Integrated Science and Computing Support for National Climate Service

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PROJECT DESCRIPTION

The purpose of this project is to begin the development of an information technology (IT)-based bridge between decision support for a National Climate Service and state-of-the-art advanced climate change modeling, beginning with implications of climate change for water-sector decision making as a test case, with some additional attention to decision making related to climate change risks in coastal areas.

More specifically, this project is intended to (a) link advanced computing with climate service types of decision support by identifying climate science-related questions of interest to US water management and coastal vulnerability-reduction decision-makers, (b) take a first cut at matching these questions with the capacity of existing advanced climate models to meet climate decision support needs, (c) assess what could be done with advanced climate models, even though it cannot be done with current capabilities, and (d) develop alternative strategies for meeting decision support needs that cannot be fully satisfied by advanced climate models.

SIGNIFICANCE

NOAA, the Department of the Interior, and other Global Change Research Program agencies have embarked on an effort to develop a National Climate Service, which will provide decision-makers across the country with relevant information about observed and projected climate changes, somewhat analogous to information about weather provided by the National Weather Service. NOAA wants to ensure that such information services are built on the very best available science and technology (S&T), not only regarding climate data and projections but also regarding informatics, visualization, community modeling approaches, and other S&T areas related to state-of-the-art decision support.

ORNL is a recognized leader in many of these S&T areas, from data to visualization. Through this project, NOAA not only explores the potentials of such S&T to make national climate services more effective, but also seeks to improve knowledge about decision-maker needs, capacities, and alternative modes of interaction as they relate to what climate science and data have to offer.