

OVERVIEW OF THE CLIMATE CHANGE RESEARCH INITIATIVE

from the

Strategic Plan for the Climate Change Science Program

By the agencies and staff of the
US Climate Change Science Program

Review draft dated 11 November 2002

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11 November 2002

Dear Colleague,

The Climate Change Science Program will hold the U.S. Climate Change Science Program Planning Workshop for Scientists and Stakeholders at the Marriott Wardman Park Hotel in Washington, D.C., from 3-5 December 2002. The purpose of the Workshop is to provide a comprehensive review of the discussion draft of the Strategic Plan for U.S. climate change and global change research. This Workshop will offer extensive opportunities for the scientific and stakeholder communities to provide comment and input to the Climate Change Science Program Strategic Plan. When finalized by April 2003, the Strategic Plan will provide the principal guidance for U.S. climate change and global change research during the next several years, subject to revisions as appropriate to respond to newly developed information and decision support tools.

We are writing to request your comments on the discussion draft of the Climate Change Science Program Strategic Plan. Comments on all elements of the plan from all communities are essential in order to improve the plan and identify gaps. In your review, we ask you to provide a perspective on the content, implications, and challenges outlined in the plan as well as suggestions for any alternate approaches you wish to have considered, and the types of climate and global change information required by policy makers and resource managers. We also ask that you comment on any inconsistencies within or across chapters, and omissions of important topics. For any shortcomings that you note in the draft, please propose specific remedies. To participate in the review it is not necessary that you review the entire plan.

We ask that comments be submitted by E-mail to <comments@climatescience.gov>. All comments submitted by 13 January 2003 will be posted on the <<http://www.climatescience.gov>> website for public review. While we are unable to promised detailed responses to individual comments, we confirm that all submitted comments will be given consideration during the development of the final version of the Strategic Plan.

Attached to this letter are instructions and format guidelines for submitting review comments. Following the instructions will ensure that your comments are properly processed and given appropriate consideration. If you wish to distribute copies of the plan to colleagues to participate in the review, please provide them with a copy of this letter as well as the attached instructions and format guidelines. We have posted the plan on the workshop website at <<http://www.climatescience.gov>>. PDF files for individual chapters of the plan can be downloaded from this site. If you have any questions, please contact: Sandy MacCracken at 1-202-419-3483 (voice), 1-202-223-3065 (fax), or via the address in the footer below.

We appreciate your contribution of time and expertise to this review, and look forward to your response.

Sincerely,

James R. Mahoney, Ph.D.
Assistant Secretary of Commerce for Oceans and Atmosphere, and
Director, U.S. Climate Change Science Program

Instructions For Submission of Strategic Plan Review Comments

Thank you for participating in the review process. Please follow the instructions for preparing and submitting your review. Using the format guidance described below will facilitate our processing of reviewer comments and assure that your comments are given appropriate consideration. An example of the format is also provided. Comments are due by **13 January, 2003**.

- Select the chapter(s) or sections of chapters which you wish to review. It is not necessary that you review the entire plan. In your comments, please consider the following issues:
 - **Overview:** overview on the content, implications, and challenges outlined in the plan;
 - **Agreement/Disagreement:** areas of agreement and disagreement, as appropriate;
 - **Suggestions :** suggestions for alternative approaches, if appropriate;
 - **Inconsistencies:** inconsistencies within or across chapters;
 - **Omissions :** omissions of important topics;
 - **Remedies:** specific remedies for identified shortcomings of the draft plan;
 - **Stakeholder climate information:** type of climate and global change information required by representative groups;
 - **Other:** other comments not covered above.
- Please do not comment on grammar, spelling, or punctuation. Professional copy editing will correct deficiencies in these areas for the final draft.
- Use the format guidance that follows for organizing your comments.
- Submit your comments by email to <comments@climatescience.gov> by 13 January, 2003.

Format Guidance for Comments

Please provide background information about yourself on the first page of your comments: your name(s), organization(s), area of expertise(s), mailing address(es), telephone and fax numbers, and email address(es).

- Overview comments on the chapter should follow your background information and should be numbered.
- Comments that are specific to particular pages, paragraphs or lines of the chapter should follow your overview comments and should identify the page and line numbers to which they apply.
- Comments that refer to a table or figure should identify the table or figure number. In the case of tables, please also identify the row and column to which the comment refers.
- Order your comments sequentially by page and line number.
- At the end of each comment, please insert your name and affiliation.

Format Example for Comments

I. Background Information

Name(s): John Doe

Organization(s): University College

Mailing Address(es): 101 1st Street, New York, New York, 10001

Phone (s): 800-555-5555

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Area of Expertise: Atmospheric Composition

II. Overview Comments on Chapter 5: Atmospheric Composition

First Overview Comment: (Comment)

Reviewer's name, affiliation: John Doe, University College

Second Overview Comment: (Comment)

Reviewer's name, affiliation: John Doe, University College

III. Specific Comments on Chapter 5: Atmospheric Composition

Page 57, Line 5: (Comment)

John Doe, University College

Page 58, Line 32 - Page 59, Line 5: (Comment)

John Doe, University College

Table 1-4, Row 3, Column 6: (Comment)

John Doe, University College

Please send comments by email to <comments@climatescience.gov>

Foreword

In February 2002 President George W. Bush announced the formation of a new management structure, the Climate Change Science Program (CCSP), to coordinate and direct the US research efforts in the areas of climate and global change. These research efforts include the US Global Change Research Program (USGCRP) authorized by the Global Change Research Act of 1990, and the Climate Change Research Initiative (CCRI) launched by the President in June 2001 to reduce significant uncertainties in climate science, improve global climate observing systems, and develop resources to support policymaking and resource management.

The President's Climate Change Research Initiative was launched to provide a distinct focus to the 13-year old Global Change Research Program. The CCRI focus is defined by a group of uncertainties about the global climate system that have been identified by policymakers and analyzed by the National Research Council in a 2001 report requested by the Administration.

The Climate Change Science Program aims to balance the near-term (2- to 4-year) focus of the CCRI with the breadth of the USGCRP, pursuing accelerated development of answers to the scientific aspects of key climate policy issues while continuing to seek advances in the knowledge of the physical, biological and chemical processes that influence the Earth system.

This *discussion draft* strategic plan has been prepared by the thirteen federal agencies participating in the CCSP, with input from a large number of scientific steering groups and coordination by the CCSP staff under the leadership of Dr. Richard H. Moss, to provide a vehicle to facilitate comments and suggestions by the scientific and stakeholder communities interested in climate and global change issues.

We welcome comments on this draft plan by all interested persons. Comments may be provided during the US Climate Change Science Program Planning Workshop for Scientists and Stakeholders being held in Washington, DC on December 3 – 5, 2002, and during a subsequent public comment period extending to January 13, 2003. Information about the Workshop and the written comment opportunities is available on the web site www.climatescience.gov. A specially formed committee of the National Research Council is also reviewing this draft plan, and will provide its analysis of the plan, the workshop and the written comments received after the workshop. A final version of the strategic plan, setting a path for the next few years of research under the CCSP, will be published by April 2003. We appreciate your assistance with this important process.

James R. Mahoney, Ph.D.

Assistant Secretary of Commerce for Oceans and Atmosphere, and
Director, Climate Change Science Program

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- Overview
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- Chapter 3. Climate Quality Observations, Monitoring, and Data Management
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- Chapter 12. Grand Challenges in Modeling, Observations, and Information Systems

Part III. Communication, Cooperation, and Management

- Chapter 13. Reporting and Outreach
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Acronyms

Authors and Contributors

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OVERVIEW OF THE CLIMATE CHANGE RESEARCH INITIATIVE

9 In May 2001, the Administration requested the National Academy of Sciences (NAS) to
10 review the *Third Assessment Report* of the Intergovernmental Panel on Climate Change
11 (IPCC, 2001) and recommend research priorities to reduce uncertainties in climate science.
12 The resulting report, *Climate Change Science: An Analysis Of Some Key Questions* (NRC,
13 2001a), includes the following (summarized) recommendations:

- 14 • Reduce the range of uncertainty in climate change projections by pursuing major
15 advances in the understanding and modeling of:
 - 16 ○ The factors that determine atmospheric concentrations of greenhouse gases and
17 aerosols; and
 - 18 ○ The so-called "feedbacks" that determine the sensitivity of the climate system to a
19 prescribed increase in greenhouse gases.
- 20 • Ensure the existence of a long-term monitoring system that provides a more definitive
21 observational foundation to evaluate decadal- to century-scale changes, including
22 observations of key state variables and more comprehensive regional measurements of
23 climate and greenhouse gases.
- 24 • Enhance the research enterprise that seeks to improve our understanding of the
25 interactions between the environment and society, including support of:
 - 26 ○ Interdisciplinary research that couples physical, chemical, biological and human
27 systems;
 - 28 ○ An improved capability to integrate emerging scientific knowledge, and its significant
29 uncertainty, into improved decision support systems; and
 - 30 ○ Research at the regional and sectoral level that promotes analysis of the response of
31 human and natural systems to multiple stresses.

32 Following this request to the NAS, on June 11, 2001, President Bush announced the
33 establishment of the US Climate Change Research Initiative (CCRI) to study areas of
34 uncertainty and identify priority research areas where investments could make a difference. The
35 President directed the Secretary of Commerce to set priorities for additional investments in
36 climate change research, review such investments, and to improve coordination among federal
37 agencies. He committed resources to build climate observation systems and proposed joint
38 ventures with international partners to develop state-of-the-art climate models to improve our
39 limited understanding of the causes and impacts of climate change.

40 The CCRI was developed in collaboration with the US agencies involved in climate and global
41 change research, taking into account the NRC recommendations, and is meant to enhance the
ongoing research activities of the US Global Change Research Program (USGCRP). The
proposed CCRI research initiatives emerged from a common understanding of key research
needs, including those priority areas already identified by the USGCRP.

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2 The resulting CCRI represents a focusing of resources and enhanced interagency coordination
3 of ongoing and planned research into those elements of the USGCRP that can best support
4 improved public discussion and decisionmaking in the near term. In particular, the goal of the
5 CCRI is to measurably improve the integration of scientific knowledge, including measures of
6 uncertainty, into effective decision support systems and resources. Whereas the USGCRP
7 represents an important long-term investment, the CCRI programs will produce deliverables
8 useful to policymakers in a short time frame (2-4 years). To meet these goals, the CCRI aims
9 to:

- 10 • Supplement ongoing USGCRP elements where additional effort would rapidly lead to
11 critical decision support information;
- 12 • Enhance and integrate observation, monitoring, and data management systems to
13 support climate process and trend analyses; and
- 14 • Provide structured information that can inform policy and decisionmaking, including the
15 use of best available models to address important uncertainties about climate change
16 and development of the range of plausible scenarios for drivers of climate change.

17
18 To be included in the CCRI, a program must both produce significant decision or policy-
19 relevant deliverables within a short timeframe; and contribute substantively to one or more of the
20 following activities:

- 21 • Address key and emerging climate change science areas that offer the prospect of
22 significant improvement in understanding of climate change phenomena, and where
23 accelerated development of decision support information is possible.
- 24 • Optimize observations, monitoring, and data management systems of “climate quality
25 data” (“Climate quality data” are required for historical perspective, trend analysis,
26 process evaluation, and model development and calibration. These data have particular
27 characteristics including high quality, homogeneity, and continuity; and the availability of
28 full documentation with respect to their technical characteristics).
- 29 • Develop decision support resources including scenarios and comparisons; quantification
30 of the sensitivity and uncertainty of the climate system to natural and anthropogenic
31 (human-caused) forcings through the implementation and application of models; and
32 structured information for national, regional, and local discussions about possible global
33 change causes, impacts, benefits, and mitigation and adaptation strategies.

34 35 **References:**

36 IPCC, 2001. Intergovernmental Panel on Climate Change, *Climate Change 2001*. Third
37 Assessment Report of the IPCC. (Cambridge, United Kingdom, and New York: Cambridge
38 University Press). Includes:

- 39 • IPCC, 2001a. [*The Scientific Basis*](#), a contribution of Working Group I.
- 40 • IPCC, 2001b. [*Impacts, Adaptation, and Vulnerability*](#), a contribution of Working
41 Group II.

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- 1 • IPCC, 2001c. [*Mitigation*](#), a contribution of Working Group III.
- 2 • IPCC, 2001d. [*Synthesis Report*](#). A Contribution of Working Groups I, II, and III
- 3 NRC, 2001a. National Research Council, Committee on the Science of Climate Change,
- 4 [*Climate Change Science: An Analysis of Some Key Questions*](#) (Washington, DC: National
- 5 Academy Press).
- 6