

Available data and role of ISA in sharing environmental information

Pretoria, South Africa, 17 May 2019

Pedro Madureira

Legal & Technical Commission of the ISA



Task Group for the Extension of the Continental Shelf





Norad

ADSR Workshop

South Africa



Oxygen





Norad

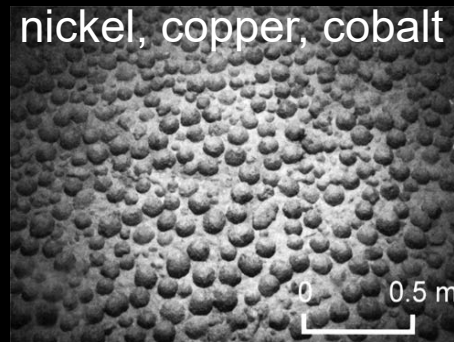
ADSR Workshop

South Africa

Marine mineral resources in the Area

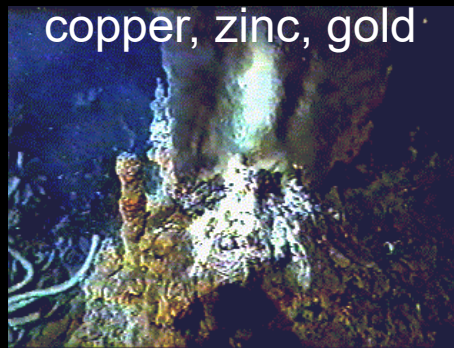


nickel, copper, cobalt



Polymetallic Nodules

copper, zinc, gold



Polymetallic Sulphides

cobalt, REE, copper

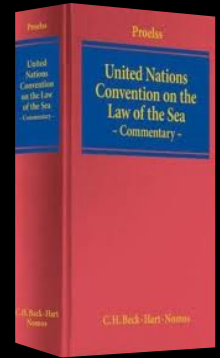


Cobalt-rich ferromanganese crusts

United Nations Convention on the Law of the Sea

Article 145

Protection of the Marine Environment



Necessary measures shall be taken in accordance with this Convention with respect to activities in the Area to ensure effective protection for the marine environment from harmful effects which may arise from such activities. To this end the Authority shall adopt appropriate rules, regulations and procedures (...)

(a) the prevention, reduction and control of pollution and other hazards to the marine environment, including the coastline, and of interference with the ecological balance of the marine environment, (...);

(b) the protection and conservation of the natural resources of the Area and the prevention of damage to the flora and fauna of the marine environment.



Norad

ADSR Workshop

South Africa



Source: JAMSTEC



Sediment plume

Substrate removal and sediment compaction



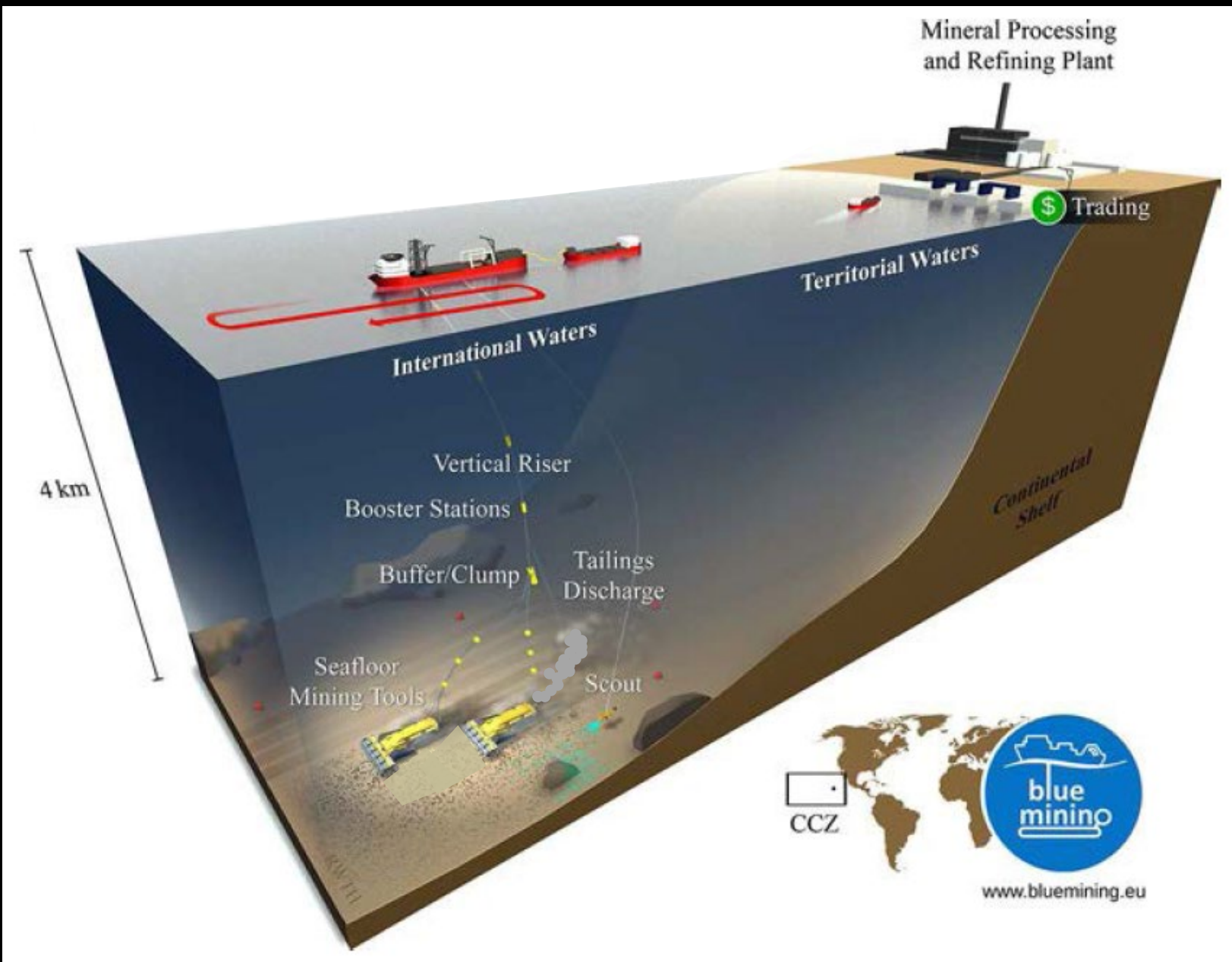




Norad

ADSR Workshop

South Africa





Regulations on Exploration of mineral resources in the Area

“Exploration” means the searching for deposits of polymetallic nodules, polymetallic sulphides, cobalt crusts in the Area with exclusive rights, the analysis of such deposits, the use and testing of recovery systems and equipment, processing facilities and transportation systems and the carrying out of studies of the environmental, technical, economic, commercial and other appropriate factors that must be taken into account in exploitation;

“Marine environment” includes the physical, chemical, geological and biological components, conditions and factors which interact and determine the productivity, state, condition and quality of the marine ecosystem, the waters of the seas and oceans and the airspace above those waters, as well as the seabed and ocean floor and subsoil thereof;

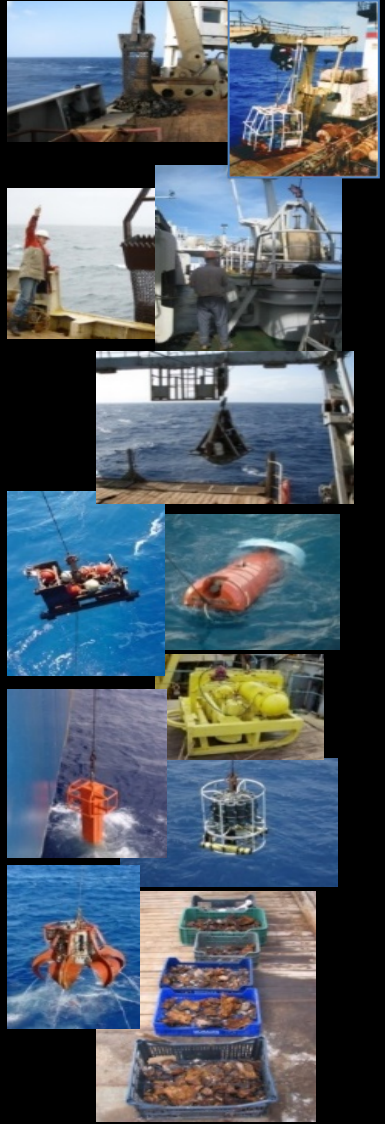
International Seabed Authority

CONSOLIDATED REGULATIONS
AND RECOMMENDATIONS ON
PROSPECTING AND EXPLORATION

Revised Edition

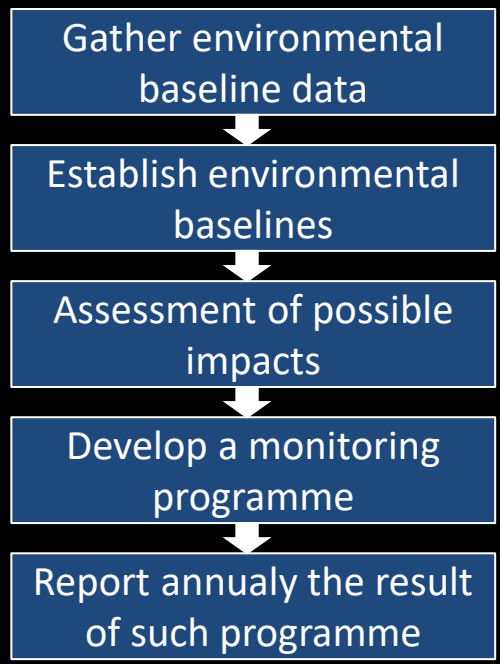


Regulations on Exploration of mineral resources in the Area



*Part V
Protection and
preservation of the marine
environment*

*Regulation 32, 34, 34
Environmental baselines
and monitoring*



Source: Georgy Cherkashov



Regulations on Exploration of mineral resources in the Area

Part VI

Confidentiality

Regulation 36, 38, 38

Confidentiality of data and information

(...)

2. 1. 2. Data and information that is necessary for the formulation by the Authority of rules, regulations and procedures concerning protection and preservation of the marine environment and safety, other than proprietary equipment design data, shall not be deemed confidential.

(...)



International Seabed Authority

ISBA/21/LTC/15



Legal and Technical Commission

Distr.: General
4 August 2015

Original: English

Recommendations for the guidance of contractors on the content, format and structure of annual reports

I. Executive summary

II. General

III. Result of exploration work

- Intended programme and actual completion
- Methods & equipment
- Data obtained
- Interpretations and assessments
- Future strategy for exploration work

IV. Environmental baseline studies

- A. Environmental monitoring
- B. Environment assesment

V. Mining tests and proposed mining activities

VI. Training program

VII. International cooperation

VIII. Certified financial statement of actual/direct exploration expenditure

XI. Programme of activities for the following year

X. Additional information



INTERNATIONAL SEABED AUTHORITY

[English](#) [Français](#) [Español](#)

- HOME
- THE AUTHORITY
- MINERALS
- LEGAL INSTRUMENTS
- CONTRACTORS
- ACTIVITIES
- TRAINING
- NEWS
- SESSIONS
- DOCUMENTS
- BBNJ

REPORTING TEMPLATES

Templates: | [Geological Data](#) | [Environmental Data](#)

At the ISA's 21st Session in July 2015, the Legal and Technical Commission of the International Seabed Authority issued recommendations (**ISBA/21/LTC/15**) for the guidance of contractors on the content, format and structure of annual reports.

The recommendations should be applied by all contractors with effect from 1 January 2016.

In the recommendations, references to the “Regulations” are collective references to the Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area, the Regulations on Prospecting and Exploration for Polymetallic Sulphides in the Area and the Regulations on Prospecting and Exploration for Cobalt-rich Ferromanganese Crusts in the Area. The references to “clauses” are references to the standard clauses applicable to the particular contract in question.

The purpose of the recommendations is to provide guidance to contractors in relation to the content, format and structure of their annual reports. It includes general requirements for their annual reports and specific guidance for reporting on the exploration under contract for polymetallic nodules, polymetallic sulphides and cobalt-rich ferromanganese crusts.

Contractors

- Polymetallic Nodules
- Polymetallic Sulphides
- Cobalt-Rich Ferromanganese
- Exploration Areas
- Environmental Impact Assessments
- Reserved Areas
- Environmental Management Plan (EMP)
- Reporting Templates
- Maps



Norad

ADSR Workshop

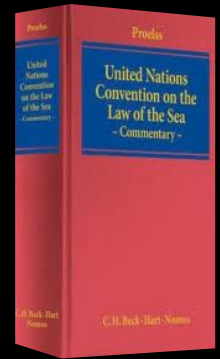
South Africa

United Nations Convention on the Law of the Sea

Article 148

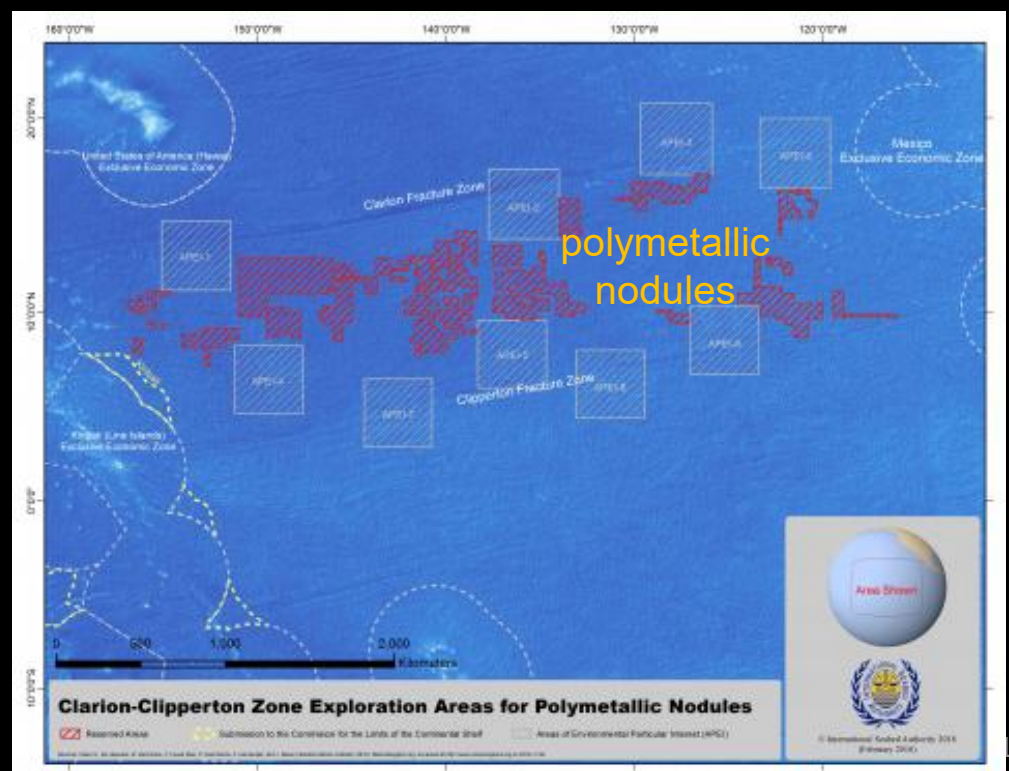
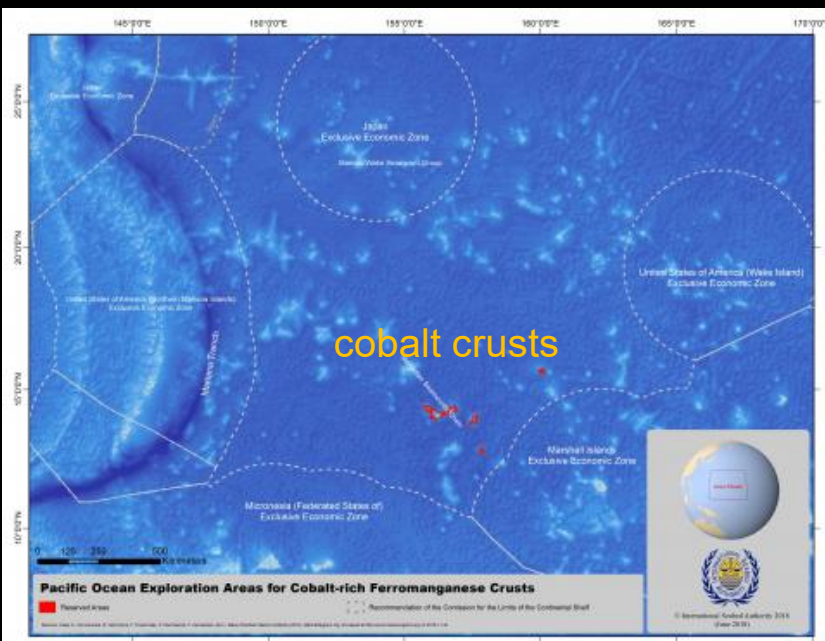
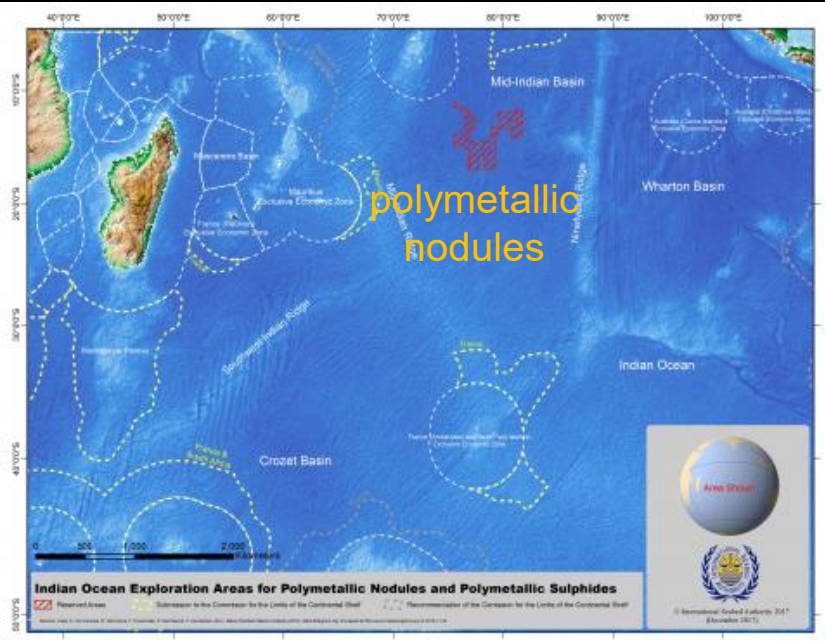
Participation of developing States in activities in the Area

*The effective participation of developing States in activities in the Area shall be promoted as specifically provided for in this Part, **having due regard to their special interests and needs**, and in particular to the special need of the land-locked and geographically disadvantaged among them to overcome obstacles arising from their disadvantaged location, including remoteness from the Area and difficulty of access to and from it.*



Reservation of areas (Article 8 of Annex III, UNCLOS)

Each application, other than those submitted by the Enterprise or by any other entities for reserved areas, shall cover a total area, which need not be a single continuous area, sufficiently large and of sufficient estimated commercial value to allow two mining operations (...).





INTERNATIONAL SEABED AUTHORITY

English Français Español

- HOME
- THE AUTHORITY
- MINERALS
- LEGAL INSTRUMENTS
- CONTRACTORS
- ACTIVITIES
- TRAINING
- NEWS
- SESSIONS
- DOCUMENTS
- BBNJ

CENTRAL DATA REPOSITORY

The new Central Data Repository (CDR) will hold centralized data of public and private information on marine mineral resources acquired from various institutions worldwide. The Authority uses this data to standardize and evaluate data for quantitative mineral assessments. The integrated database system will be developed for use as a management and research tool that will be made accessible to authorized representatives of member States, scientists and researchers to further assist the Authority in its mandated work.

The original CDR was established in 2000 to allow for the creation of uniform data formats and useful summaries made accessible to authorized users. As a preliminary phase, the Secretariat has assembled information concerning the form and availability of relevant data within 18 institutions worldwide. It commenced the project in 2001 with the collection of data and information related to polymetallic nodules and ferromanganese crusts. The data collection was enriched in late 2002 with the receipt of data pertaining to hydrothermal vent systems and polymetallic sulphides. The CDR will also host the following databases:

- Seabed Patents [Volumes 1-5] and [Volumes 6-10].
- ISA Library Catalogue. The catalogue comprises 2000+ books, monographs, reports as well as specialized periodical titles and annuals.
- Bibliographic Database. The database contains references to scientific papers.

Français Español

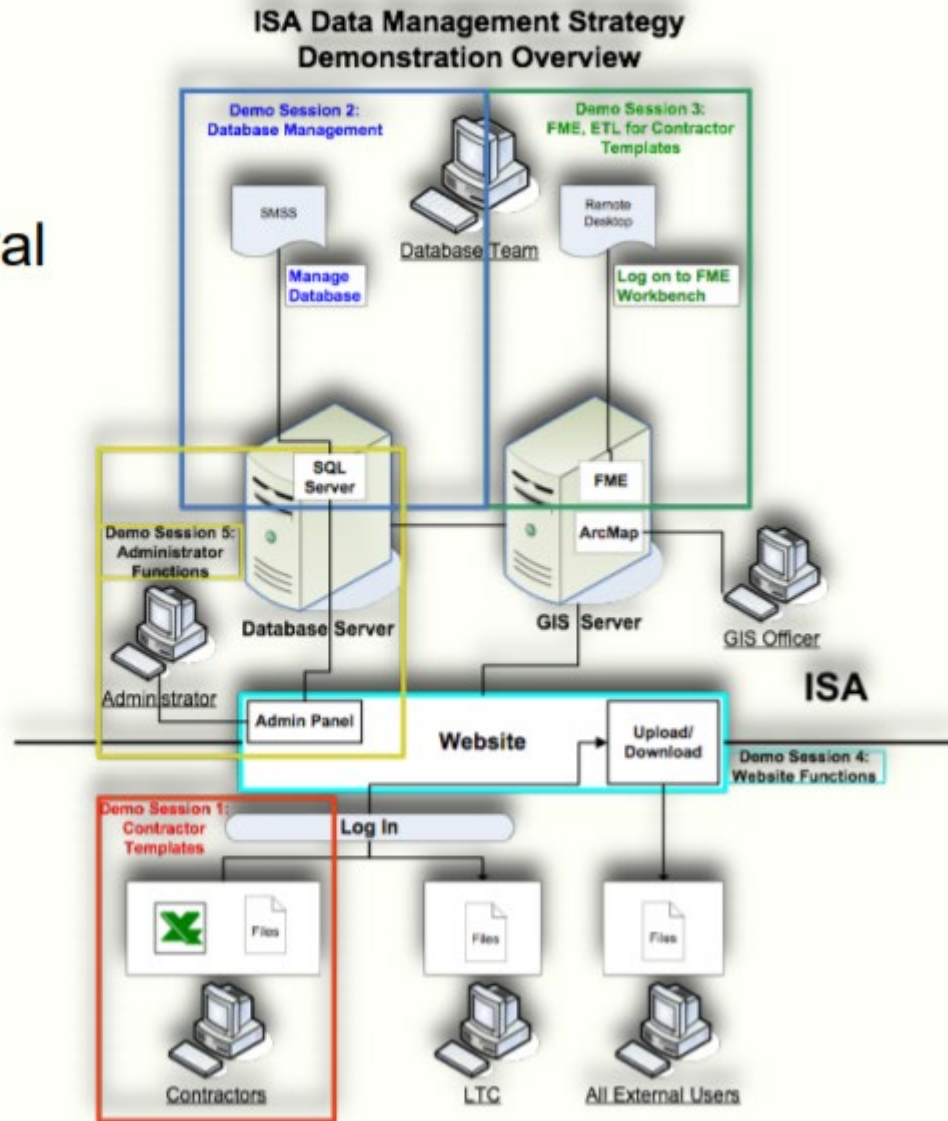
Minerals

- ▼ Polymetallic Nodules
 - Regulations
 - Recommendations
 - Contractors
- ▼ Polymetallic Sulphides
 - Regulations
 - Recommendations
 - Contractors
- ▼ Ferromanganese Crusts
 - Regulations
 - Recommendations
 - Contractors
- Central Data Repository



Approach to organize and structure for retrieval of ISA's data

Projected ending time: 1Q 2019



formerly the National Oceanographic Data Center (NODC)... [more on NCEI](#)

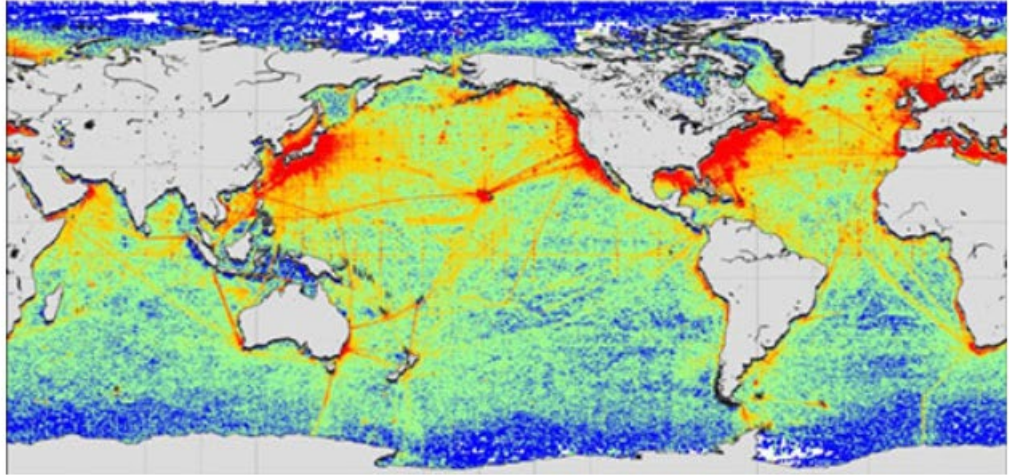
- Home
- Access Data
- Submit Data
- Public Outreach
- About

NOAA Satellite and Information Service

This Site All of NOAA

You are here: [NODC](#) > [Ocean Climate Laboratory](#) > [OCL Products](#) > WOD

WORLD OCEAN DATABASE (WOD) - prerelease



Comparison of the amount of data in WOD18 with previous ocean databases.

Dataset	NODC (1974) ¹	NODC (1991) ²	WOA94	WOD98	WOD01	WOD05	WOD09	WOD13	WOD18
OSD ³	425,000	783,912	1,194,407	1,373,440	2,121,042	2,258,437	2,541,298	3,115,552	3,199,830
CTD ⁴	n/a	66,450	89,000	189,555	311,943	443,953	641,845	848,911	1,040,223
MBT ⁵	775,000	980,377	1,922,170	2,077,200	2,376,206	2,421,940	2,426,749	2,425,607	2,426,301
XBT	290,000	704,424	1,281,942	1,537,203	1,743,590	1,930,413	2,104,490	2,211,863	2,303,538
MRB	n/a	n/a	n/a	107,715	297,936	445,371	566,544	1,411,762	1,585,135
DRB	n/a	n/a	n/a	n/a	50,549	108,564	121,828	154,900	227,825
PFL	n/a	n/a	n/a	n/a	22,637	168,988	547,985	1,020,216	1,864,992
UOR	n/a	n/a	n/a	n/a	37,645	46,699	88,190	88,190	127,544
APB	n/a	n/a	n/a	n/a	75,665	75,665	88,583	1,427,610	1,804,605
GLD	n/a	n/a	n/a	n/a	n/a	338	5,857	103,798	1,148,699
Total Stations	1,490,000	2,535,163	4,487,519	5,285,113	7,037,213	7,900,349	9,155,099	12,808,409	15,737,981
Plankton				83,650	142,900	150,250	218,695	242,727	245,059
SUR ⁶	n/a		n/a	n/a	4,743	9,178	9,178	9,289	9,289

¹ Based on statistics from *Climatological Atlas of the World Ocean* (1982).

² Based on NODC Temperature Profile CD-ROM.

³ WOD18 OSD dataset includes data from 178,442 low-resolution CTD casts and 1,708 low-resolution XCTD casts.

⁴ WOD18 CTD dataset includes data from 10,974 high-resolution XCTD casts.

⁵ WOD18 MBT dataset includes data from 80,200 DBT profiles and 5,659 Micro-BT profiles.

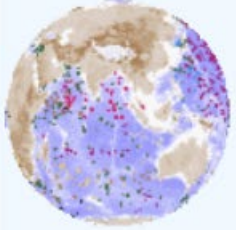
⁶ Surface data are represented differently than profile data in the WOD – all observations in a single cruise are combined into one “cast” with zero depth, values of measured variables along with latitude, longitude, and Julian year-day to identify and locate individual sets of observations.



Norad

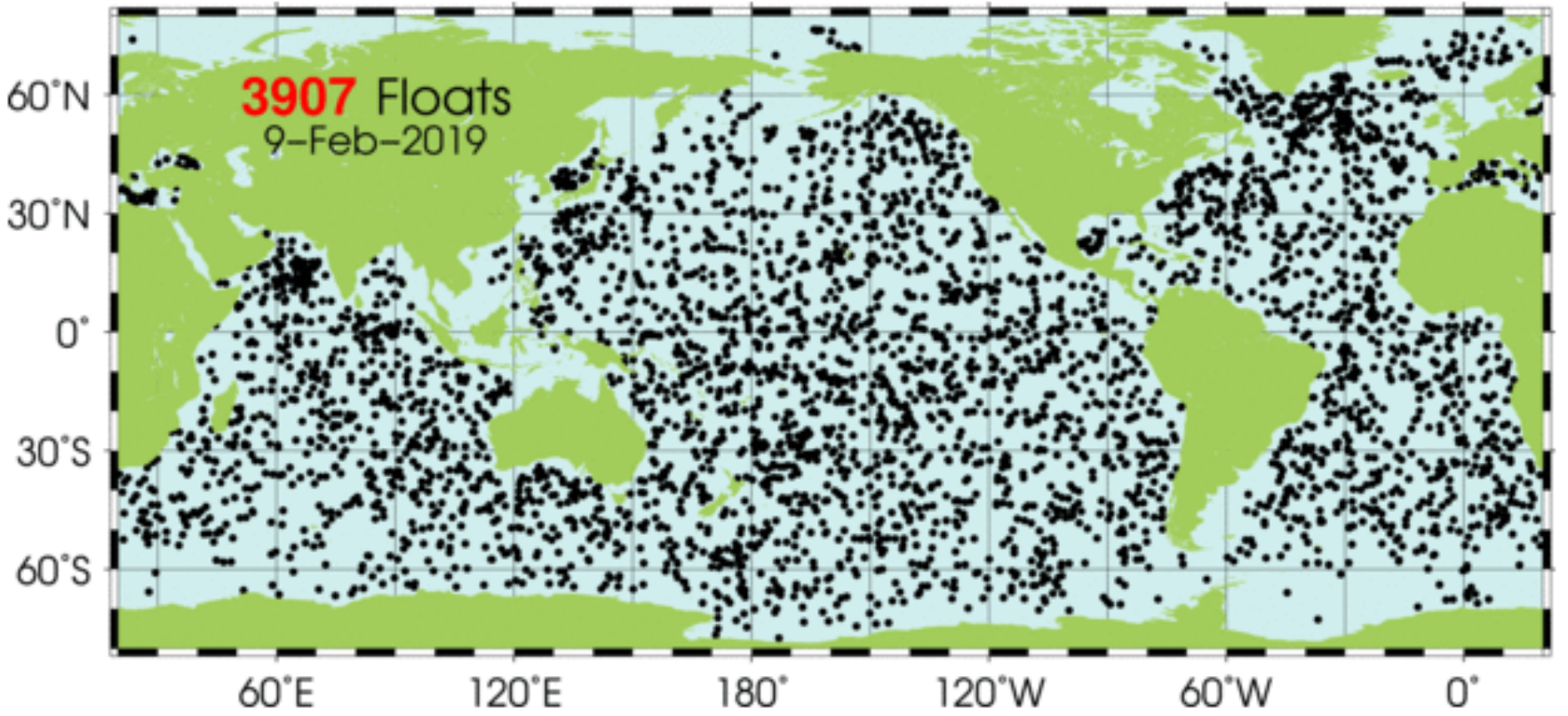
ADSR Workshop

South Africa



Argo

part of the integrated global observation strategy





Norad

ADSR Workshop

South Africa



- HOME
- ACCESS TO DATA
- DATA MGT TEAM
- DOCUMENTATION
- REFERENCE DATA BASE
- MONITORING AT GDAC
- ARGO REGIONAL CENTERS

Argo data selection

Tips: click "Download" to ... download data, click "Refresh" if "Download" is not active, click "Hide observations" to save some time.

Refresh

Download
NetCDF Argo ▾

Data display

Map display
PNG ▾

Hide observations

Help

Start date ... End date ...

17/04/2019 17/05/2019

<input checked="" type="checkbox"/>	Vertical profiles	Stations (21505)	Platforms (3772)	<input checked="" type="checkbox"/>	Times series	Platforms (3462)
<input checked="" type="checkbox"/>	Argo profiles	21505	3772	<input checked="" type="checkbox"/>	Argo trajectories	3462



Norad

ADSR Workshop

South Africa

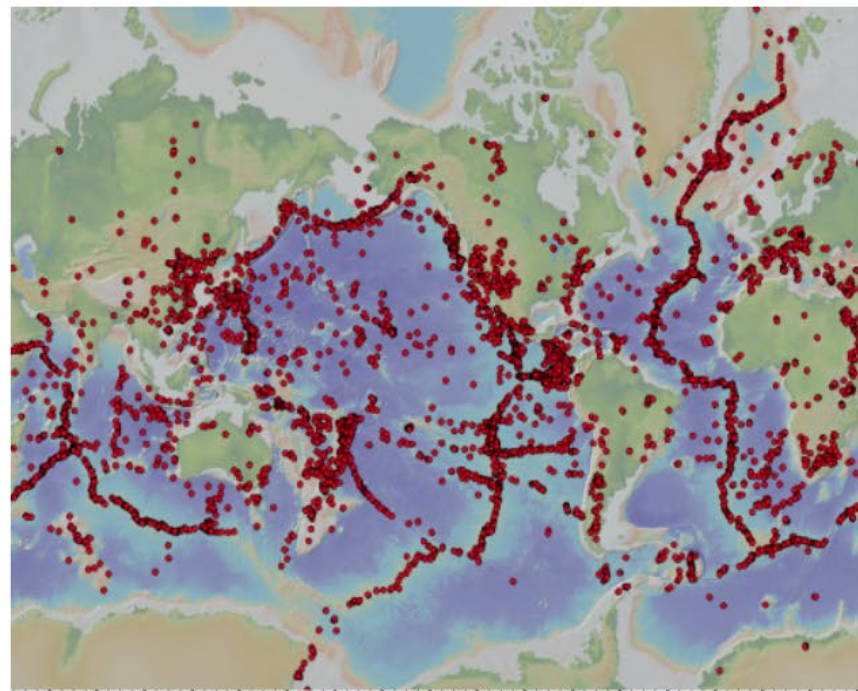
EarthChem

- Home
- About ▾
- Support & Services ▾
- Data Repositories & Syntheses ▾
- News
- Contact Us

Search PetDB Now

**Note: Safari v11.1 is not supported. Please use an earlier version or a different browser.

PetDB is a global synthesis of chemical, isotopic, and mineralogical data for rocks, minerals, and melt inclusions. PetDB's current content focuses on data for **igneous and metamorphic rocks from the ocean floor**, specifically mid-ocean ridge basalts and abyssal peridotites, and **xenolith samples** from the Earth's mantle and lower crust.





EarthChem

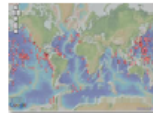
- Home
- About ▾
- Support & Services ▾
- Data Repositories & Syntheses ▾
- News
- Contact Us



SedDB Integrated Data Management for Sediment Geochemistry

Notice: Content of SedDB has been static since 2014 and will not be updated until further notice.

Location		
Longitude (°)	Latitude (°)	Longitude (°)
-180 to 180	-90 to 90	-180 to 180
North		
<input type="text"/>		
West		East
<input type="text"/>		<input type="text"/>
South		
<input type="text"/>		
Focus area:		
<input checked="" type="radio"/> NONE <input type="radio"/> CENTRAL AMERICA <input type="radio"/> IZU-BONIN-MARIANA <input type="radio"/> EQUATORIAL PACIFIC		
Water Depth Min:	<input type="text"/>	Water Depth Max:
	<input type="text"/>	



Use Map to set lat/long

Other search options:

- Select ODP/DSDP Leg/Hole/Cores
- Select by core type
- Select by sample lithology, age or data availability
- Select sample types
- Select References
- Select Analytical Parameters

Tectonic Setting:

- Aseismic Ridge
- Back Arc Basin

Search by IGSN





Norad

ADSR Workshop South Africa

OBIS OCEAN BIOGEOGRAPHIC INFORMATION SYSTEM

HOME ABOUT MAPPER DATA MANUAL GOVERNANCE SPONSOR LIBRARY CONTACT

OBIS is a global open-access data and information clearing-house on marine biodiversity for science, conservation and sustainable development

Explore OBIS

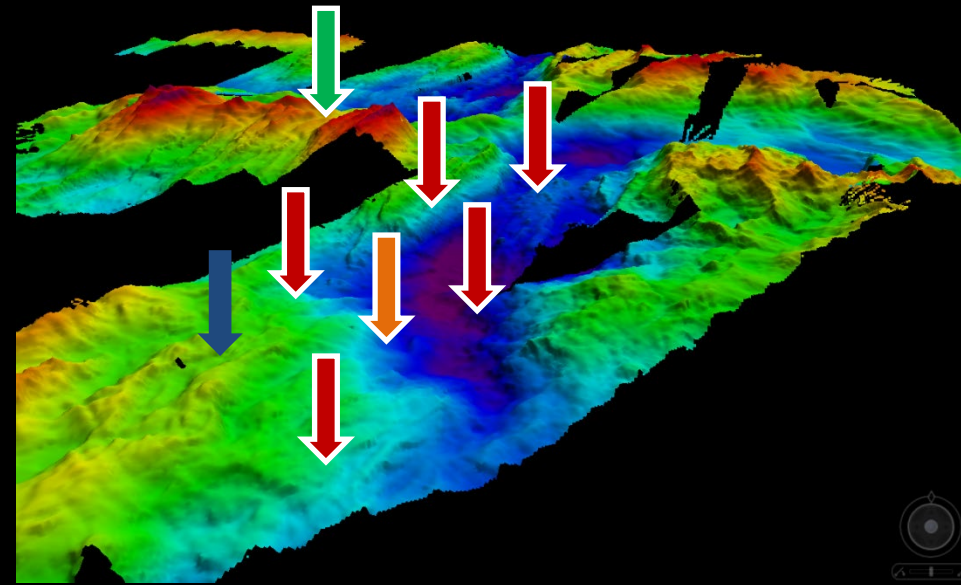
South Atlantic

Overview

Records	226,551	Download as CSV
Datasets	211	
Contributing institutes	171	
Taxa	7,372	
Species	5,762	
Red List species	598	
Invasive species	15	
Harmful microalgae	23	
Only observed here	367	



Efficient planning of missions at sea



Strategic plan of the International Seabed Authority for the period 2019–2023 (ISBA/24/A/10)

Strategic direction 3

Protect the marine environment

Strategic direction 3.3. Ensure public access to environmental information, including environmental information from contractors, and participation by stakeholders, as appropriate.

Strategic direction 4.2. Collect and disseminate the results of research and analysis, when available.

Strategic direction 4

Promote and encourage marine scientific research in the Area

Strategic direction 4.3. Strengthen and, as appropriate, establish strategic alliances and partnerships with relevant subregional, regional and global Organizations, (...), to share data and information in an open and transparent manner, avoid the duplication of efforts and benefit from synergies, (...).

Strategic direction 4.4. Be proactive in engaging with the international scientific community (...) and by promoting access to non-confidential information and data, in particular those data relating to the marine environment.

Strategic direction 9

Commit to transparency

Strategic direction 9.2. Ensure access to non-confidential information.



Norad

ADSR Workshop South Africa

Deep cean



A driver for
the Blue Economy