

2004 SCOR Meeting on Coordination of International Marine Research Projects
(as of 8 December 2006)

Recommendations

The following recommendations resulted from the meeting.

Mechanisms for Interactions Among Projects

Given the opportunities for scientific and operational cooperation among research projects, more attention should be given to several aspects of project coordination:

- Identify individuals that are members of more than one project Scientific Steering Committee (SSC). If there is not joint membership between relevant projects, identify new people as liaison people between projects. In either case, the responsibility for communication between groups should be made clear to the linking individuals.

A review of the membership lists of the scientific steering committees of various projects indicates present cross-memberships include

- **Tim Jickells (UK) served on both the SOLAS SSC and GEOTRACES Planning Committee.**
- **Raymond Pollard (UK) served on both the IMBER SSC and the GEOTRACES Planning Committee.**
- **Ed Boyle (USA) served on the GEOTRACES Planning Committee and the IMAGES Scientific Committee**

Cross-membership among SSCs can be useful in cases in which projects are pursuing related research, but it does not seem to be a mechanism that is used very often, perhaps because of the time required to participate on even one SSC. A more practical approach is probably to appoint liaisons among projects (or ex-officio members) who would be copied on emails to the SSCs of the projects, and invited to attend SSC meetings at their own expense.

- SCOR should investigate setting up a list-server system/email aliases that can be used for communication between projects, IPO Executive Officers, Chairs, or both. Such aliases might be set up at Johns Hopkins University.

A listserv (OCEAN-PROJECTS) has been set up at Johns Hopkins University and is available for communication among projects. I have taken the liberty to add the chairs and executive officers of all the major research projects that have been engaged in this activity in the past, plus one or two additional ones, to the listserv. If you do not want to be on this listserv, please let me know and I will remove you.

- Where projects have regional nodes or structures, they should develop channels of communication at regional levels. Projects should consider convening inter-project coordination meetings at regional levels, where appropriate.

Most projects do not have formal regional nodes or structures, but the cruise database (when developed) could help projects interact at the regional level.

- SCOR should seek funds for projects to hold annual coordination meetings, with the agenda items set by the projects. Potential topics for future meetings include standardisation of Web sites and project data management.

SCOR did not locate funding for a meeting in 2005, but did receive funding from the Sloan Foundation for a 2006 meeting. The Sloan Foundation has offered half of the funding for the next meeting, if SCOR or the projects come up with the remainder of the funding.

- A searchable international database of research cruises should be maintained on the Web. This database might be an enhancement of the University of Delaware Web site (see <http://www.researchvessels.org/>).

After the Mestre meeting, I became aware that the Partnership for Observations of the Global Ocean (POGO) has been discussing the same issue. POGO has submitted a proposal to the Sloan Foundation to support SeaDataNet to set up the cruise database. It would be very useful if every project had a place on their Web site that listed both past and future cruises.

Project Data Management

A small subgroup met to develop specific recommendations on project data management, to follow up on the results of the Liverpool meeting sponsored by SCOR and IGBP in December 2003 (see <http://www.jhu.edu/scor/DataMgmt.htm>).

Immediate Actions

- Meeting participants and SCOR staff should write a short *EOS*-type paper to be published in programs newsletters, *EOS*, Challenger Society, *OCEANOGRAPHY Magazine*, etc., giving the main recommendations from the Liverpool meeting, abstracting and updating information from the meeting report, including the lessons learned from previous projects' successes and failures. It would also be helpful to provide (on the Web) tutorials and visualizations regarding data management.

Roy Lowry (chair of the Liverpool meeting) has been offered by the *Journal of Marine Systems* the chance to publish a summary of the Liverpool meeting there. Lowry, Wendy Broadgate, and I are working on this paper. We will determine after this paper is completed whether it is necessary to write any additional documents for submission elsewhere.

- IOC/IODE should initiate a project to support multi-national programs to retrieve cruise reports from before the period of electronic cruise reports (this will require

translation and scanning of reports after the scientific value of the data has been assessed by local experts).

I have contacted IODE about this and am waiting for a reply. The Global Oceanographic Data Archaeology and Rescue (GODAR) project is probably doing part of what was envisioned by this recommendation.

- SCOR should prepare a letter to project managers and funding agencies to convey the high priority of preparing and budgeting for data management as an important part of projects, and to ensure inter-operability of data from different projects, in terms of metadata, data discovery, data transport, data archival, and data access.

This action remains to be accomplished. We need from the projects a list of contacts to whom such a letter should be sent.

- SCOR and other relevant organizations should implement ways to guarantee long-term archiving and management of ocean data, not depending on individual agencies/national policies, and encouraging the use of the World Data Centers.

SCOR has encouraged this through the model data policy that was developed by the projects at the Liverpool meeting. It remains for the projects to implement.

- Projects should use GBIF standards for species-level geo-referenced data, and species-specific data should be put into OBIS.

This recommendation is aimed at the projects, particularly projects that are collecting species-specific data, such as CoML, GLOBEC, IMBER, and GEOHAB.

Longer term actions

- Increase the benefit of data submission for individual/small projects without data management facilities. Data will be submitted by the investigators in such projects only if there is a net benefit for them to do so. Some of the benefits that could be developed include
 - easy data access through the Web
 - training in accessing and using the data
 - software for easy intercomparison between an investigator's own data and what is available from others, to generate maps, sections, graphs, etc.
 - availability of the database as a research tool
 - standardization of formats should not be an issue if each file carries its metadata
 - inter-operability should become a "black-box" automatic system, with catalogue sets of "overall" formats and "minimum common" formats, standard search engines, XML-like files.

This is a recommendation to projects and World Data Centers.

- Increase the access of non-scientists to information/data from projects. Each project should have a front page with easy-to-understand results and nice figures and maps.

This is a recommendation to projects.

- SCOR should develop a Web portal to all available quality-controlled ocean databases, with short descriptions and available tools for exploitation.

This recommendation is too substantial for SCOR to implement with current staffing levels. We welcome suggestions for how to accomplish this.

Project Interactions with GOOS

The meeting provided an opportunity for project representatives to meet with the chairs of the GOOS Open Observation Panel for Climate (OOPC) and Coastal Observations Panel (COOP). A subgroup of meeting participants developed the following recommendations about project interactions with GOOS:

- GOOS presentations should be made at SSC meetings to inform SSCs about GOOS plans and to encourage projects to provide input to GOOS.

Have the projects implemented this recommendation?

- Links to GOOS should be considered when project SSCs are formed.

Have the projects implemented this recommendation?

- A non-carbon biogeochemist member should be added to OOPC.

OOPC has Tommy Dickey doing multi-tasking on biogeochemistry sensors on OOPC, and they invited another biogeochemist to present at the OOPC meeting in Tokyo in 2005.

- GOOS and projects should work together to create joint working groups/workshops on topics such as biogeochemical measurements, sensor technology, and environmental indicators. SCOR should consider a working group on these topics.

This is partially a project responsibility. SCOR does not create working groups based on its own ideas, but will entertain working group proposals on any topic related to marine science. Information about SCOR working groups and how to apply can be found at <http://www.jhu.edu/scor/WGs.htm>.

- Both GOOS and research projects should link their Web sites to one another.

To simplify this, I created a page with links to all large-scale research projects to which GOOS can link (see <http://www.jhu.edu/scor/ProjCoord-front.htm>). Individual projects should still consider providing a link to GOOS on their Web sites, to inform project scientists about GOOS.

- GOOS should transmit to the projects needs for specific routine measurements to build the ocean observing system and help in deploying Argo floats, etc.

Communication concerning observing system deployment needs has been via the GCOS Implementation Plan (GCOS-92) and special presentations when requested to IOC - GOOS SC, I-GOOS, IOC Assembly; WMO - GCOS SSC, UNFCCC - SBSTA and COP; WCRP - JSC, CLIVAR SSG & GSOP, WOAP; IOC/WMO JCOMM; POGO. GOOS and the projects probably need to be more proactive about communicating to each other GOOS capabilities and project data needs, respectively.

- SCOR is involved in the development of the Coastal IGOS Theme and should offer to be involved in the review of the Ocean IGOS Theme, which is due to take place shortly.

SCOR funded a participant in the review of the Ocean IGOS Theme and will participate in any other way that will be helpful.

Project Needs for Ocean Time Series Stations

- GOOS or OceanSITES should maintain a list of time-series observation programs, similar to the list of research cruises maintained at the University of Delaware. OceanSITES should make available on its Web site a simple list of time-series sites.

Checking with OceanSITES.

- A useful capability of time-series stations and other systems would be coded animal tracking.

Idea forwarded to OceanSITES.

- Projects should overlay their needs for time-series sites on the OceanSITES map of sites (see <http://www.oceansites.org/OceanSITES/networkmap.html>).

Have any projects done this?

Coordination of Project Research in the Southern Ocean

- SCOR should circulate to meeting participants any announcements about IPY.

This has been done as announcements have been received. The projects seem to be well aware of IPY developments and several have proposed IPY projects. The SCAR/SCOR Group of Experts on Oceanography is taking on this task.

- Research projects should consider the desirability of forming links between themselves and SCAR, and vice versa, where they have strong Southern Ocean interests.

GLOBEC and iAnZone now have formal relationships with SCAR.

Project Contributions to Global Environmental Assessments

- Global assessments relevant to the projects (e.g., IPCC and MA) need to make known their data needs.

I asked the Millennium Ecosystem Assessment, but received not reply.

- If the MA conducts a post-assessment meeting to plan for the next assessment, it would be useful for the projects and GOOS to attend such a meeting to ensure that the marine and coastal parts of the next assessment have the data it needs.

I asked the Millennium Ecosystem Assessment, but received not reply.

- There is a need to (1) develop and standardize indicators and (2) identify what data are needed for better assessments.

I transmitted the recommendation to the Millennium Ecosystem Assessment.

- Projects should consider whether to provide data to the next IPCC and/or MA assessments and, if so, to initiate a process to do so.

Have the projects done anything about this?