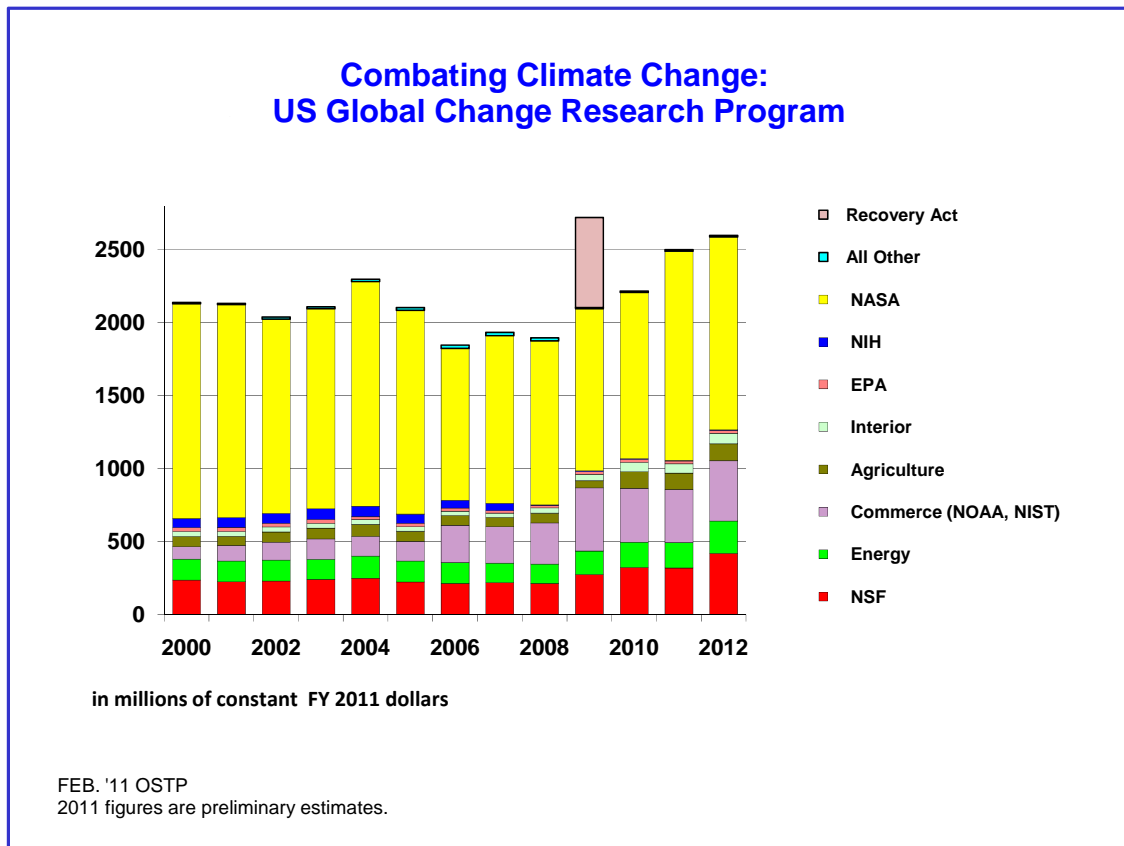


Figure 1.

After inheriting a program suffering from several years of declining funding, the Obama Administration has revitalized the USGCRP (see Figure 1). The 2009 Omnibus Appropriations Act reversed the downward funding trends in the USGCRP, and the Recovery Act provided an additional one-time boost for key climate programs; the 2010, 2011, and now the 2012 Budgets keep USGCRP funding on an upward trajectory. These proposed increases are fiscally

responsible; they are part of a 2012 Budget that freezes non-security discretionary spending at 2010 levels for the second year in a row and reduces projected deficits while making investments needed to win the future.

The USGCRP was mandated by Congress in the Global Change Research Act of 1990 (P.L. 101-606) to improve understanding of uncertainties in climate science, expand global observing systems, develop science-based resources to support policymaking and resource management, and communicate findings broadly among scientific and stakeholder communities. Thirteen departments and agencies participate in the USGCRP.

In addition to enhancing research and modeling of the physical climate system, funding for the USGCRP will allow for a comprehensive, coordinated focus on four areas of particular need: Earth observations, adaptation research, integrated assessment, and climate services. Funding in the 2012 Budget will support an integrated and continuing National Climate Assessment of climate change science, impacts, vulnerabilities, and response strategies, and a significant interagency research effort to monitor, report, and verify greenhouse-gas emissions. More information on the USGCRP is available at www.globalchange.gov/.

Selected Agency Highlights of the USGCRP in the 2012 Budget

- The Department of Commerce's **National Oceanic and Atmospheric Administration (NOAA)** is an important contributor to Federal oceanic and atmospheric research and is one of the key providers of climate services in the Federal government. The 2012 Budget consolidates climate activities in NOAA, creating a Climate Service line office to improve the management of related research, data, and products and to coordinate with other agencies and partners, and supports NOAA's contributions to the National Climate Assessment. NOAA USGCRP funding totals \$414 million in the 2012 Budget, an increase of 15.6 percent over 2010.

- The **National Aeronautics and Space Administration's (NASA)** budget includes a sustained investment in climate science. NASA's Earth-science program conducts first-of-a-kind demonstration flights of sensors in air and space in an effort to foster scientific understanding of the Earth system and to improve the ability to forecast climate change and natural disasters. The 2012 Budget supports several research satellites in development, an initiative to monitor changes in polar ice sheets, enhancements to climate models, and NASA contributions to the National Climate Assessment. NASA will continue to develop a replacement of the Orbiting Carbon Observatory (OCO).

- The **National Science Foundation (NSF)** is the primary source of support for academic research for most non-biomedical disciplines, funding basic research across the entire spectrum of the sciences and engineering. NSF USGCRP support totals \$425 million in the 2012 Budget, an increase of 33.0 percent over the 2010 level. NSF proposes to expand the Science, Engineering and Education for Sustainability (SEES) initiative to advance climate and energy science, engineering, and education.

-The 2012 Budget will enable the **Department of Energy (DOE)** to use its extensive history and experience in support of treaty monitoring and verification to develop a prototypic verification measurement system for greenhouse-gas emissions. This effort will synthesize inputs from a

wide array of sensors and measuring platforms, inventory systems, and modeling methods to better understand carbon sources and sinks and track anthropogenic greenhouse-gas emissions.

- The 2012 Budget provides \$73 million for USGCRP programs in the **Department of the Interior**, an increase of \$10 million or 15.9 percent over the 2010 funding level. Interior's lead science agency, the **U.S. Geological Survey (USGS)**, funds several programs to understand the impacts of climate change on natural resources, including a framework of climate science centers and landscape conservation cooperatives that will develop research-based decision support tools for use by Federal land managers.

Table. U.S. Global Change Research Program
(budget authority in millions)

	FY 2010 Actual	FY 2012 Budget	Change FY 10-12 Amount	Percent
U.S. Global Change Research Program (USGCRP)				
National Science Foundation	320	425	106	33.0%
Energy	171	224	54	31.5%
Commerce (NOAA, NIST)	363	419	56	15.4%
Agriculture	113	117	4	3.9%
Interior (USGS)	63	73	10	15.9%
Environmental Protection Agency	21	21	0	0.0%
National Institutes of Health	4	4	0	0.0%
NASA	1,123	1,338	215	19.1%
Smithsonian	7	8	1	18.6%
Transportation	3	3	0	0.0%
Total USGCRP	2,187	2,633	446	20.4%

Note: Because 2011 appropriations have not been enacted, year-to-year changes are **2010** to 2012.

USGCRP figures do not include Climate Change International Assistance programs in USAID.