



# Towards a global LME data repository

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# The Questions

1. What data do we need?
  - *Outside scope of data & information mgmt*
2. Are the data we need available and where?
  - *Data/Information discovery services*
3. What do we know about these data?
  - *Metadata?*
1. If data are not available how do we obtain, manage and disseminate them?
  - Standard sampling procedures, standard data management procedures, data repositories
1. Can we use the data?
  - Data policy?

# *1. Are the data we need available and where?*

- Based upon the **data types** needed we need an inventory of all data available within the geographic scope of our LME

# *2. What do we know about these data?*

- We need a standard **metadata** scheme that describes the data in sufficient detail
- This requires a number of **controlled vocabularies**
- The inventory then becomes a **data discovery service**

# 4. *If data are not available how do we obtain, manage and disseminate them*

- Need **standard protocols for sample collection** and processing: *outside scope data management*
- **Data management**
  - *National Oceanographic Data Centres or Associate Data Units (IODE): global community of practice*
    - *Quality Management Framework: need to ensure data centre applies standards: credibility, trust*
  - *Data Management Plan*
  - *Standard protocols for:*
    - *Data description (metadata)*
    - *Data quality control*
    - *Data formats*
  - *Data archival (secure, long-term)*
  - *Data serving (online data discovery, retrieval, portals, distributed database systems,...)*
  - *Data products: atlas, climatology, time series, ...*
    - *Atlas: ICAN*

# *Can we use the data?*

## IOC Data Policy (2003)

The **timely, free and unrestricted international exchange** of oceanographic data is **essential** for the efficient acquisition, integration and use of ocean observations gathered by the countries of the world for a wide variety of purposes including the prediction of weather and climate, the operational forecasting of the marine environment, the preservation of life, the mitigation of human-induced changes in the marine and coastal environment, as well as for the advancement of scientific understanding that makes this possible.

# The Questions

- ▶ **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.
- ▶ **Clause 2:** Member States are encouraged to provide timely, free and unrestricted access to relevant data and associated metadata from non-IOC programmes that are essential for application to the preservation of life, beneficial public use and protection of the ocean environment, the forecasting of weather, the operational forecasting of the marine environment, the monitoring and modelling of climate and sustainable development in the marine environment.
- ▶ **Clause 3:** Member States are encouraged to provide timely, free and unrestricted access to oceanographic data and associated metadata, as referred to in Clauses 1 and 2 above, for non-commercial use by the research and education communities, provided that any products or results of such use shall be published in the open literature without delay or restriction.
- ▶ **Clause 4:** With the objective of encouraging the participation of governmental and non-governmental marine data gathering bodies in international oceanographic data exchange and maximizing the contribution of oceanographic data from all sources, this Policy acknowledges the right of Member States and data originators to determine the terms of such exchange, in a manner consistent with international conventions, where applicable.
- ▶ **Clause 5:** Member States shall, to the best practicable degree, use data centres linked to IODE's NODC and WDC network as long-term repositories for oceanographic data and associated metadata. IOC programmes will co-operate with data contributors to ensure that data can be accepted into the appropriate systems and can meet quality requirements.
- ▶ **Clause 6:** Member States shall enhance the capacity in developing countries to obtain and manage oceanographic data and information and assist them to benefit fully from the exchange of oceanographic data, associated metadata and products. This shall be achieved through the non-discriminatory transfer of technology and knowledge using appropriate means, including IOC's Training Education and Mutual Assistance (TEMA) programme and through other relevant IOC programmes.

# Way forward...

- ▶ Some LMEs already developed regional framework for data management - they should share their experience with the global community
  - ▶ Work towards **harmonization** between LME data systems
- ▶ IODE has developed the **OceanTeacher Global Academy** (more under 9a). Candidate Regional training centres covering all regions. They can assist LME programmes in acquiring necessary expertise in data management
- ▶ Global LME could develop standard “package” for regional LME Data Management

# *Marine Information ...*

- ▶ Definition of Information = textual knowledge (published materials, factual information)
- ▶ Needs to be managed as professionally as data: requires **librarians**
- ▶ Online bibliographic data bases = metadata based discovery tool
- ▶ Document repository
  - ▶ E.g.: OceanDocs, Aquatic Commons

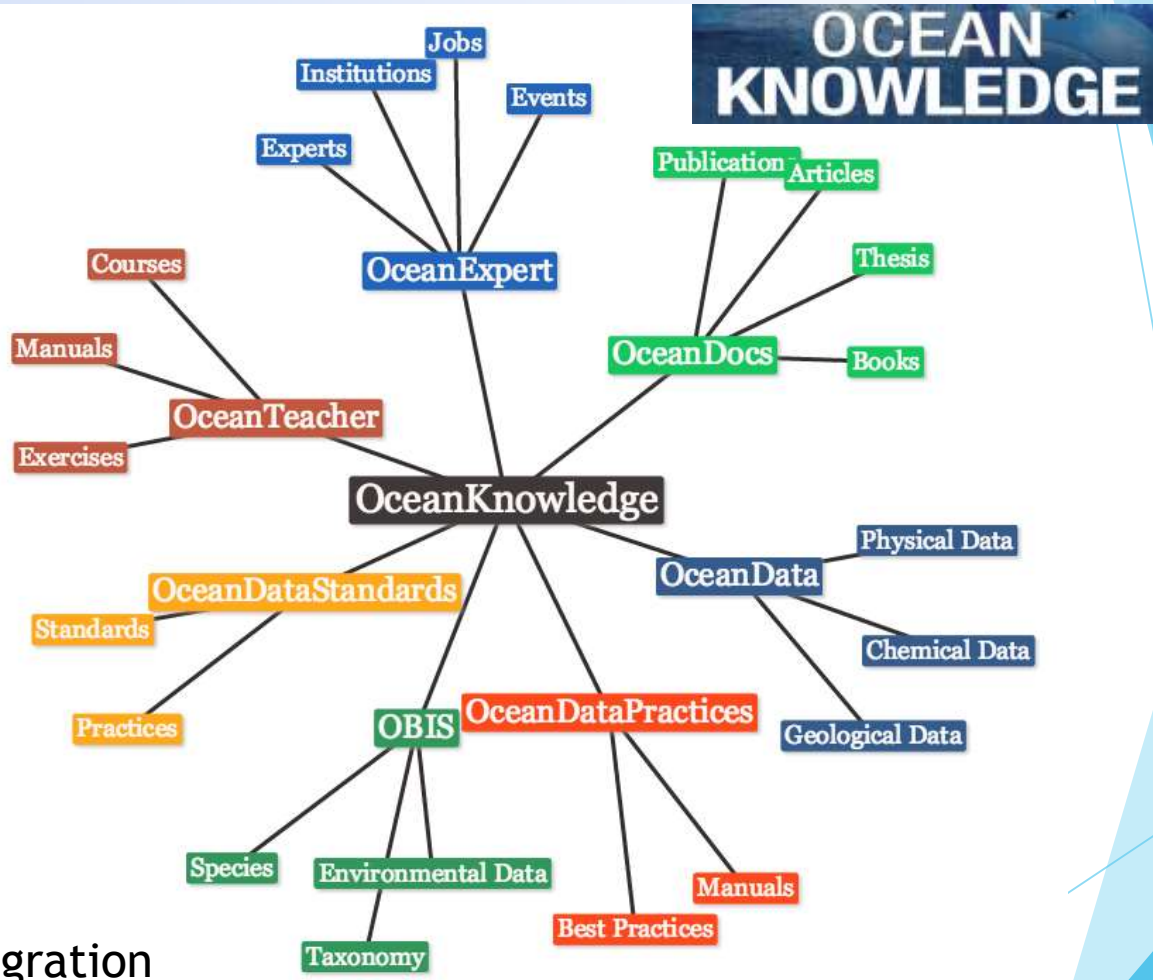


# *Linking data and information*

- ▶ Data publishing/ data citation
- ▶ Data sets referred to in a publication are made available as links from the publication. These data sets can be cited.
- ▶ Growing new source of data



# Integration of knowledge sources



Knowledge Integration

*Questions ?*