

DMTT Update: Dissemination And Stewardship Of JGOFS Data

by Margarita E. Conkright and Bernard Avril

Members of the JGOFS Data Management Task Team met at the U.S. National Oceanographic Data Center (NODC) in Maryland during January to review the status of JGOFS data sets, discuss current activities and make plans for the future.

DMTT members attending were Margarita Conkright of the Ocean Climate Laboratory, NODC (chair); Bernard Avril of the JGOFS International Project Office (IPO) in Norway; Cynthia Chandler of the U.S. JGOFS data management office; Christine Hammond, Woods Hole Oceanographic Institution, U.S.; Joachim Herrmann of the German JGOFS data management office; Roy Lowry of the British Oceanographic Data Centre; Takeharu Miyake of the Japan Oceanographic Data Center; Jaswant Sarupria of the National Institute of Oceanography, India, and Donald Spear of the Canadian Marine Environmental Data Service.

Conkright and her NODC colleagues Lee Danzler and Sydney Levitus served as hosts to the gathering. Attending as guests were Michael Diepenbroek from the World Data Centre for Marine Environmental Sciences (WDC-MARE) in Germany and Robert Gelfeld, Todd O'Brien and Renée Tatusko from the NODC/World Data Centre for Oceanography in the U.S.

The DMTT has completed the list of JGOFS cruises from all participating countries, thanks to ongoing efforts at the JGOFS IPO. The web address for this site is <http://ads.smr.uib.no/jgofs/inventory/index.htm#Cruises>

Preparation of the JGOFS master data set, recommendations for data management in future projects and lessons learned from JGOFS were central topics at the DMTT meeting. Discussion centered first around the experiences of DMTT members in se-

curing both data and funding for data management. Among the points made was that data management should be more efficiently reviewed or be given adequate weight in research proposals. Meeting participants also noted that interaction of investigators and data managers from the start of each project would result in higher quality, integrated datasets available in a timely manner. They also agreed that data managers need to present a clear plan with clearly defined products at the beginning of each project, and that data management should be a clearly stated rather than implicit part of any science plan.

DMTT members concluded that an international framework with adequate financing and a coherent framework for data management is essential for future programs. They agreed to send a letter providing advice on data management for future international projects to the International Group of Funding Agencies for Global Change Research (IGFA) as well as to national funding agencies. This letter would recommend:

- Establishment of a centralized international project data center responsible for acquisition, access, and distribution of data to the World Data Center system to ensure its long-term archive;
- Establishment of full-time national data coordinators who will identify cruises and investigators associated with a program, work with principal investigators to ensure that data and associated metadata are complete and in common file and data formats, submit them to the international data center, and attach pertinent citations;
- Setting of a time limit after which all countries participating in a program must submit the data;
- Establishment of a minimum set of standards for reporting data and

metadata.

Efforts to secure funding in the U.S. for the production of a JGOFS master CD-ROM data set did not succeed. The recently established WDC-MARE has offered its support, especially thanks to a new initiative of the German Ministry for Research and Technology called Information Systems for Earth Management.

The new plans address the need to compile all JGOFS data sets into a comprehensive, uniform database that will ensure its rapid, worldwide dissemination and long-term stewardship. The focus will be on data acquisition from national JGOFS programmes and from individual scientists in participating countries without designated data managers, quality control and conversion into a common format.

The data sets will be imported into an information system called Pangaea that is accessible through the web (<http://www.pangaea.de>). The WDC-MARE, in collaboration with the JGOFS DMTT and IPO, will conduct the work and serve as the distributor of the JGOFS biogeochemical database.

Diepenbroek, who serves as technical director for Pangaea, reported on the progress of the proposal. Work will proceed with the assembly and transfer of data from the DMTT to the Pangaea information system. Once all data are in a common format with all available metadata, CD-ROMs will be produced for distribution to JGOFS investigators. The U.S. NODC/WDC will provide funding for the production and distribution of 500 CD-ROM sets. A first version of this series of CD-ROMs will be presented at the final JGOFS Open Science Conference in May 2003.

Representatives from various countries presented reports on their national JGOFS programs. Avril reported on the status of data manage-

ment for national programs not represented in the DMTT, and the group discussed specific recommendations for the integration of data sets from these countries.

Finally, the DMTT agreed upon the

core parameters to be included in the JGOFS data set and their designation, units and format, as well as the accompanying metadata and a user interface for both the online database and the series of CD-ROMs. Each

CD-ROM will include JGOFS data, web links, metadata description, associated publications list and acknowledgement of principal investigators and funding agencies. ❖

Table 1: JGOFS and related data products available

CD-ROM	Source	Date
Biogeochemical Ocean Flux Study (BOFS)	BODC, UK	1994
Ocean Margin Exchange Project (OMEX I)	BODC, UK	1997
Southern Ocean JGOFS Cruise ANT X/6	NIOZ, NL	1997
Netherlands Indian Ocean Programme	NIOZ, NL	1997
Arabesque (U.K. Arabian Sea cruises)	BODC, UK	1998
Hawaii Ocean Time-series (HOT)	U.Hawaii, US	1999
JGOFS International Collection: Arabian Sea	DMTT	1999
JGOFS-India	NIO, India	1999
Northwest Pacific Carbon Cycle Study (NoPaCCS)	JODC, Japan	1999
Japan zooplankton data, western Pacific (K. Odate collection 1951-1990)	JODC	1999
European Sub-polar Ocean Prog. (ESOP-2)	U.Bergen, Norway	1999
WOCE Hydrographic Data	SIO, US	1999
LOICZ Shelf Edge Study	BODC, UK	1999
Plankton Reactivity in the Marine Environment (Prime)	BODC, UK	2000
Canary Is. Azores Gibraltar Observations (CANIGO)	IMDC, Ireland	2000
Southern Ocean Iron Release Experiment (SOIREE)	NIWA, NZ	2001
Canada JGOFS Data Sets	MEDS	2001
OMEX II	BODC, UK	2001
OzGOFS Equatorial Pacific	CSIRO, Australia	2001
BOFS Version 2 plus Sterna data	BODC, UK	2002
Etude de Processus dans l'Océan Pacifique Equatorial (EPOPE)	OOV, France	ann. 2002
DYFAMED/SODYF	OOV, France	ann. 2002
UK World Ocean Circulation Experiment	BODC, UK	ann. 2002
Marginal Sea Flux Experiment (MASFLUX)	JODC, Japan	ann.

These CD-ROMs are available from national data managers or via the JGOFS IPO.

Data Available Online

Australian JGOFS (http://www.marine.csiro.au/datacentre/JGOFSweb/cmr_jgofs.htm)

U.S. JGOFS (http://usjgofs.whoi.edu/general_info/data_management.html)

Canadian JGOFS (<http://www.meds-sdmm.dfo-mpo.gc.ca/jgofs/>)

German JGOFS (<http://www.ifm.uni-kiel.de/jgofs/dm> or <http://www.pangaea.de>)

JGOFS-France (<http://www.obs-vlfr.fr/jgofs>)

Japan JGOFS (<http://www.kanso.co.jp/ocean/html-doc/english/top2.html>) or (http://www.jodc.go.jp/JGOFS_DMO/index.html)

Indian JGOFS (<http://www.indian-ocean.org/progfund/programs.htm#jgofs>) or (<http://www.indian-ocean.org/support/main.htm>)

BODC online database (<http://www.bodc.uk>)