The Global Ocean Observing System for Climate

FY2009 Annual Report

Ocean Climate Observation Program

Climate Program Office
www.cpo.noaa.gov

National Oceanic and Atmospheric Administration
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Foreword

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The Ocean Climate Observation Program is pleased to present the Fiscal-Year 2009 *Annual Report on the Ocean Observing System for Climate*. While this effort serves primarily as an internal management tool, we hope the report will develop into an authoritative public record of the progress of the global observing system and its effectiveness in documenting the ocean's contribution to our Earth's changing climate.

Many people have contributed to this report either directly or indirectly, including scientists, engineers, technicians, researchers, teachers, and students at laboratories, universities, and oceanographic and atmospheric centers and institutions. The officers, crews, and volunteers on board the vessels where the fieldwork occurred played a major role as well. This document is a collaborative effort produced by a dedicated team of individuals focused on learning more about the influences of our oceans on climate.

The plan for implementing the global ocean observing system has been developed and agreed upon internationally, and we have taken great strides as a global community to fulfill the long-term goals that will achieve this monumental effort. We are proud to be part of the NOAA team that has worked closely with partners from more than 70 nations to bring the global observing system this far.

In FY 2009 incremental advances were made across the observing networks allowing the overall observing system to grow from 60% to 61% complete; the Global Drifting Buoy array was maintained at its design strength of 1250 data buoys in service for the fifth continuous year since 2005; the Argo profiling float array was maintained at its design strength of 3000 floats in sustained service for the third continuous year since 2007; new buoys were deployed in the Indian Ocean to bring RAMA, the tropical moored buoy array in the Indian Ocean, to 24 stations in operation; a NOAA-NSF CLIVAR/Carbon survey line was completed in the Indian Ocean; a new means of determining seasonal air-sea CO_2 fluxes was implemented, blending ocean surface measurements of pCO_2 with remote sensing; and the international OceanObs'09 conference was held in Venice, Italy to develop priorities for the next generation ocean observing system. Many additional accomplishments are cited in the report.

Sustained ocean observations form the basis for establishing the trends and variability in essential climate variables, which are reported each year in the annual *State of the Climate* special edition of the Bulletin of the American Meteorological Society. In FY 2009 the Global Oceans chapter of the BAMS report edited by the Office of Climate Observation and written largely by OCO supported scientists, contained nine sections that heavily reflect the synergistic value of combining in-situ observations with remote sensing to describe the state of the ocean in climate. We believe that by integrating the presentation of oceanic and atmospheric essential climate variables, the report better brings to life the full value of the observations.

The Office of Climate Observation believes that the accomplishments outlined within this report will help the global community understand more clearly and quantitatively the role of the oceans in our Earth's ever-changing climate system. We look forward to the future as we unravel the mystery of our oceans together. It is with great pleasure that we present this work.

Joel M. Levy, Editor
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