



IOC/IODE perspectives on long term ocean climatic data sets

Sissy Iona, JCOMM/DMPA Coordinator, IODE Co-Chair



MARCDAT-III, ESA-ESRIN, Frascati (Rome), 2-6 May 2011



The IOC



- IOC : body within UNESCO
- Headquarters in Paris, France
- Field Offices (Colombia, Brazil, Thailand, Kenya, Denmark, Belgium, Australia)



- IOC Governing Bodies
- 136 Members States



The IOC and its IODE

- 1960: requirement for a structure **to co-ordinate international oceanographic data exchange**
- IOC-I, 1961: Working Group on Exchange of Oceanographic Data established:
 - Facilitate and promote the exchange of oceanographic data and information
 - Develop standards, formats and methods for the global exchange of oceanographic data and information
 - Assist Member States in acquiring the necessary capacity to manage oceanographic data and information and become partners in the IODE network
- From the beginning IODE was considered as an overarching programme interrelated and providing services to all other activities of the IOC



IODE Global Network (1961-2010)

- Data Centres
NODCs
– Now 80
- Marine
Libraries
- National
Coordinators
(DM &IM)



IODE Objectives

- Facilitate and promote the **exchange** of data and information
 - Nationally and internationally
- Long term **archival, management and services**
- Promote the use of international **standards**
- Assist members states to acquire the necessary **capacity**
- Support international scientific and operational marine programmes of IOC and WMO



IODE Activities

- projects at global level:
 - **Data management**: GODAR, GTSP, GOSUD, JCOMM, MarineXML, MEDI, Ocean Data Portal, WIGOS, Virtual Lab, Data Publishing, Data Standards
 - **Information management**: OceanDocs, ASFA, OceanExpert, OpenScienceDirectory
- 7 **regional CB** platforms: ODINAFRICA, ODINCARSA, ODINCINDIO, ODINECET, ODIN-PIMRIS, ODIN-WESTPAC, ODIN-BLACKSEA
 - Regional products: AMA, CMA

Strategy

- **Clause 1: Member States shall provide timely, free and unrestricted access to all data, associated metadata and products generated under the auspices of IOC programmes**

(IOC revised its policy in 2007 to harmonize it with the WMO)



Data Policy

- July 2007: IOC Assembly adopts the

IOC Strategic Plan for Oceanographic Data and Information Management

“A comprehensive and integrated ocean data and information system, serving the broad and diverse needs of IOC Members States, for both routine and scientific use”



Deliverables

- Assembled, quality control and archived data sets
- Timely dissemination of data
- Facilitate easy discovery and access to data



Global Oceanographic Data Archaeology and Rescue (GODAR)

- Initiated at 1993
- Is leading by the WDC for Oceanography in Silver Spring, Maryland
- Goal: *was to **increase** the volume of **historical oceanographic data** available to climate change and other researchers by locating ocean profile and plankton data sets not yet in digital form, digitizing these data, and ensuring their submission to national data centers and the World Data Center System. In addition, data on electronic media that are at risk of loss due to media degradation are also candidates for rescue*



The World Ocean Database (WOD) Project

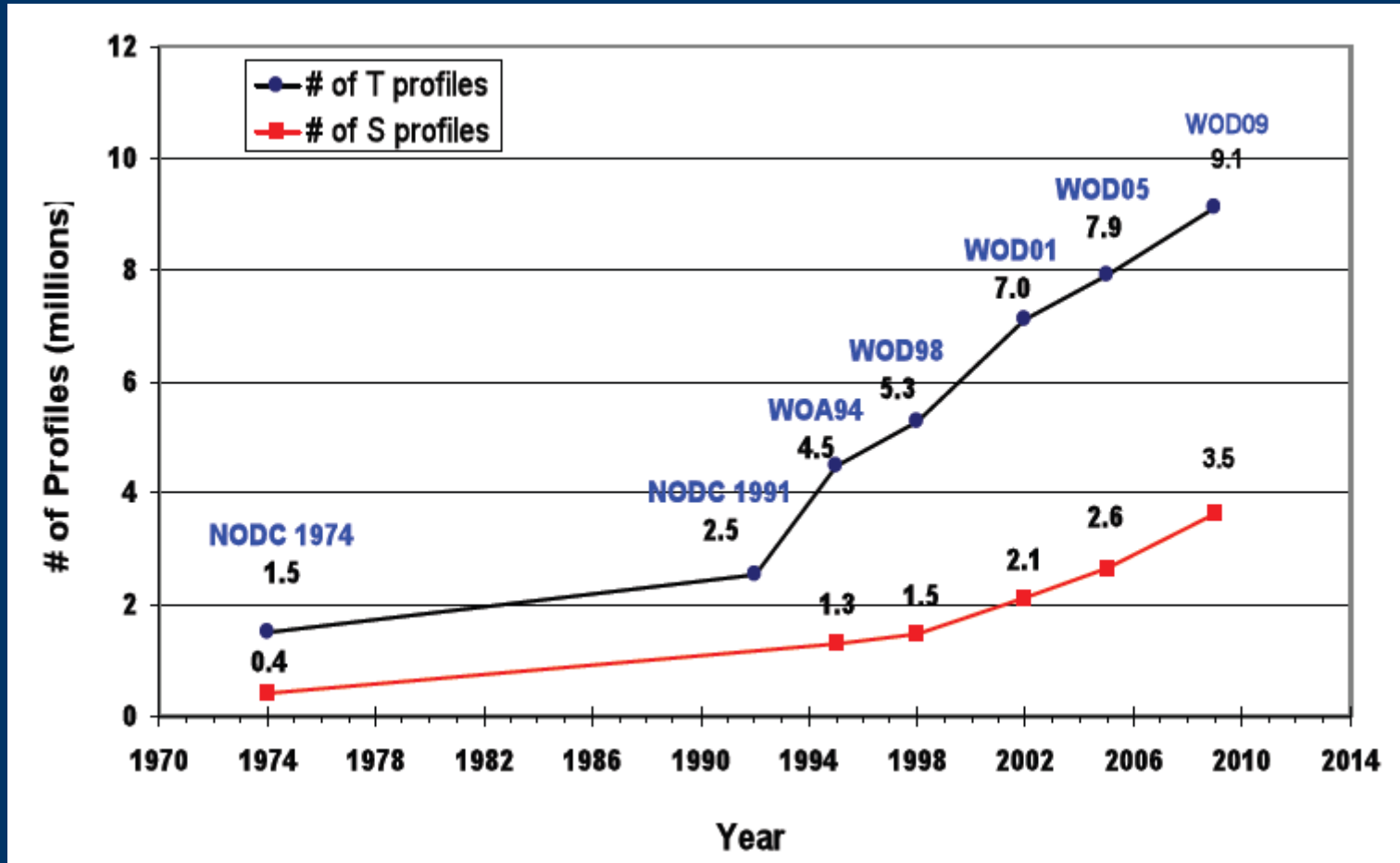
- In recognition of the success by the GODAR project , the World Ocean Database Project was established in 2000
- Goal: *to stimulate international **exchange of modern oceanographic data** and encourage the development of regional oceanographic databases as well as the implementation of regional quality control procedures*



GODAR accomplishments

- Have resulted in the acquisition of
 - **9 million temperature stations**
 - **158,200 chlorophyll stations**
 - **218,695 plankton stations**
- included World Ocean Database 2009 (WOD09), released in January 2010
- Available on line through the WODselect retrieval system: <http://www.nodc.noaa.gov/OC5/SELECT/dbsearch/dbsearch.html>

NODC/WDC T&S profile time series growth as of April 2009



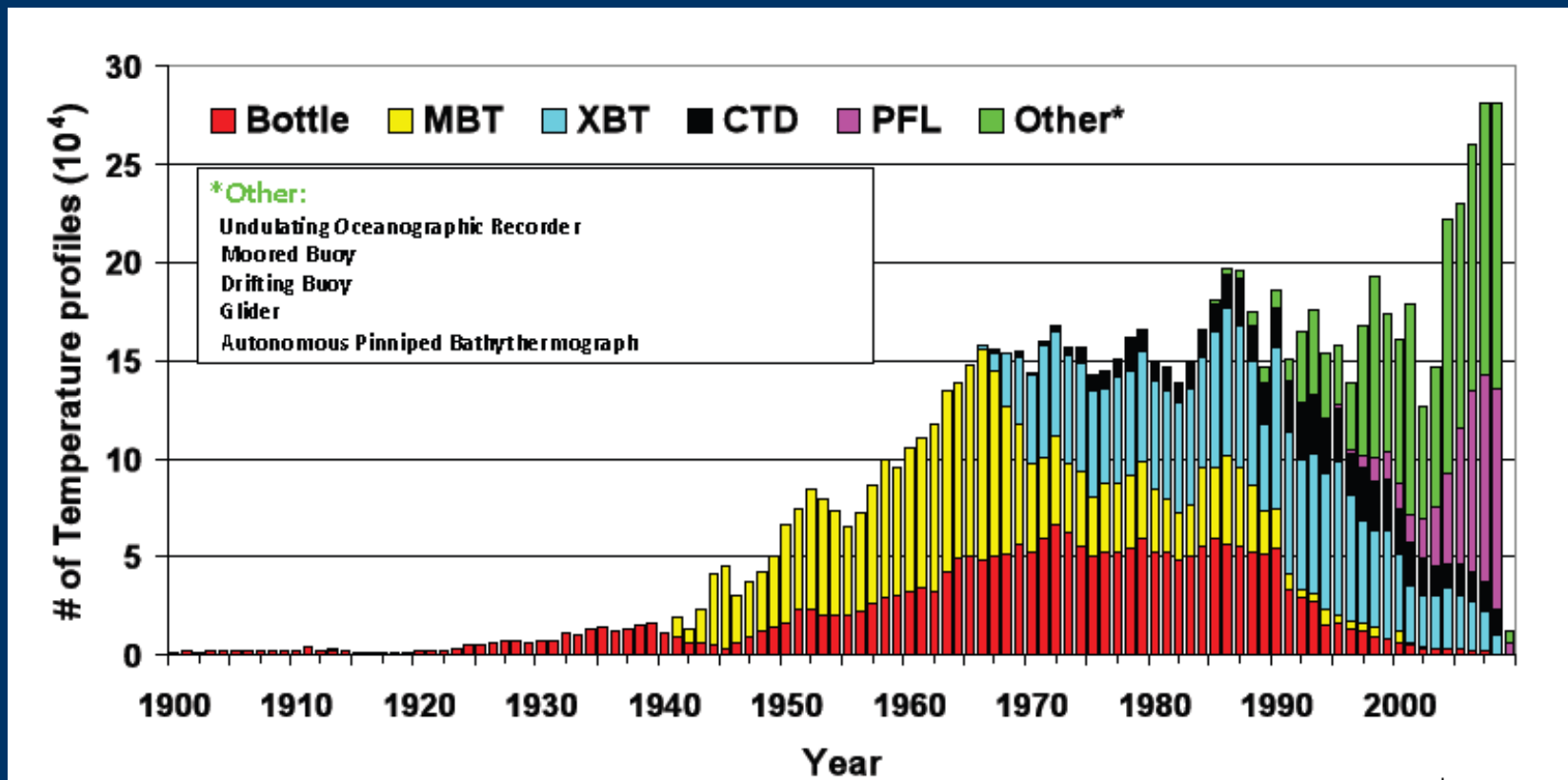
Levitus, IODE50 Anniversary Conference, March 2011



MARCDAT-III, ESA-ESRIN, Frascati (Rome), 2-6 May 2011



World Ocean Data Base 2009, profile data



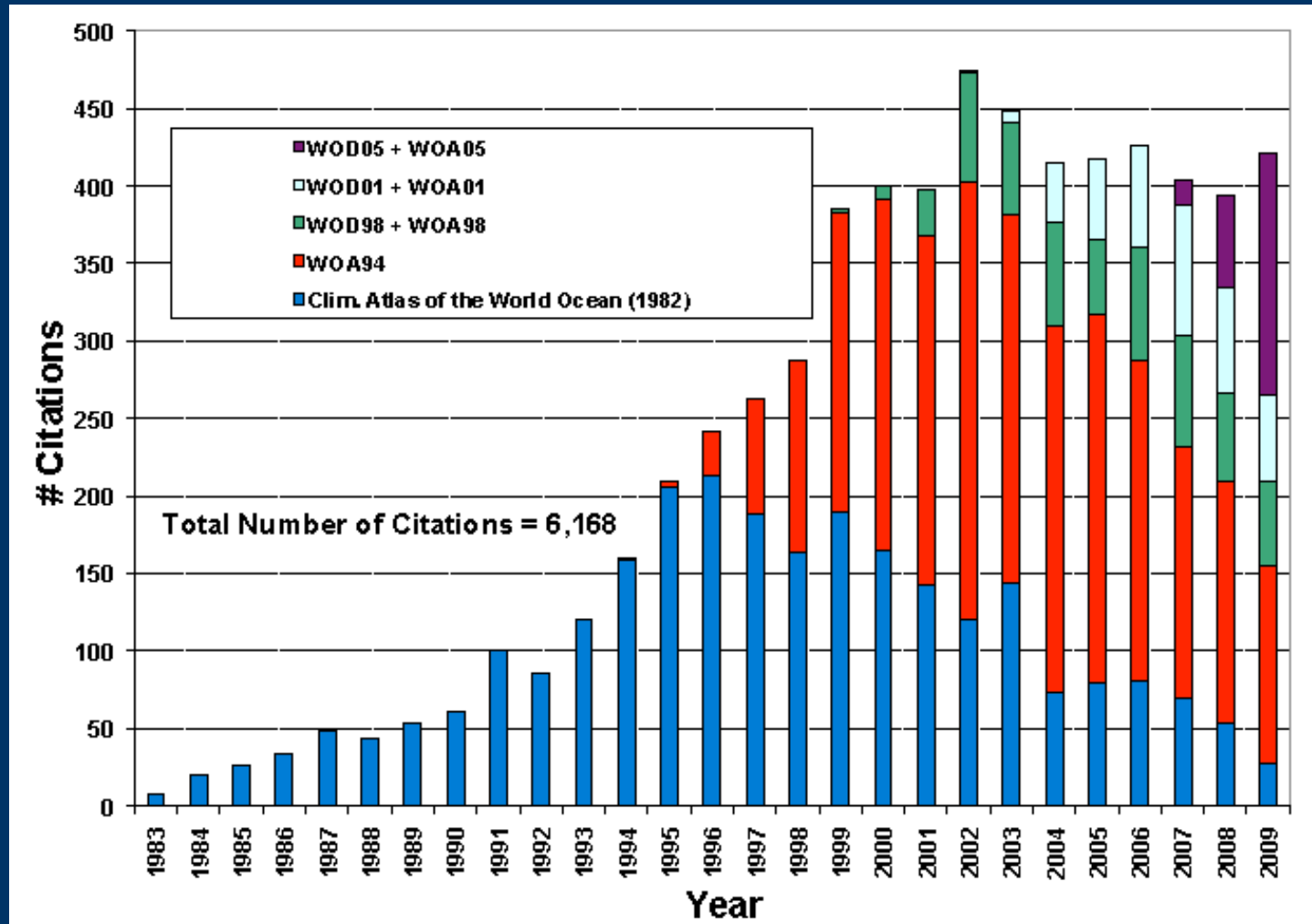
Levitus, IODE50 Anniversary Conference, March 2011



MARCDAT-III, ESA-ESRIN, Frascati (Rome), 2-6 May 2011



Citations to NODC databases & atlases in the scientific literature on climatic related studies



Levitus, IODE50 Anniversary Conference, March 2011

MARCDAT-III, ESA-ESRIN, Frascati (Rome), 2-6 May 2011



IPCC Assessment “Climate Change 2007”

- Chapter on Observations:
“Ocean Climate Change and Sea Level”

This chapter reported on changes on:

- 1) Ocean Heat Content
- 2) Salinity
- 3) Oxygen
- 4) Nutrients
- 5) Carbon
- 6) Sea Level

Levitus, IODE50 Anniversary Conference, March 2011



MARCDAT-III, ESA-ESRIN, Frascati (Rome), 2-6 May 2011



Recommendations/Future Work

- More products and more advanced versions:
 - **high vertical-horizontal resolution climatologies**
 - **more frequent releases of products, e.g., monthly T,S, OHC fields, etc**

Levitus, IODE50 Anniversary Conference, March 2011



MARCDAT-III, ESA-ESRIN, Frascati (Rome), 2-6 May 2011



IODE data types

1961-2000

- Physical oceanography
- Delayed mode

2000

- Establishment of JCOMM: close link with IODE through joint IODE/JCOMM ETDMP (2000)
- GE-BICH (>2000): chemical and biological data
- OBIS: 2011



Interoperability

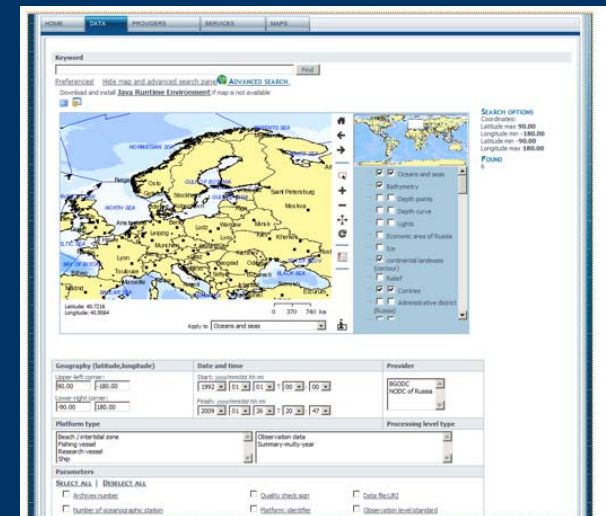
Standards: The Ocean Data Standards Pilot Project (ODS)

- The objective of the Project is to achieve broad agreement and commitment to adopt a number of standards related to ocean data management and exchange
- <http://www.oceandatastandards.net>

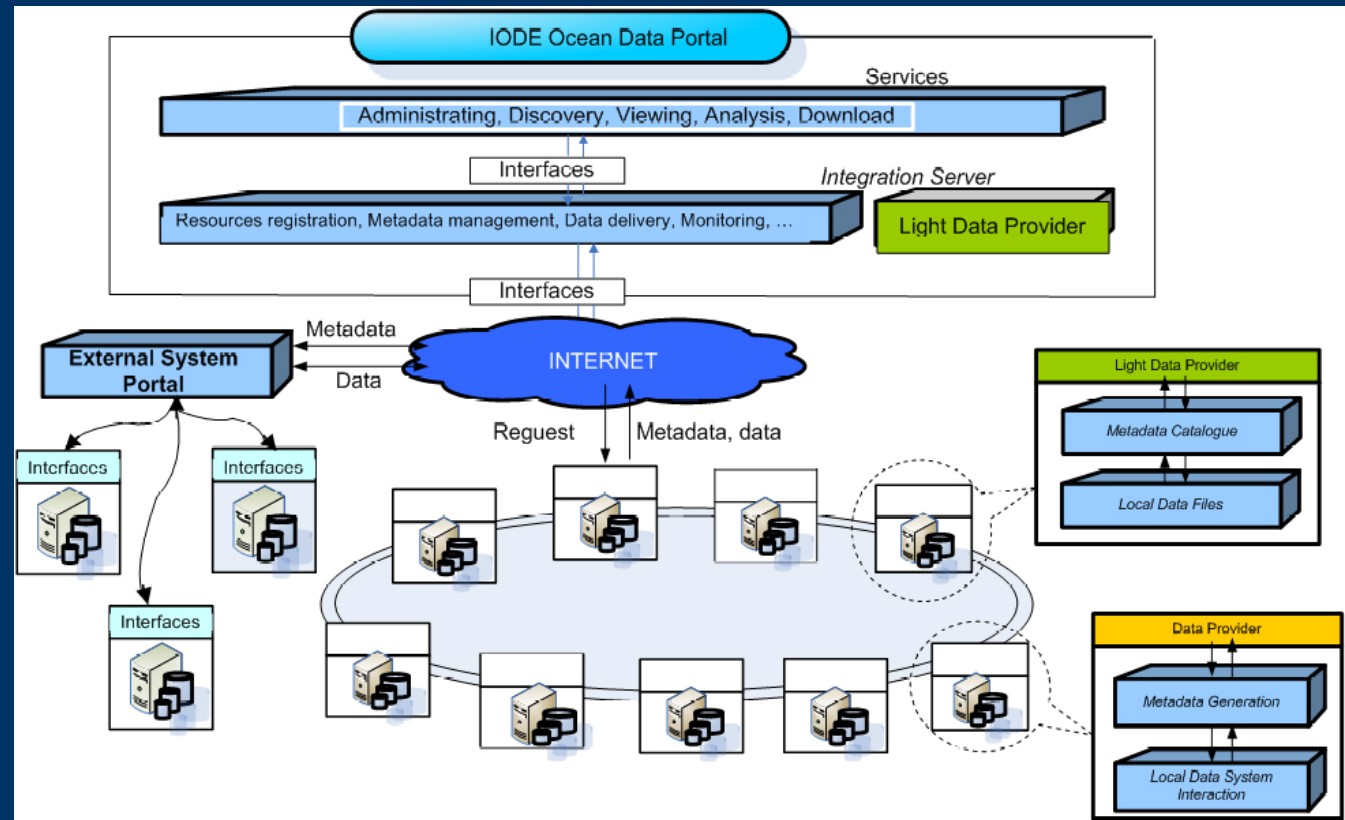


Ocean Data Portal

- The Ocean Data Portal (ODP) provides seamless access to collections and inventories of marine data from the NODCs in the IODE network and allows the discovery, evaluation (through visualization and metadata review) and access to data via web services.
- The system architecture use web-oriented information technologies to access non-homogenous and geographically distributed marine data and information



Future: The “Data ATM” Concept



2015 target: Consistent and unified way to deliver data to clients



MARCDAT-III, ESA-ESRIN, Frascati (Rome), 2-6 May 2011

