

ACIA Arctic Climate Impact Assessment

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Progress Report for the Arctic Council's Senior Arctic Officials

Oulu, Finland

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Objective:

Climate variability and change, and increases in UV radiation, have become important issues in the Arctic over the past few decades. It has become imperative to examine possible future impacts on the environment and its living resources, on human health, and on relevant economic sectors. The Arctic Climate Impact Assessment is expected to lead to useful information for the nations of the Arctic region, their economy, resources, and peoples.

ACIA Products:

Three major volumes will be completed by 2004 for submission to the Arctic Council through AMAP, CAFF, and IASC; they are a peer-reviewed scientific volume, a synthesis document summarizing results, and a policy document providing recommendations for coping and adaptation measures. The seventeen chapters of the scientific volume of the assessment are organized under five major headings:

- I. Introduction and Overview
- II. The Arctic as Part of the Global Climate System
- III. Physical and Biological Systems and their Response to Climate Change
- IV. Impacts of Climate and UV Changes on Humans and their Activities
- V. Synthesis

Climate Scenarios:

The ACIA is using a single IPCC-type scenario, i.e. the SRES B2 scenario. B2 is a "moderate" climate change scenario and it contains projections out to the year 2100. The B2 scenario is being implemented on five climate models (GCMs) that are readily available to scientists in North American and European centers: Canadian Climate Center, NCAR, GFDL, Hadley Center, and Max Planck Institute. Time slices around 2020, 2050 and 2080 are being used, which are the ones also used by the IPCC.

Two figures illustrate the climate scenarios derived from computer models for the Arctic. Fig. 1 shows changes in annual mean temperature ($^{\circ}$ C) for a doubling of CO_2 , from a composite of 19 GCMs (from the ACIA Stockholm Report). Fig 2. illustrates the generally good agreement between four of the models used by the ACIA (results from the fifth were not yet available) of annual mean temperature changes in the Arctic as a function of time. These results are part of the climate scenarios now being used for the assessment.

Chapter Writing:

The writing of the 17 ACIA chapters is being done by lead and contributing authors, guided by the ACIA Assessment Steering Committee (ASC), which will hold its next meeting in Oslo, Norway in early June. About 180 lead and co-lead authors, contributing authors, and consulting authors have been selected from all Arctic countries as well as scientist from other nations with strong Arctic scientific capabilities. A substantial number of workshops of the chapter writing groups have been held and a first draft of the scientific report will be ready for internal review by November 2002. Revisions and external review will follow and the project is on schedule.

Webpage

The ACIA webpage, which contains details on ACIA, can be found at: <http://www.acia.uaf.edu/>

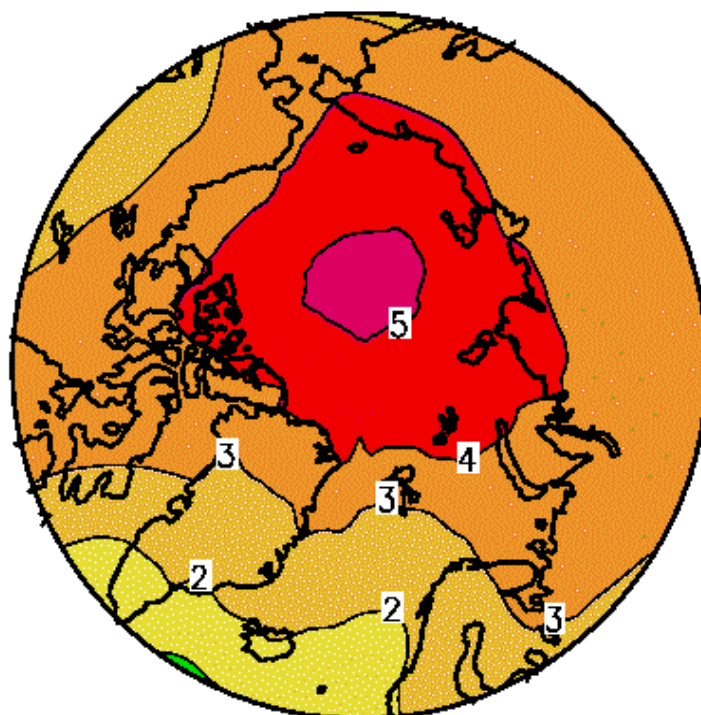


Fig. 1

Changes in annual mean temperature ($^{\circ}$ C) for a doubling of CO_2 , from a composite of 19 General Circulation Models (ACIA Stockholm Report).

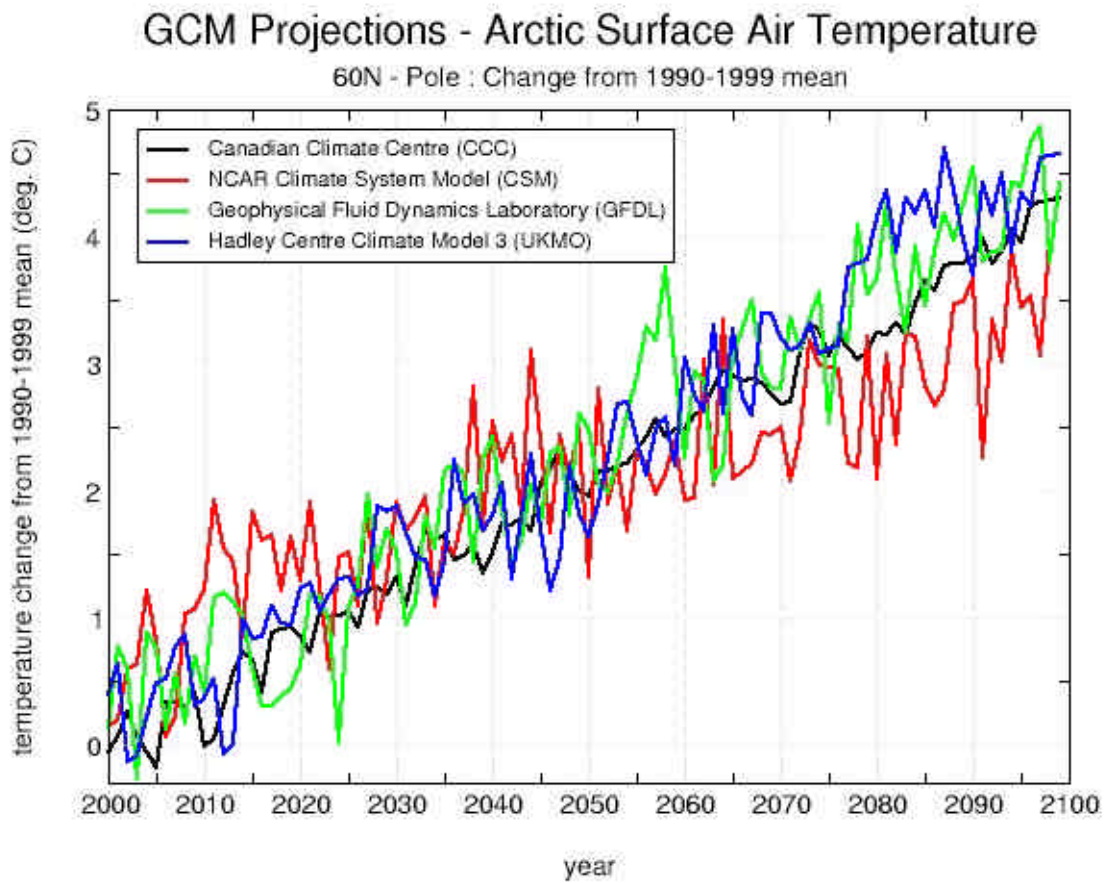


Fig. 2

Projections of Arctic surface air temperatures by four GCMs selected by the ACIA.

Timetable for ACIA:

