

HISTORY OF OCEAN CARBON PROGRAMS OF IOC and SCOR

The IOC was in large part founded upon the need to understand ocean carbon and the recognition that this was a project that must be addressed at an international and intergovernmental level. In 1960 the creation of the IOC was agreed and endorsed by the First Oceanographic Conference gathered in Copenhagen. During the preparatory meeting for that Conference that took place in Paris in March 1960, Dr. Roger Revelle, then Director of Scripps Institution of Oceanography in La Jolla, summarized in a brief statement the purposes of this new UN organization:

“In considering the needs for international co-operation in the marine sciences, it is convenient to divide the problem into three parts: research, oceanic surveys and assistance to underdeveloped countries. By oceanographic research we mean: attempts to discover new principles, testing of hypotheses, development of new techniques, conduct of experiments, and exploration of unknown areas in order to define scientific and technical problems. In general, oceanographic research like many other kinds of research, is best done by individuals or small groups working independently. However, there are some research problems that require international co-operation. For example, the exploration of an almost unknown area such as the Indian Ocean can be accomplished more rapidly and more effectively by the co-operative efforts of ships and scientists from many countries. Scientific problems that require nearly simultaneous observations over a wide area or over the entire ocean also demand international co-operation in taking the observations, and close co-ordination to ensure comparability of results. An example is the present attempt to determine the total carbon dioxide content in the atmosphere and the change in this content with time as a result of the input from fossil fuel combustion and the loss to the ocean and biosphere. One of the questions we are asking is: Where is the carbon dioxide absorbed by the ocean? Does it remain in the surface layers or does it extend throughout the ocean volume? (...)”

A Brief History of the CO₂ Panel:

- In 1979, recognizing the importance of the ocean's role in global climate change, IOC and SCOR formed the first Committee on Climate Change and the Ocean (CCCO), with Roger Revelle as its Chairman.
- In 1984, the CCCO established a CO₂ Advisory Panel under the chairmanship of Revelle. This panel recommended to CCCO an observation programme and sampling strategy to determine the global oceanic CO₂ inventory with a relative accuracy of 10-20 Gigatons, nearly one order of magnitude better than the GEOSECS data.
- When the SCOR Committee for JGOFS was established in 1987 it was recognized that understanding the carbon cycle would be central to JGOFS and that global oceanic CO₂ measurements would be critical to that understanding. As the objectives of both groups were nearly congruent with respect to CO₂, it was agreed that JGOFS and CCCO should jointly assume responsibility for executing a global ocean CO₂ observation programme in association with the World Ocean Circulation Experiment (WOCE).

- Accordingly, in September 1988 the CCCO panel was disbanded and the Joint JGOFS-CCCO Advisory Panel on Ocean CO₂ was created to provide the primary focus for international planning and commitment for implementing such a programme.
- A decision to phase out CCCO in December 1992 was followed by an agreement to continue this Panel under joint sponsorship of JGOFS and IOC. The Panel continued its efforts under this arrangement until it was dissolved in 2000.
- With the completion of the field phases of WOCE and JGOFS, and the evolution of CLIVAR and its priorities, agreement was reached to restructure the Panel as a Joint SCOR-IOC Advisory Panel on Ocean CO₂ with revised terms of reference reflecting the changing circumstances and new priorities. This new Panel met for the first time in September 2000. New programme areas outlined by the Panel include providing scientific input and coordination for ocean carbon measurements in observing programmes and on Volunteer Observing Ships, providing advice and advocating the development of standards and reference materials for ocean carbon measurements, and maintaining a watching brief on ocean carbon sequestration activities.
- In 2002, the IGBP-IHDP-WCRP Global Carbon Project requested that the SCOR-IOC Advisory Panel on Ocean CO₂ serve as an affiliate programme of the GCP, which both the IOC and SCOR accepted. The major emphasis of this new project was to provide a single source of information on ocean carbon activities to facilitate integration with terrestrial and atmospheric carbon studies. The first workshop of this newly formed International Ocean Carbon Coordination Project outlined the requirements for the project and strongly urged the sponsor organizations to undertake seriously this initiative by providing adequate secretariat support for an international project office.
- In 2005, after 2 international stakeholders' meetings, the IOCCP is requested to expand its mandate to include communication and coordination services for the full range of ocean carbon variables (not just CO₂) and to assist the global, regional, and national research programs as requested with coordination of research activities (not just large-scale observations). IOC and SCOR agreed to make the IOCCP a standing project, replacing the CO₂ Panel. New Terms of Reference were approved by the SCOR Executive Council and the 23rd Session of the IOC Assembly.