環境省
Ministry of the Environment

G20 Workshop on harmonized monitorin
compilation of marine plastic lit
7 September 2020

Significance of harmonized monitoring and data compilation. IODE prospective.

United Nations Educational, Scientific and Cultural Organization

Intergovernmental Oceanographic Commission

2021 2030 United Nations Decade of Ocean Science for Sustainable Development

IODE International Oceanographic Data and Information Exchange

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Introduction

Increasing demands on ocean data and information from different communities together with fragmented and unconsolidated data management approaches leads to difficulties in conducting large-scale science, analysis, modelling and support for decision making

- Science is becoming increasingly collaborative
- Increasing demands for data
- Increasing ability to collect and generate data
- Increasing expectations of researchers (e.g. must think globally, providing access to data an emerging requirement for publication)

Only joint efforts can stimulate data and information access, sharing and integration aiming at delivering knowledge, products and services more effectively to global user communities

Issues and challenges

International organizations, programmes and projects have developed data and information management programmes and activities with national, regional or global focus, often in isolation

Data management as joint effort should strengthen existing data and information systems to better manage the marine environment and serve user communities

Coordination and cooperation among Member States, partners and user communities

Impediments of data sharing, finding, accessing and using the data and related information – cultural, political and financial

- We need to overcome those and make a best use of the new technologies already in place and to be developed and/or applied
- We need a joint data management strategy that will allow actively use the data and metadata standards, communications protocols, software, and policies that will knit the parts into a fully integrated approach

International Oceanographic Data and Information Exchange (IODE)

International Oceanographic Data and Information Exchange (IODE) of IOC of UNESCO was established in 1961.

Its purpose is to enhance marine research, exploitation and development, by facilitating the exchange of oceanographic data and information between participating Member States, and by meeting the needs of users for data and information products.

Objectives:

i) To facilitate and promote the discovery, exchange of, and access to, marine data and information including metadata, products and information in real-time, near real time and delayed mode, through the use of international standards, and in compliance with the IOC Oceanographic Data Exchange Policy for the ocean research and observation community and other stakeholders

ii) To encourage the long term archival, preservation, documentation, management and services of all marine data, data products, and information

iii) To develop or use existing best practices for the discovery, management, exchange of, and access to marine data and information, including international standards, quality control and appropriate information technology

International Oceanographic Data and Information Exchange (IODE)

Objectives:

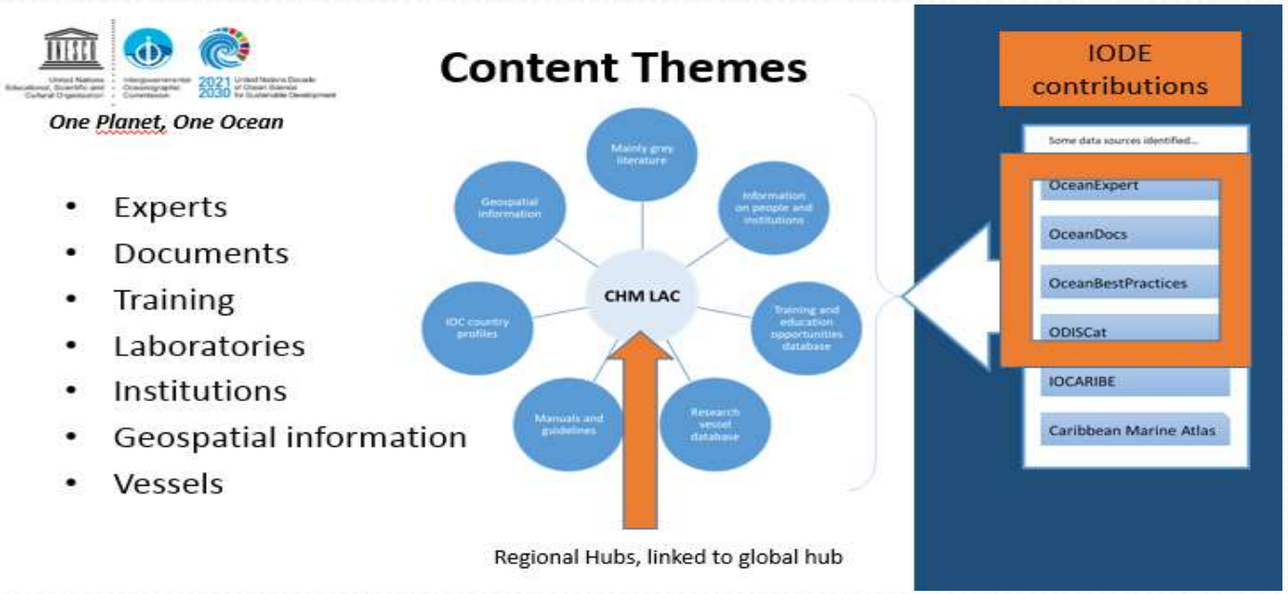
iv) To assist Member States to acquire the necessary capacity to manage marine research and observation data and information and become partners in the IODE network;

v) To support international scientific and operational marine programmes, including the Framework for Ocean Observing for the benefit of a wide range of users

IODE Network structure:

- 67 NODCs
- 29 Associate Data Units (ADUs)
- 9 “accredited” NODCs
- 1 “accredited” ADU
- 5 Associate Information Units (AIUs)

Total – 96 formal network members



IOC data and information :IODE

World Ocean Database (WOD)
world's largest collection of vertical profile data of ocean characteristics

Ocean Biodiversity Information System (OBIS)
global open-access data and information clearing-house on marine biodiversity for science, conservation and sustainable development

Ocean Data Portal (ODP)
interconnected data repository portal

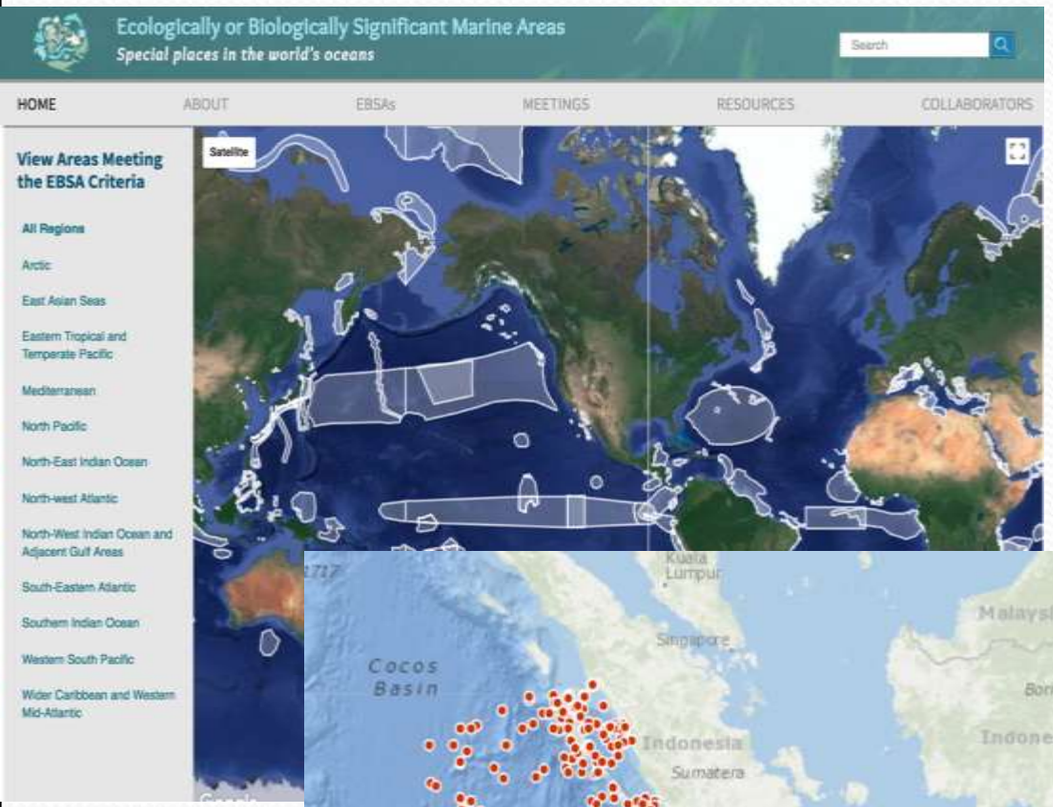
OceanDocs

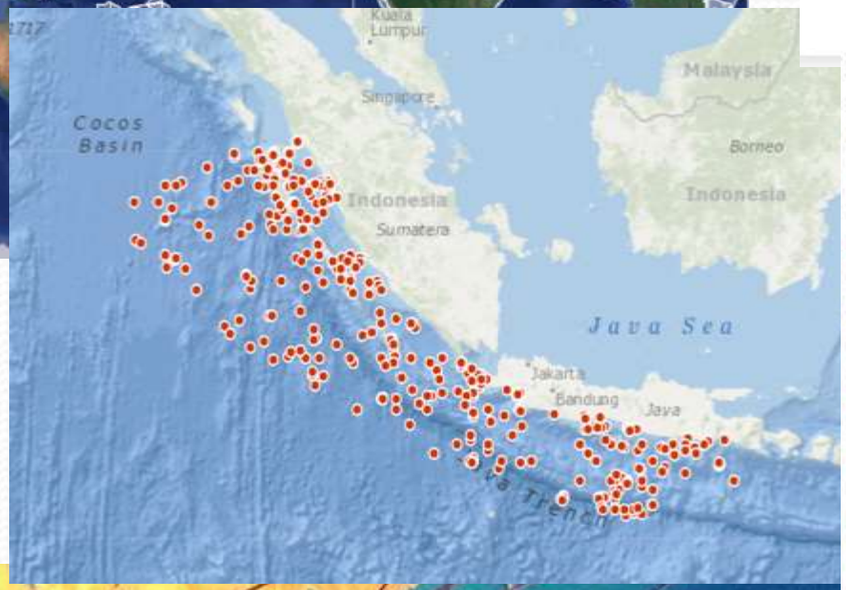
OceanExpert

Ocean Best Practices

ODISCat

OBIS





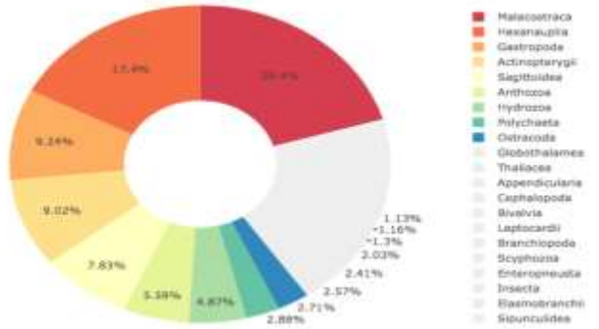
obis.org/area/10126

OBIS OCEAN BIOGEOGRAPHIC INFORMATION SYSTEM

Java-Sumatran Upwelling

STATISTICS

Occurrence records	11,360
› Species level	3,792
Species	853
Taxa	998
Datasets	71
Time range	1837 - 2018



NEWEST SPECIES

Scientific name	Records	Since
Rhincodon typus Smith, 1828 EN Phylum Chordata > Class Elasmobranchii	10	2018
Paracaesio sordida Abe & Shinohara, 1962 Phylum Chordata > Class Actinopterygii	1	2010
Parotrypauchen microcephalus (Bleeker, 1860) Phylum Chordata > Class Actinopterygii	3	2010
Choerodon robustus (Günther, 1862) Phylum Chordata > Class Actinopterygii	2	2009
Lepidochelys olivacea (Eschscholtz, 1829) VU Phylum Chordata > Class Reptilia	13	2009
Crambionella helmbiru Nishikawa, Mulyadi & Ohtsuka, 2014 Phylum Cnidaria > Class Scyphozoa	1	2009
Globigerinita glutinata (Egger, 1893) Phylum Foraminifera > Class Globothalamea	25	2005
Neogloboquadrina dutertrei (d'Orbigny, 1839) Phylum Foraminifera > Class Globothalamea	26	2005
Pulleniatina obliquiloculata (Parker & Jones, 1862) Phylum Foraminifera > Class Globothalamea	25	2005
Globoconella inflata (d'Orbigny, 1839) Phylum Foraminifera > Class Globothalamea	25	2005

TOP TAXA

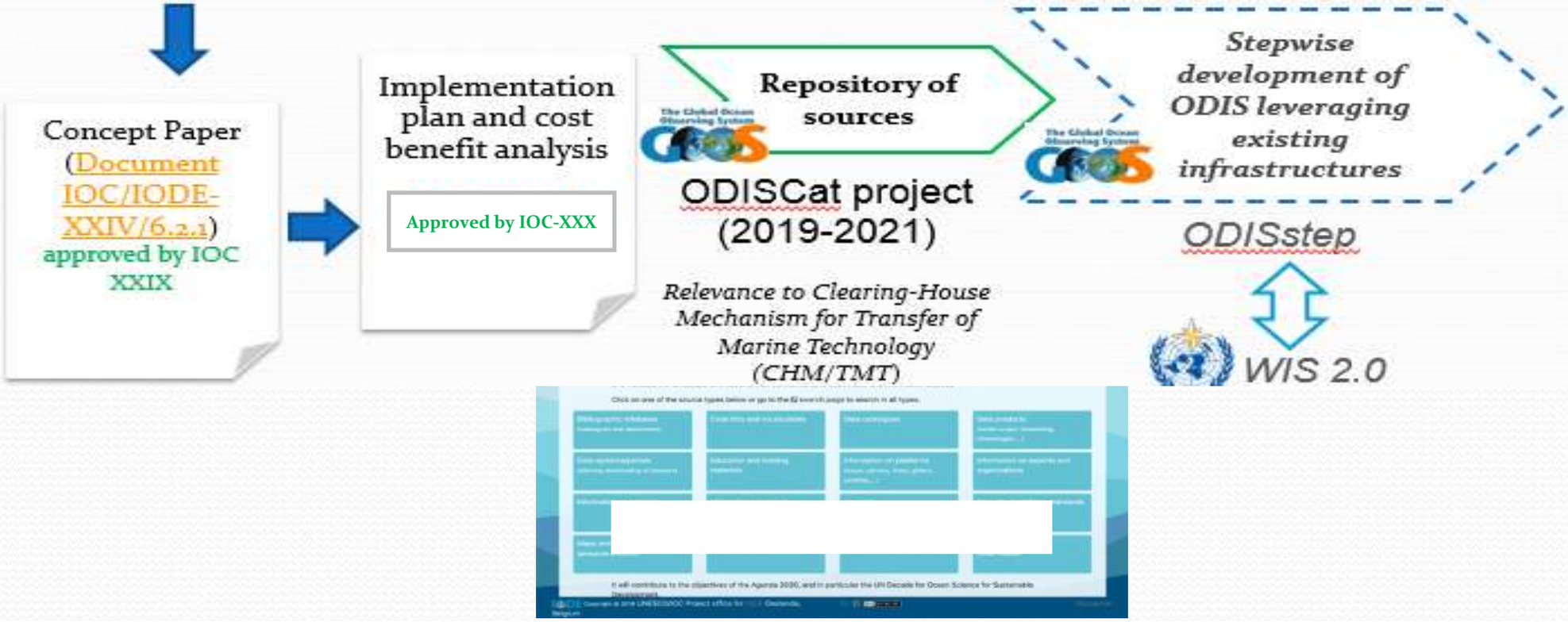
Unique species | IUCN Red List | All taxa

Scientific name	Records
Cirrhilabrus adornatus Randall & Kunzmann, 1998 Phylum Chordata > Class Actinopterygii	13
Ecsenius polystictus Springer & Randall, 1999 Phylum Chordata > Class Actinopterygii	5
Paraedwardsia lemchei Carlgren, 1956 Phylum Cnidaria > Class Anthozoa	4
Theonella lacerata Lendenfeld, 1907 Phylum Porifera > Class Demospongiae	2
Makrokylindrus (Adiastylis) hadalis Jones, 1969 Phylum Arthropoda > Class Malacostraca	2
Capillaster asterias AH Clark, 1931 Phylum Echinodermata > Class Crinoidea	2
Vesicomya sundaensis (Knudsen, 1970) Phylum Mollusca > Class Bivalvia	2
Mimonectecla subchelata M. Vinogradov, 1964 Phylum Arthropoda > Class Malacostraca	2
Elpidia sundensis Hansen, 1956 Phylum Echinodermata > Class Holothuroidea	2

IOC Ocean Data and Information System (ODIS)

IOC Ocean Data and Information System (ODIS) – an e-environment where users can discover coastal and ocean data, information and associated products or services provided by IOC Member States, projects and other partners associated with.

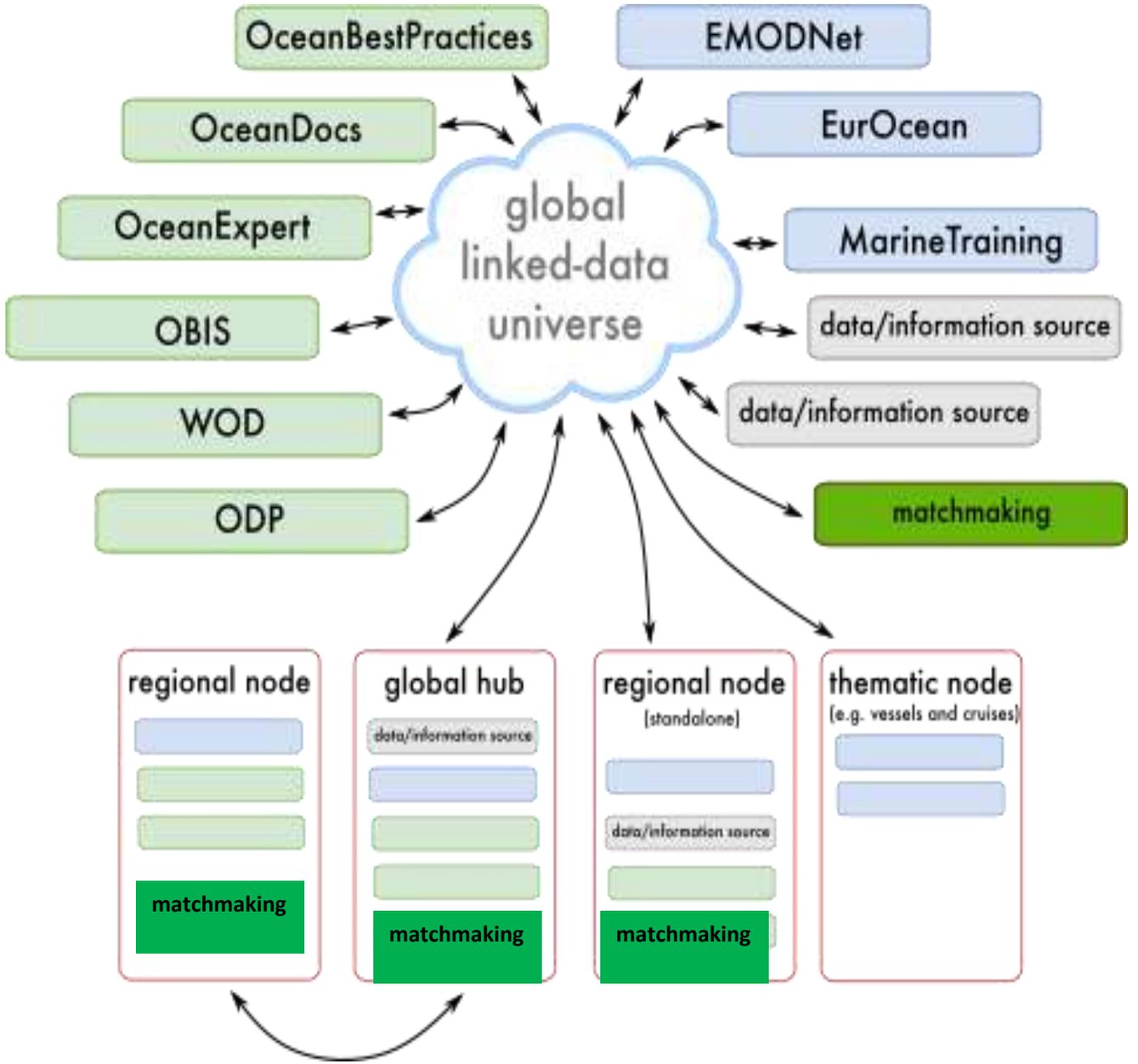
Target : Improve the discovery, access, semantic and technical interoperability of existing data and information, and to contribute to the development of a global ocean data and information system



ODISCat: IOC catalogue of sources

Bibliographic infobases (catalogues and repositories)	Code lists and vocabularies	Data catalogues	Data products (model output, forecasting, climatologies,...)
Data systems/portals (allowing downloading of datasets)	Education and training materials	Information on platforms (buoys, sensors, floats, gliders, satellites,...)	Information on experts and organizations
Information on projects	Information on vessels	Journals (open source and commercial)	Manuals, guidelines, standards and best practices
Maps and atlases (geospatial products)	Multimedia content	Real-time observing systems	Software (ocean related)

IOC Ocean Infohub



OCEAN BEST PRACTICES SYSTEM (OBPS)

The OBPS is an IOC project with an operational system currently with 913* best practices supporting the entire ocean community in sharing methods and developing best practices. The OBPS follows the FAIR principles of findability, accessibility, interoperability and reproducibility.

Repository/Advanced Technology

Peer Reviewed Publications

frontiers

Training

OceanTeacher GLOBAL ACADEMY

User Support

Good, Better and Best

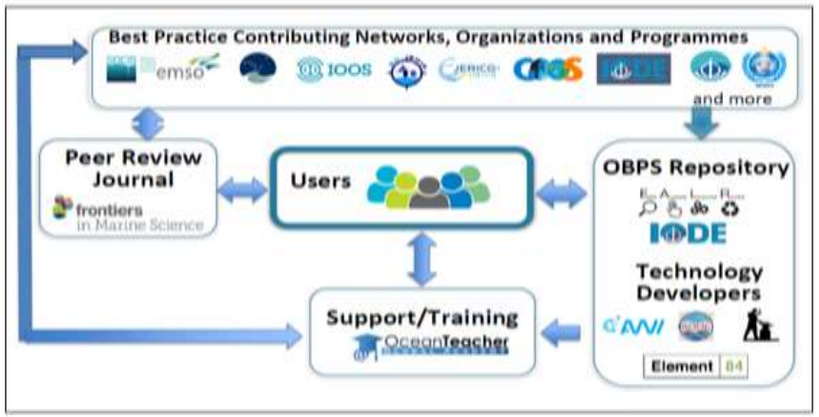
A Newsletter for Practices of Ocean Observing & Applications

Issue 4 · August 2018

*as of December 25 and still growing

Ocean Best Practices System

A Resource for Ocean Sciences and Operations



***OBPS Vision:** To have agreed and broadly adopted methods across ocean research, operations and applications*

Supporting the entire value chain

Wider adoption and use of ocean-related best practices leveraging community capabilities on regional and global scales

Better support for observation, research, services communities (*quality and consistency of observations, interoperability of data, efficiency, transparency – data traceability and reproducibility, resource for training and capacity development, etc.)*

- ❑ Not all best practice knowledge is documented
- ❑ They are scattered and can be hard to find
- ❑ Can be lost when a project ends
- ❑ Promising methods may not be shared
- ❑ Work to create a best practice is often not acknowledged

Ocean Best Practices System — marine plastic

- Guidelines for Harmonizing Ocean Surface Microplastic Monitoring Methods:

Guidelines for Harmonizing Ocean Surface Microplastic Monitoring Methods. Version 1.1.

Michida, Yutaka, Chavanich, Suchana, Chiba, Sanae, Cordova, Muhammad Reza, Cozsar Cabanas, Andrés, Glagani, Francois, Hagmann, Pascal, Hinata, Hirofumi, Isobe, Atsuhiko, Kershaw, Peter, Kozlovskii, Nikolai, Li, Daoji, Lusher, Amy L., Marti, Elisa, Mason, Sherri A., Mu, Jingli, Saito, Hiroaki, Shim, Won Joon, Syakti, Agung Dhamar, Takada, Hideshige, Thompson, Richard, Tokai, Tadashi, Uchida, Keiichi, Vasilenko, Katerina, Wang, Juying

Guidelines for Harmonizing Ocean Surface Microplastic Monitoring Methods. Version 1.0. [SUPERSEDED by http://dx.doi.org/10.25607/OBP-867]

- Guidelines for gathering Microlitter datasets:

Proposal for gathering and managing data sets on marine micro-litter on a European scale. [Updated version: 07/06/2019]

Galgani, Francois, Giorgetti, Alessandra, Vinci, Matteo, Le Moigne, Morgan, Moncoiffe, Gwenaelle, Brosich, Alberto, Molina, Eugenia, Lipizer, Marina, Holdsworth, Neil, Schlitzer, Reiner, Hanke, Georg, Schaap, Dick, Addamo, Anna

Proposal for gathering and managing data sets on marine micro-litter on a European scale. [Updated version: 19/04/2019] [SUPERSEDED by http://dx.doi.org/10.25607/OBP-495]

Galgani, Francois, Giorgetti, Alessandra, Vinci, Matteo, Le Moigne, Morgan, Moncoiffe, Gwenaelle, Brosich, Alberto, Molina, Eugenia, Lipizer, Marina, Holdsworth, Neil, Schlitzer, Reiner, Hanke, Georg, Schaap, Dick, Addamo, Anna

Guidelines and forms for gathering marine litter data. [Updated version: 26/03/2019]

Proposed actions

- Create and maintain an approachable, robust, and extensible set of common and best practices to promote and enable global coordination across scales, sectors, and capacities. These would include methods to:
- Promote and enable automated discoverability of data and information
- Promote and enable access to data while respecting controls where needed
- Promote and enable interoperability, from datasets to infrastructures, allowing rapid integration, analysis, and synthesis
- Promote a modern and scalable data stewardship culture, embracing principles such as the 5 stars of linked open data

- Promote and enable the use of standards and shared global frameworks
- Promote and enable the participation by all stakeholders through partnership at multiple levels, including through common platforms, communities of practice/networking
- Promote and enable capacity sharing and development, as well as technology transfer, across networks to raise global capacity
- Promote and enable the delivery of tailored data and information products and services (particularly those relevant to global threats such as rapid climate change and biodiversity loss) to end users across stakeholder groups through custom interfaces, dashboards, and other user experience solutions

- **Joint activities under the IODE OBIS, OBPS and ODIS**
- **Cooperative activities under the UN Decade, SDGs**

http://www.iode.org