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Reports on activities:
World Data Center for Oceanography, Silver Spring
(Syd Levitus)

- 1. Name of Data Centre:**
World Data Center for Oceanography, Silver Spring
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- 3. Data Center Address:**
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- 4. Data Center URL:**
<http://www.nodc.noaa.gov/General/NODC-dataexch/NODC-wdca.html>
- 5. Data Center Designation Date:**
1957
- 6. Data Center Description:**

World Data Center (WDC) for Oceanography is one component of a global network of discipline subcenters that facilitate international exchange of scientific data. Originally established during the International Geophysical Year of 1957-58, the World Data Center System functions under the guidance of the International Council of Scientific Unions (ICSU). WDC for Oceanography, Silver Spring, is collocated with, and operated by the U.S. National Oceanographic Data Center (NODC).

In accordance with principles set forth by ICSU, WDC for Oceanography acquires, catalogues, and archives data, publications, and data inventory forms and makes them available to requesters in the international scientific community. To improve user access, the WDC provides copies of data it receives to its counterparts, World Data Center for Oceanography (Obninsk, Russia) and World Data Center for Oceanography (Tianjin, China).

However, for certain types of data, the exchange of inventories of available data in a WDC subcenter may be considered acceptable in lieu of the transfer of the actual data sets. Oceanographic data contributed to the WDC become automatically available to scientific investigators in any country. Thus, there is no restrictions or limitations placed on data exchanged through the WDC system.

7. Data Products:

All data received by WDC for Oceanography are described in the annual *Catalogue of Data and Report of Data Exchange*. The scientific community is kept apprised of the availability of data and publications from the WDC through regular dissemination of the catalogue to organizations and individuals in more than 75 countries, and, as appropriate, to qualified requesters.

WDC for Oceanography is operated by the U.S. NODC Ocean Climate Laboratory and NODC provides support for all required computer operations. Data submitted to the WDC that are amenable to processing and incorporation into NODC's data files thus become part of NODC's global data bank. WDC/NODC data collections and products are available through the NODC Internet Website or by contacting WDC for Oceanography.

World Ocean Database 2001 - April 2002

(<http://www.nodc.noaa.gov/OC5/WOD01/data2001.html>)

World Ocean Database 2001 (WOD01) is comprised of 8 CD-ROMs and contains *in situ* profile data such as temperature, salinity, nutrients, oxygen, chlorophyll, plankton biomass data and more. It is an update to the *World Ocean Database 1998*, plus it contains some new parameters.

Some changes since WOD98:

- addition and specification of data from undulating oceanographic recorders, profiling floats, drifting buoys, moored buoys, surface only data, and autonomous pinniped bathythermograph data.
- addition of carbon variables to the database.
- submitter defined data quality flags received as part of data submissions now kept in the database.
- modifications to the format.

To help visualize the data files, the CD-ROMs are packaged with Ocean Data View © software developed by R. Schlitzer, Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Germany. An online version of WOD01 is also available for downloading individual data files, and the WOD01 webpage provides extensive documentation.

World Ocean Atlas 2001 - February 2003

The World Ocean Atlas 2001 (WOA01) contains ASCII data of statistics and objectively analyzed fields for one-degree and five-degree squares generated from *World Ocean Database 2001* observed and standard level flagged data. The ocean variables included in the atlas are: *in-situ* temperature, salinity, dissolved oxygen, apparent oxygen utilization, percent oxygen saturation, dissolved inorganic nutrients (phosphate, nitrate, and silicate), chlorophyll at standard depth levels, and plankton biomass sampled from 0 - 200 meters.

ODINAFRICA CD-ROM - January 2003

The Ocean Climate Laboratory of the U.S. National Oceanographic Data Center and the World Data Center for Oceanography, Silver Spring have produced this CD-ROM for the Intergovernmental Oceanographic Commission's (IOC) Ocean Data and Information Network for Africa (ODINAFRICA). This project aims at addressing the data and information requirements of the 20 member states. This CD-ROM is part of the ODINAFRICA effort to assist in establishment of NODCs/DNAs in all participating member states.

This CD-ROM is a subset of the *World Ocean Database 2001* CD-ROM set. The World Ocean Database 2001 Data Set Documentation is also contained on this CD-ROM. The tables and numbers in this documentation are based on the entire WOD01 dataset, not only this subset for ODINAFRICA.

World Ocean Circulation Experiment (WOCE) DVDs - August 2002

The U.S. NODC and World Data Center for Oceanography, Silver Spring, in cooperation with the WOCE Data Products Committee (DPC), produced the final set, WOCE Global Data DVDs, Version 3.0, and distributed them to approximately 400 participants of the *WOCE and Beyond* Conference in San Antonio, Texas, November, 18 - 22, 2002. The WOCE Global Data DVD suite consists of two single-sided and double-layered DVDs. Each of which contain a series of directories (also known as folders). A Web browser is required for exploring and accessing their contents. At the top level of both of the DVDs (the "root" directory) are identical copies of introductory files (web pages) prepared by DIU. Below this level are more directories containing the data files and documentation for each WOCE data type. The introductory pages provide tools and software, which are needed to search and locate data files or unzip files. They also include links to each data directory, where an index or welcome page allows users to explore their contents. The contents of the WOCE Global Data DVD set is available on-line at http://www.nodc.noaa.gov/woce_v3/. Following the production of the DVDs, updates and amendments to the contents are posted on-line at http://www.nodc.noaa.gov/woce_v3/updates

8. Publications:

A variety of products have been prepared with the collaboration of international partners. The *International Ocean Atlas and Information Series* reflect a broad scope of activity: (1) they present unique data sets that have been obtained under international projects, such as the Global Oceanographic Data Archaeology and Rescue (GODAR) and the World Ocean Database (WOD) projects; (2) they present empirical analyses of the data in select regions of the world; and (3) they provide information on historical marine investigations. These products are available on-line at <http://www.nodc.noaa.gov/OC5/indpub>.

Volume 1: Climatic Atlas of the Barents Sea 1998 - May 1999

A collaborative effort with the Murmansk Marine Biological Institute (MMBI), Russian Academy of Sciences, Murmansk, Russia. This product presents the temporal and spatial distributions of 74,256 ocean stations (temperature, salinity, and oxygen) in the Barents Sea during the period 1898-1993. Monthly maps defining the station distribution over the Barents Sea are given for every year. Monthly mean fields of temperature and salinity distribution for the depths 0, 30, 50, 100, and 200 m, with a grid distance of 10'x30' are plotted using an objective analysis techniques. A description of the summer and winter seasons is given in terms of the spatial-temporal variability of thermohaline characteristics of the Barents Sea.

Volume 2: Biological Atlas of the Arctic Seas 2002: Plankton of the Barents and Kara Seas - Jan 2001

A collaborative effort with the Murmansk Marine Biological Institute. This product presents the physical and biological data for the region extending from the Barents Sea to the Kara Sea during 158 scientific cruises for the period 1913-1999. Changes in the plankton community structure between the 1930's, 1950's, and 1990's are discussed.

Volume 3: Hydrochemical Atlas of the Sea of Okhotsk 2001 - July 2001

A collaborative effort with the P.P. Shirshov Institute of Oceanology, Russian Academy of Sciences, Moscow, Russia. This product presents maps of the spatial distribution of temperature, salinity, oxygen, percent oxygen saturation, phosphate, nitrate, ammonium nitrogen, silicate, organic nitrogen and phosphorus for the Sea of Okhotsk, which were obtained using data from complex ecosystem studies by the Russian Federal Research Institute of Fisheries and Oceanography (VNIRO) and the Pacific Research Institute for Marine Fisheries and Oceanography (TINRO) from 1989-1997.

Volume 4: Atlas of Temperature-Salinity Frequency Distributions: North Atlantic Ocean - October 2002

A collaborative effort with the P.P. Shirshov Institute of Oceanology. It consists of a printed document plus two CD-ROMs, one for seasonal and the other for annual frequency distributions. This product contains more than 80,000 plots of empirical distributions of temperature and salinity for 5-degree squares in the north Atlantic Ocean, for all standard levels, for each of the four seasons in the upper (0 - 400 m) ocean, and annual distributions for the deeper (500 - 5500 m) ocean.

Volume 5: Russian Marine Expeditionary Investigations of the World Ocean - December 2002

A collaborative effort with the All-Russian Research Institute for Hydrometeorological Information (RIHMI) - World Data Center for Oceanography, Obninsk, Russia. It is an endeavor to present the most important results of sea voyages and ocean expeditions performed by Russian seamen from the late 17th century up to the present.

Volume 6: Zooplankton of the Arctic Seas 2002 - March 2003

A collaborative effort with the Zoological Institute, Russian Academy of Sciences, in Moscow, Russia. This Atlas consists of one CD-ROM containing physical and biological data for the Arctic and sub-Arctic regions extending from the Barents Sea to the northwest Pacific Ocean, which were obtained from 25 scientific cruises during the period 1903-1956.

Volume 7: 36-Year Time Series (1963-1998) of Temperature, Salinity, and Zooplankton in the White Sea - March 2003

A collaborative effort with the White Sea Biological Station, Zoological Institute, Russian Academy of Sciences, near Chupa (Karelia Region), Russia. This product presents data on temperature, salinity, and zooplankton, which were obtained once every ten days at a fixed point in the White Sea from 1963-1998. Time series of temperature and salinity are presented, and the impact of temperature and salinity variability on zooplankton development is described in quantitative terms.

9. Cruise Summary Report (ROSCOP) Program:

WDC for Oceanography maintains the Report of Observations/Samples Collected by Oceanographic Programs (ROSCOP) international marine data inventory system. (The 3rd edition of ROSCOP, entitled Cruise Summary Report, is now in use.) Data inventory forms, such as ROSCOP, enable data centers to determine the availability of internationally exchangeable data in advance of the actual receipt of the data and are also useful in providing a referral service to data not yet available through the WDC system. The WDC has increasingly utilized the automated ROSCOP information base maintained by the International Council for the Exploration of the Sea (ICES). To obtain blank CSR/ROSCOP forms you may contact WDC for Oceanography, Silver Spring. Forms are also available from NODC Liaison Officers, all WDC's for Oceanography, and the ICES Service Hydrographique.

10. Exchange Policy:

WDC for Oceanography is responsible for the provision of materials to requesters either in exchange or at a cost not to exceed that of processing and shipping. For certain types of requests, limitations in funding, personnel, or facilities may preclude direct or free provision of data or information by the WDC. In general, reasonably-sized requests from national or regional contributors to WDC for Oceanography may be considered as exchange. For requests for unusually large amounts of data, for specially formatted data, for derived data products, or for data to be obtained from outside the WDC system, WDC for Oceanography will often be required to recover the costs of processing and shipping, or, at its discretion, may arrange for the request to be serviced by a regional, national, or discipline center.

General inquiries about NODC participation in international activities should be directed to:

International Data Exchange
National Oceanographic Data Center
NOAA/NESDIS E/OC53
SSMC3, 4th Floor
1315 East-West Highway
Silver Spring, MD 20910-3282
Telephone: 301-713-3295
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E-mail: wdc@nodc.noaa.gov

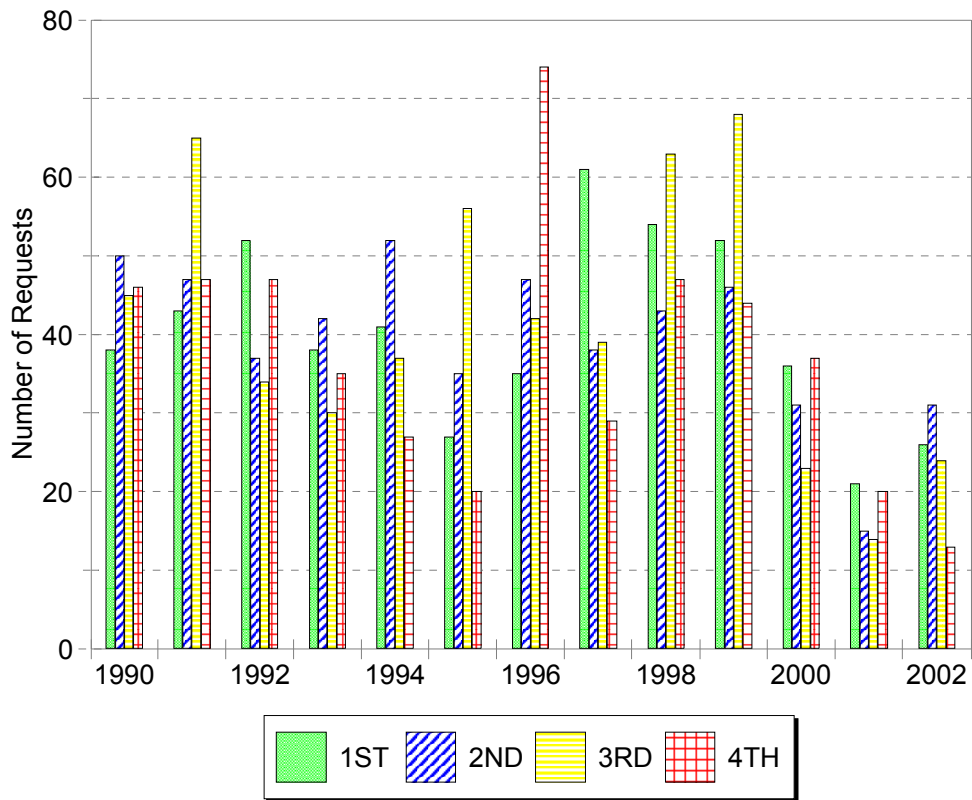
Inquiries regarding the specific functions and services of the World Data Center for Oceanography, Silver Spring, should be directed to:

World Data Center for Oceanography
NOAA
Silver Spring, MD 20910-3282
Telephone: 301-713-3295
Fax: 301-713-3303
E-mail: wdc@nodc.noaa.gov

11. Requests:

Requests are regularly received by WDC for Oceanography for data, publications and information from foreign and domestic academic institutions, government agencies,

commercial interests, international organizations, and individuals. These are in addition to routine distributions of publications and data products to addressees on WDC mailing lists.



WDC requests by quarter and yearly totals:

Year	First	Second	Third	Fourth	Total
1990	38	50	45	46	179
1991	43	47	65	47	202
1992	52	37	34	47	170
1993	38	42	30	35	145
1994	41	52	37	27	157
1995	27	35	56	20	138
1996	35	47	42	74	198
1997	61	38	39	29	167
1998	54	43	63	47	207
1999	52	46	68	44	210
2000	36	31	23	37	127
2001	21	15	14	20	70
2002	26	31	24	13	94

12. Visitors:

The WDC routinely hosts visitors to the Data Center. These include visiting scientists as well as data managers.

Name	Country	Institution	Date(s)	Purpose
Sunhild Wilhelms	Germany	DOD	12 Nov - 15 Dec 2000	Quality control of historical German MBT & XBT data
Yutaka Toru, Sachiko Suzuki	Japan	MIRC	26 Jan 2001	Quality control briefing
Liu	Korea	NCOR	28 Feb 2001	Data management
Peter Pissierssens	France	IOC	4-8 Oct 2001	Web-site design
Clive Angwenyi	Kenya	ODINAFRICA	4-18 Oct 2001	Web-site design by Division
Simon Tett	England	Hadley Centre	22-23 Jan 2002	Data management and seminar
Moon-Sik Suk Jung Chungmo	Korea	KORDI MMAF	14 Jan 2002	Data management on Argo
Oksoo Kim Jun Hwang Sanghyun Suh	Korea	MMAF MMAF KORDI	24 Jan 2002	Data management
Yuriy Egorov	Russia	Shirshov Institute of Oceanology (SIO)	10-15 Nov 2001	Data management
Yuriy Sychev	Russia	Polar Foundation	25-31 June 2002 8-15 Dec 2002	Atlas 55
Aleksey Zuyev	Russia	Murmansk Marine Biological Institute (MMBI)	1 Oct - 20 Dec 2001 26 Jan - 6 Apr 2002 14 Aug - 25 Nov 2002	Barents, Kara, White, and Laptev Sea atlas/database
Gennadiy Matishov	Russia	MMBI	Nov 2001	GODAR-related issues
Alexander Suvorov Evgeny Godin Aleksey Khaliulin	Ukraine	Marine Hydrophysical Institute	16-21 June 2002	Training to digitize Black Sea data
Artem Sarkisyan	Russia	Zoological Institute	8-12 Sept 2002	GODAR-related issues
Nikolay Yakovlev	Russia	Institute of Numerical Mathematics	5-10 Dec 2002	GODAR-related issues
Boris Trotsenko	Ukraine	Southern Scientific Research Institute of Marine Fisheries & Oceanography (YugNIRO)	15 Dec 2002 - 6 Feb 2003	Oceanographic atlas of Indian and Southern Oceans

13. Comments:

The World Data Center for Oceanography, Silver Spring will work with regional, national and international partners to champion timely, free, and unrestricted access to all data, associated metadata, and products generated under the auspices of IOC programmes. WDC will continue to serve as the long-term repository for oceanographic data and associated metadata. WDC is committed to working with IODE to meet its renewed mandate to serve the data and information needs of the IODE community.