

Limited Distribution

IOC/IODE-XVII/17
Paris, 27 January 2003
Original: English

INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION
(of UNESCO)

**Seventeenth Session of the IOC Committee on International Oceanographic Data and
Information Exchange (IODE), Paris, France, 3-7 March 2003**

**Global Oceanographic Data Archaeology and Rescue
(GODAR)**

(Sydney Levitus, Project Director)

1. Introduction

The IOC Global Oceanographic Data Archaeology and Rescue (GODAR) Project was established by the IOC in 1993. The goal of the project is to expand the historical database of ocean profile-plankton data. The project does this by:

- 1) locating historical data that are at risk of being lost due to media decay and disasters (archaeology). For example, paper and/or electronic media can become unreadable with time and/or they can be lost due to fire, flooding and other disasters;
- 2) digitizing manuscript data and copying data in electronic form that are at risk of loss and transferring these data into internationally available databases (rescue).

The IOC World Ocean Database (WOD) Project was established by the IOC in 2001. The purpose of the WOD Project is to stimulate international exchange of as much modern oceanographic data as possible, in as timely a manner as possible, for the purpose of constructing the most complete, integrated, global oceanographic databases possible. Activities include the development of regional atlases, regional databases, and regional quality control procedures.

2. Past Activities

Since its inception, the GODAR project has convened six regional workshops and an international review meeting in 1999. The Japan Oceanographic Data Center has initiated and hosts the GODAR WESTPAC Project for countries that border the western Pacific Ocean. The European Community initiated the MEDAR/MEDATLAS Project which focused on data archaeology and rescue for the Mediterranean Sea.

As a result of the IOC *World Ocean Database* (WOD) project the database also now includes additional modern data (post 1991 period) as well as data from new instrument types including:

- 1) 22,637 profiling float temperature profiles;
- 2) 811 Expendable Conductivity-Temperature-Depth casts;
- 3) 37,651 temperature-salinity casts from towed instruments;
- 4) 75,665 temperature profiles from instrumented Elephant Seals.

During the past IODE intersessional period (since the publication of WOD98) the following amounts of data have been added to the World Ocean Database as a result of the GODAR and WOD Projects:

- 1) 715,184 Ocean Station Data casts;
- 2) 120,783 Conductivity-Temperature-Depth casts
- 3) 336,953 Mechanical Bathythermograph Temperature (MBT) profiles;
- 4) 215,735 Expendable Bathythermograph Temperature (XBT) profiles.
- 5) 183,303 Fixed Platform (e.g., TAO, TRITON, PIRATA) temperature profiles.

All data collected to date as a result of both projects have been incorporated into a set of databases that have been distributed on CD-ROM and via the Internet. These include *World Ocean Atlas 1994* (WOA94), *World Ocean Database 1998* (WOD98), and *World Ocean Database 2001* (WOD01).

Since its inception, the GODAR Project has added the following data from the pre-1991 period to the databases available to the international scientific community from the IODE system:

- 1) 1,050,509 Ocean Station Data casts;
- 2) 145,167 CTD casts;
- 3) 1,148,947 MBT profiles;
- 4) 610,345 XBT profiles.

As part of the GODAR and WOD projects, the World Data Center for Oceanography-Silver Spring has initiated a new publication series entitled *International Ocean Atlas and Information Series*. The purpose of this series is to provide data, metadata, analyses, and information about ocean profile-plankton data on a regional basis. To date five publications (including CD-ROMs) have been published:

- 1) Matishov, G., A. Zuev, V. Golubev, N. Adrov, V. Slobodin, S. Levitus, and I. Smolyar, 1998: *Climatic Atlas of the Barents Sea 1998: Temperature, Salinity, Oxygen*. World Data Center-A for Oceanography, International Ocean Atlas Series, Vol. 1. NOAA Atlas NESDIS 26, U.S. Government Printing Office, 25 pp., 95 Figs.
- 2) Matishov, G., P. Makarevich, S. Timofeev, L. Kuznetsov, N. Druzhkov, V. Larionov, V. Golubev, A. Zuev, N. Adrov, V. Denisov, G. Iliyn, A. Kuznetsov, S. Denisenko, V. Savinov, A. Shavikyn, I. Smolyar, S. Levitus, T. O'Brien, O. Baranova, 2000: *Biological Atlas of the Arctic Seas 2000: Plankton of the Barents and Kara Seas*. World Data Center-A for Oceanography, International Ocean Atlas Series, Vol. 2. NOAA Atlas NESDIS 39, U.S. Government Printing Office, Wash., D.C., 348 pp.
- 3) Sapozhnikov, V., A. Gruzevich, V. Zubarevich, N. Arzhanova, N. Mordasova, I. Nalyotova, N. Torgunova, Y. Mikhailovskiy, I. Smolyar, 2001: *Hydrochemical Atlas of the Sea of Okhotsk 2001*. Eds. V. Sapozhnikov and S. Levitus, World Data Center-A for Oceanography, International Ocean Atlas and Information Series, Vol. 3. NOAA Atlas NESDIS 41, U.S. Government Printing Office, Wash., D.C., 155 pp.
- 4) S. Levitus and Y. Sychev, 2002: *Atlas of temperature-salinity frequency distributions: North Atlantic Ocean*. World Data Center for Oceanography- Silver Spring, International Ocean Atlas and Information Series, Vol. 4. NOAA Atlas NESDIS 55, U.S. Government Printing Office, Wash., D.C., 22 pp.
- 5) Mikhailov, N. N., E. D. Vyazilov, V. I. Lomonov, N.S. Studenov, M. D. Shaimardanov, 2002: *History of Russian Oceanographic Cruises, 2001*: Russian edition edited by M. Z. Shaimardanov, English edition edited by R. Tatusko and S. Levitus. World Data Center for Oceanography- Silver Spring, International Ocean

Atlas and Information Series, Vol. 5. NOAA Atlas NESDIS 56, U.S. Government Printing Office, Wash., D.C., 184 pp.

3. Objectives and Benefits

There is a pressing need for the international oceanographic and climate communities to have access to the most complete oceanographic profile-plankton databases possible for scientific studies in support of international agreements and treaties such as:

- 1) United Nations Framework Convention on Climate Change of 1992 (FCCC);
- 2) Convention of 1992 on Biological Diversity (Biodiversity Convention);
- 3) Convention of 1972 on the Prevention of Marine Pollution by Dumping Wastes and Other Matters (London Convention).

Both the most recent scientific assessment of climate change by the Intergovernmental Panel on Climate Change (IPCC, 1996) and the CLIVAR (1995) Science Implementation Plan strongly emphasize the need to understand the role of the ocean in climate change. Historical ocean profile-plankton data are of fundamental importance for the quality control of oceanographic data reported in real-time which are used for operational forecasting of phenomenon such as El Niño.

4. Proposed Activities

GODAR activities will continue based on the results of the six regional meetings held to date. The WOD project is considering convening a meeting to address quality-control issues of profile-plankton data.

5. Assessment Methods to Evaluate Results

For the GODAR Project, the amount of historical data located and the amount of historical data digitized and made available to the international scientific community as part of the World Ocean Database series represent the metrics used to assess the success of the project.

6. Work Plan, Timing and Budget

GODAR activities will continue to focus on data rescue in many countries as it has during the past three years. Particular emphasis will be placed on rescue of data from South American countries. No meetings are planned. The next database release is expected in 2005 but perhaps earlier.

7. Source of Funding

The support for WDC for Oceanography- Silver Spring GODAR activities comes from the NOAA Global Change Program and the NOAA Environmental Service Data and Information Management Program. Support for the Japan Oceanographic Data Center activities in leading the GODAR-WESTPAC Project come from the Japanese government. Support for the MEDAR/MEDATLAS Project was provided by the European Community.

8. Requested Actions from the Committee

Continued support from the Committee is requested. Funding of \$3,000. per year is requested for support of the GODAR Project Director travel budget. Funding may be requested in 2003 to partially support an international meeting on quality control of ocean profile-plankton data.

[end]