



**CONGRESSIONAL BUDGET OFFICE
COST ESTIMATE**

May 28, 2008

S. 2307

Global Change Research Improvement Act of 2007

*As reported by the Senate Committee on Commerce, Science, and Transportation
on May 22, 2008*

SUMMARY

S. 2307 would amend the Global Change Research Act of 1990 (GCRA), establish the National Climate Service, create a Science and Technology Assessment Service, and expand other federal programs that conduct research on global climate change. For these purposes, the bill would authorize funding over the 2008-2013 period. Assuming appropriation of the amounts specifically authorized by the bill or estimated to be necessary, CBO estimates that implementing S. 2307 would cost \$2.1 billion over the 2009-2013 period. Enacting S. 2307 would not affect revenues or direct spending.

S. 2307 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act (UMRA) and would impose no costs on state, local, or tribal governments.

ESTIMATED COST TO THE FEDERAL GOVERNMENT

The estimated budgetary impact of S. 2307 is shown in the following table. The costs of this legislation fall within budget functions 250 (general science, space, and technology) and 300 (natural resources and environment).

	By Fiscal Year, in Millions of Dollars					2009-
	2009	2010	2011	2012	2013	2013
CHANGES IN SPENDING SUBJECT TO APPROPRIATION						
Amendments to the Global Change Research Act						
Authorization Level	35	35	35	35	35	175
Estimated Outlays	15	25	35	35	35	145
National Climate Service						
Authorization Level	300	350	400	450	500	2,000
Estimated Outlays	186	277	363	418	470	1,714
Science and Technology Assessment Service						
Estimated Authorization Level	35	36	36	37	38	182
Estimated Outlays	18	41	40	37	38	174
Climate Change Technology						
Authorization Level	15	15	15	15	15	75
Estimated Outlays	10	15	15	15	15	70
Abrupt Climate Change Research						
Authorization Level	10	10	10	10	10	50
Estimated Outlays	5	10	10	10	10	45
Total Proposed Changes						
Estimated Authorization Level	395	446	496	547	598	2,482
Estimated Outlays	234	368	463	515	568	2,148

BASIS OF ESTIMATE

For this estimate, CBO assumes that S. 2307 will be enacted near the end of fiscal year 2008 and that the amounts specifically authorized or estimated to be necessary to implement the bill will be appropriated for each year beginning in 2009. Estimated outlays are based on historical spending patterns for similar research and administrative activities carried out by the National Oceanic and Atmospheric Administration (NOAA), the National Aeronautics and Space Administration (NASA), and the National Science Foundation (NSF).

Amendments to the Global Change Research Act of 1990

Title I would amend the GCRA to reorganize the way that research on global change is coordinated among federal agencies. Assuming appropriation of the amounts authorized, CBO estimates that implementing title I would cost \$145 million over the 2009-2013 period.

The title would authorize the appropriation of specific amounts for fiscal years 2009 through 2013 for certain activities, including:

- \$30 million per year (beginning in fiscal year 2008) for research grants awarded by NSF,
- \$1 million for each of fiscal years 2009 through 2013 for an independent review of research programs carried out under the GCRA, and
- \$4 million for a new Global Change Research Coordination Office.

Title I also would change the structure of the various committees and offices that coordinate federal research on global change, provide for additional oversight of the strategic planning process carried out under the 1990 act, require independent review of the products developed through the research program, and authorize the appropriation of whatever amounts are necessary for fiscal years 2009 through 2013 to implement the proposed changes. Based on information provided by NOAA, NASA, and NSF, CBO estimates that carrying out those provisions of title I would have no significant effect on federal spending because those agencies (and other coordinating bodies such as the Committee on Earth and Environmental Sciences) are already implementing most of the required changes. Each of those agencies currently spends between \$200 million and \$300 million annually for research programs carried out under the GCRA, including contributions to existing coordinating groups.

National Climate Service

Title II would establish the National Climate Service (NCS) within NOAA. The NCS, acting through a national center and a network of regional facilities, would monitor global climate conditions and provide predictions and other information. Title II would authorize the appropriation of between \$300 million and \$500 million a year for fiscal years 2009 through 2013 for the NCS. Assuming appropriation of those amounts, CBO estimates that the Service would spend about \$1.7 billion over the five-year period and \$300 million after 2013.

Science and Technology Assessment Service

Title III would create a Science and Technology Assessment Service (STAS) within the legislative branch of the U.S. government. The service would develop information for the Congress on science and technology issues and policies. For that purpose, the bill would authorize the appropriation of whatever amounts are necessary. Based on the size and funding levels of similar legislative branch agencies such as the Office of Technology

Assessment, CBO estimates that the new STAS would spend about \$175 million over the 2009-2013 period and \$40 million a year thereafter. Over the first three years, spending would include one-time costs to house and equip about 200 professional and administrative staff.

Climate Change Technology

Title IV would direct the National Institute of Standards and Technology (NIST) to conduct research on measurements and technologies that will help reduce the production of greenhouse gases. For that purpose, the bill would authorize the appropriation of \$15 million for each of fiscal years 2009 through 2013. CBO estimates that NIST would spend \$70 million over the 2009-2013 period (and \$5 million in 2014) for this purpose.

Abrupt Climate Change Research

Title V would direct NOAA to conduct research on abrupt climate change (that is, changes that are so rapid that humans or nature have difficulty adapting). For that purpose, the bill would authorize the appropriation of \$10 million for each of fiscal years 2009 through 2013. CBO estimates that carrying out this title would cost \$45 million over the 2009-2013 period and \$5 million after 2013.

ESTIMATED INTERGOVERNMENTAL AND PRIVATE-SECTOR IMPACT

S. 2307 contains no intergovernmental or private-sector mandates as defined in UMRA. The bill would authorize grant programs for research on climate change. Any costs to state, local, or tribal governments receiving such grants would result from complying with conditions of aid.

ESTIMATE PREPARED BY:

Federal Spending: Deborah Reis

Impact on State, Local, and Tribal Governments: Neil Hood

Impact on the Private Sector: Amy Petz

ESTIMATE APPROVED BY:

Theresa Gullo

Deputy Assistant Director for Budget Analysis