OUR CHANGING PLANET

THE FY 2002
U.S. GLOBAL CHANGE RESEARCH PROGRAM

A Report by the Subcommittee on Global Change Research
Committee on Environmental and Natural Resources
of the National Science and Technology Council

A Supplement to the President's Fiscal Year 2002 Budget

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US Global Change Research Program

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Members of Congress:

I am pleased to transmit to you a copy of *Our Changing Planet: The FY 2002 U. S. Global Change Research Program.* This document, which is produced annually, describes the activities and plans of the U.S. Global Change Research Program (USGCRP), which was established in 1989 and authorized by Congress in the Global Change Research Act of 1990. Strong bipartisan support for this interagency program has resulted in more than a decade's worth of scientific accomplishment.

As we look ahead to next year and beyond, a number of developments are taking place that will bring about changes in the USGCRP. On June 6th, the National Academy of Sciences released *Climate Change Science: An Analysis of Some Key Questions*, which identified a number of major outstanding uncertainties in our current understanding of human-induced climate change. The report states:

"Because there is considerable uncertainty in current understanding of how the climate system varies naturally and reacts to emissions of greenhouse gases and aerosols, current estimates of the magnitude of future warming should be regarded as tentative and subject to future adjustments (either upward or downward). Reducing the wide range of uncertainty inherent in current model predictions of global climate change will require major advances in understanding and modeling of both (1) the factors that determine atmospheric concentrations of greenhouse gases and aerosols, and (2) the so-called 'feedbacks' that determine the sensitivity of the climate system to a prescribed increase in greenhouse gases. There is also a pressing need for a global system designed for monitoring climate."

"Climate projections will always be far from perfect. Confidence limits and probabilistic information, with their basis, should always be considered as an integral part of the information that climate scientists provide to policy- and decision-makers. Without them, the IPCC SPM [Summary for Policymakers] could give the impression that the science of global warming is 'settled,' even though many uncertainties still remain. The emission scenarios used by the IPCC provide a good example. Human dimensions will almost certainly alter emissions over the next century. Because we cannot predict either the course of human populations, technology, or societal transitions with any clarity, the actual greenhouse gas emissions could either be greater or less than the IPCC scenarios.

Without an understanding of the sources and degree of uncertainty, decision-makers could fail to define the best ways to deal with the serious issue of global warming."

On June 11, the President announced that the U.S will undertake a new Climate Change Research Initiative focused on reducing key areas of uncertainty in climate change science. The USGCRP agencies are taking part in the development of this initiative, and we expect this process to result in significant changes to some aspects of our climate modeling, observation, and research efforts over the next year, including enhanced international cooperation in each area. The National Academy's findings will strongly influence the federal research priorities that are established.

The USGCRP is already collaborating with the science community to refine the USGCRP long-term plan. Following the successful example established by the USGCRP carbon cycle initiative, we are also developing more detailed science strategies for each of the program's major research areas. These strategies will be updated regularly to assure that the program meets the information needs of public and private sector decision-makers and takes full advantage of evolving capabilities, including NASA's Earth Observing System satellites, more advanced atmospheric chemistry and ecosystem models, and improvements in information and communications technologies.

This is an exciting time for global change research. I believe the USGCRP is poised to greatly enhance our understanding of climate change and its potential ecological and socio-economic impacts, and contribute to the development of effective coping strategies for the US and other nations.

Margaret Leinen
Chair, Subcommittee on Global Change Research

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