CONTINENTAL MARGINS – LINKING ECOSYSTEMS

The Continental Margins Open Science Meeting, September 17 – 21, 2007,
East China Normal University, Shanghai, China

Over 100 scientists from 25 countries came together to address global, regional, local and human pressures interactively impacting continental margin biogeochemical cycles, marine food webs, and society. Continental margins cover only 12% of the global ocean area yet account for more than 30% of global oceanic primary production. In addition, continental margins are the most intensely used regions of the world's ocean for natural commodities, including productive fisheries and mineral and petroleum resources. The land adjacent to continental margins hosts ~50% of the world's population, which will bear many direct impacts of global change on coastal margins. Understanding both natural- and human-influenced alterations of biogeochemical cycles and ecosystems on continental margins and the processes (including feedbacks) that threaten sustainability of these systems is therefore of global interest.

The purposes of the meeting were to:

- improve understanding of the linked biogeochemical, physical and human dimensions of continental margin systems,
- develop accurate predictive capacity for continental margin responses to environmental and anthropogenic drivers, and
- outline mechanisms for improved understanding of accelerating global change on continental margins and human society.

The approach--to integrate research and resource management strategies of the IMBER (Integrated Marine Biogeochemistry and Ecosystem Research) and LOICZ (Land Ocean Interaction in the Coastal Zone) programs--addressed the continuum across nearshore coastal waters (integrated with watersheds), the continental shelf, shelf break and upper slope of the open ocean.

Over the next three months Jack Middelburg and Nancy Rabalais, co-conveners of the conference and co-chairs of the Continental Margins Task Team, will coordinate a working group to synthesize the findings and recommendations of the meeting. The result will be a research plan that combines the strengths of the IMBER and LOICZ projects, and brings the resources of many nations to this area of research.

Important features of the draft plan are:

- Carbon and nitrogen transformations and transfers along and across continental margins and at benthic-pelagic and air-sea interfaces,
- Better understanding of present conditions and fit-for-purpose predictive capability for climate change scenarios,
- Processes linking biogeochemical processes, primary and secondary production and

living resources,
- Continental margins as sources or sinks of CO_2 and potential shifts with increasing atmospheric CO_2 and changing biogeochemical cycles
- Comparative continental ecosystem analyses, and
- Potential regime shifts.

The draft research strategy will be available on the IMBER (http://www.imber.info) and LOICZ (http://www.loicz.org) websites for community comments early in 2008, prior to finalization and endorsement at the IGBP (International Geosphere Biosphere Programme) Congress in May 2008.

The conference book of abstracts, and soon the conference presentations, are available from https://www.confmanager.com/main.cfm?cid=792.

Much of the success of the conference relied on great organization from the local organizing committee, the IMBER IPO staff, and the financial support for the conference from IMBER, LOICZ, East China Normal University, the Chinese Ministry of Education, the National Science Foundation of China, the Shanghai Municipality, Scientific Committee on Oceanic Research (SCOR) and the U.S. National Science Foundation.

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