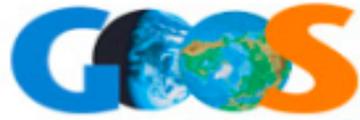




United Nations
Educational, Scientific and
Cultural Organization



Intergovernmental
Oceanographic
Commission



Ocean Best Practices System

Albert Fischer (IOC/UNESCO)

for the Ocean Best Practices Working Group

Mark Bushnell, Pier Luigi Buttigieg, Cyndy Chandler, Katja Fennel, Juliet Hermes, Emma Heslop, Johannes Karstensen, Frank Muller-Karger, Arno Lambert, Cristian Muñoz, Françoise Pearlman, Jay Pearlman, Peter Pissierssens, Rachel Przeslawski, Nick Roden, Pauline Simpson

OceanPredict '19 Meeting - GODAE OceanView Symposium 2019 - May, 6-10, 2019, Halifax, Nova Scotia, Canada



Why a system for Best Practices?

Best practices bring many benefits:

- Quality and consistency of observations
- Interoperability of data
- Efficiency (don't re-invent the wheel)
- Data traceability
- Connections between data, models and applications

BUT:

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



What is a best practice?

Best Practice Definition:

A best practice is a methodology that has repeatedly produced superior results relative to other methodologies with the same objective.

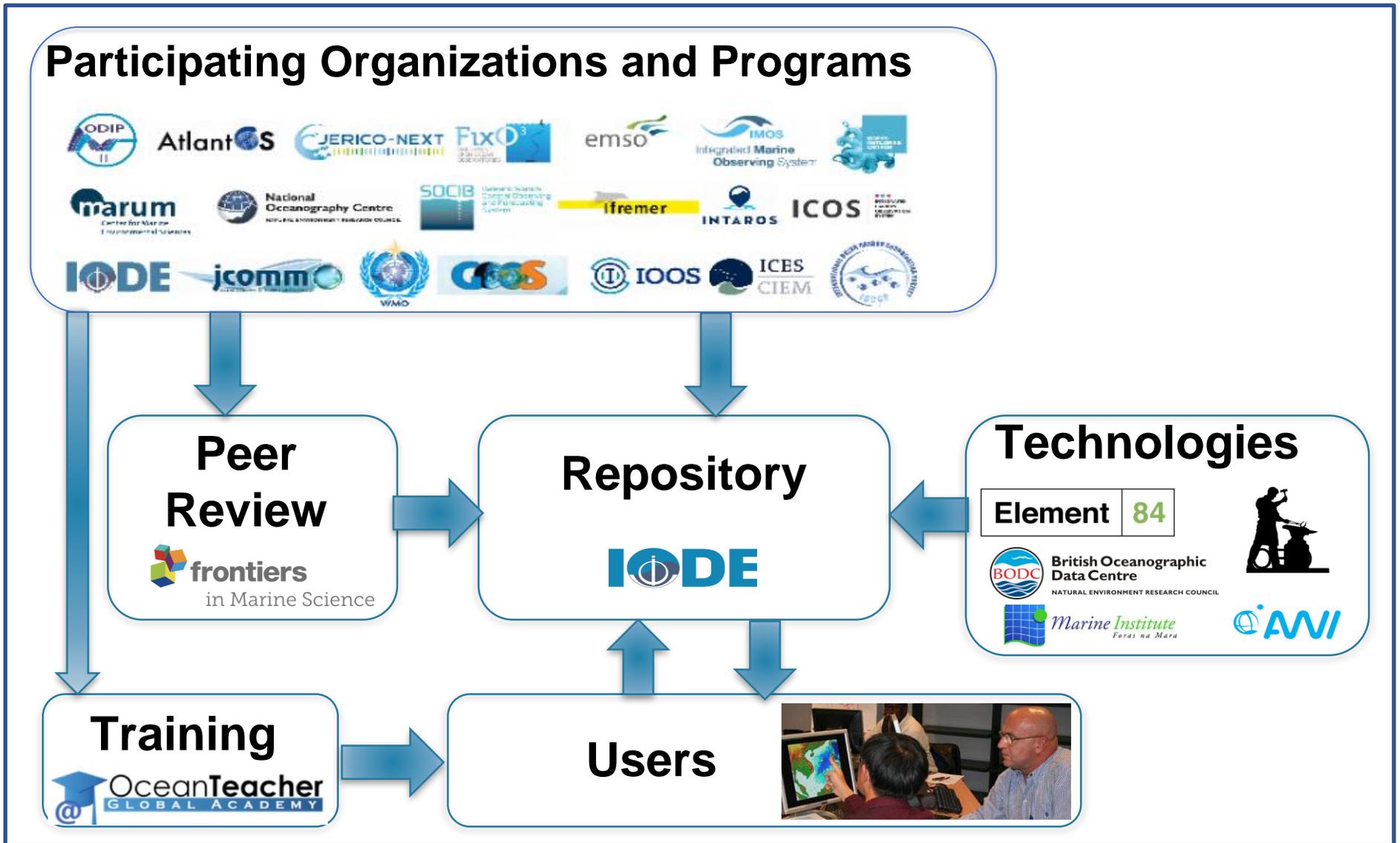
To be fully elevated to a best practice, a promising method must be adopted, used, and tested by multiple organizations and/or communities.

(From First OBP Workshop, IOC, Paris, France, Nov 2017)

Best practices can be standard operating procedures (SOPs), manuals, handbooks, guides, cookbooks, published papers, training and educational material.



The Ocean Best Practices System



Components of the Ocean Best Practices System



The Repository

<https://www.oceanbestpractices.org>



OceanBestPractices

Repository of Ocean Community Practices in
Ocean Research, Observation and
Data/Information Management

↑ OceanBestPractices Home

FAIR: Findable, Accessible, Interoperable, Reusable

OceanBestPractices (OBP) is a document (and other objects) repository. It is a community accepted existing ocean best practices and data/information management components to share with their colleagues. More...

Over 650 best practices submitted

Documents (some may be available soon)

Search interface powered by natural language (ontology)

Community OceanBestPractices

- Global, permanent, open access repository, hosted by IOC/UNESCO
- All elements of the ocean information value chain.
- DOIs issued, version control, standard metadata, active links
- Templates supporting uniform submission and processing
- Notification services to keep track of updates



Natural language search technology

ABOUT RECOMMENDED CITATION FAQ CONTACT US OCEANKNOWLEDGE TAGGER SUBMIT A NEW BEST PRACTICE

United Nations Educational, Scientific and Cultural Organization Intergovernmental Oceanographic Commission

ocean best practices

All Fields ▾ sea ice Advanced ▾ Q X

sea ice

Sea ice remote sensors

Search Tips

Search **656 documents** tagged with **121029 terms** from **6 terminologies**

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Easily discoverable and comparable content, powered by ocean-focused search and indexing technology

Journal Research Topic – Frontiers in Science



Research Topic

Best Practices in Ocean Observing

Comment

0



Manage topic

Submit your abstract

Submit your manuscript

Overview

Articles **9**

Authors **152**

Impact

Comments

VIEWS
15,485

- Recognizing best practice creators
- Helping unlock potential beyond immediate group of experts
- Providing a forum for community discussion

Recent submission gained **2000 views within a couple weeks**
'Advancing marine biological observations and data requirements of the complementary Essential Ocean Variables (EOVs) and Essential Biodiversity Variables (EBVs) framework.

www.frontiersin.org/research-topics/7173



Community input and engagement

2nd Workshop, December 2018, IOC, Paris:

- Ensure key community endorsed best practices are submitted and visible, e.g. from across GOOS
- Look how to incorporate community feedback
- Support development and identify opportunities for harmonisation
- Address the full value chain from data to models to applications

Community engagement:

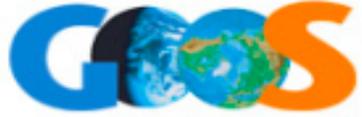
- Articles: EOS, OceanObs19 White Paper and breakout session
- Newsletter: bpcommunity@oceanbestpractices.org
- Webinar: August 2018: <https://www.youtube.com/watch?v=VTf1E0WqH5w>
- Ocean science & community fora, e.g. JCOMM Observation Coordination Group, OceanPredict '19
- Over 650 best practices submitted
- Best Practice articles published in Frontiers



Figure 2: Ocean Best Practices Workshop II, Paris, Dec 2018 participants (Nadia Pinardi missing)



Evolution

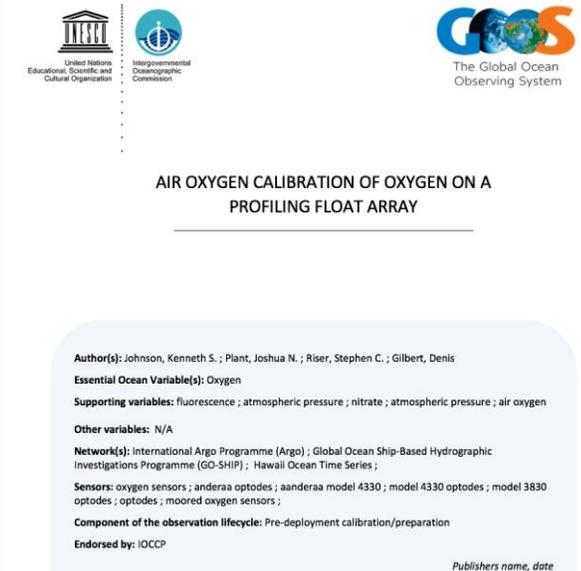


Adoption as a GOOS/IODE co-project – IOC assembly July

- Stability for baseline operations
- Technology advances and system development through projects
- Support for GOOS vision

Next steps:

- Define evolution – Ocean Obs'19 breakout
- GOOS 'endorsement' process – IO key community best practices
- Engage with ocean modelling, data management, and applications
- Enhance repository with community review capability
- Enrich ontologies – expand capability and connect to users and policy makers (e.g. through SDG ontology)
- Support BP creation - e.g. seek funding for workshops
- Integrate training – IODE Ocean Teacher, videos, courses

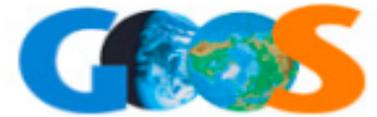


The image shows the cover page of a technical report. At the top left are the logos for UNESCO (United Nations Educational, Scientific and Cultural Organization) and IOC (Intergovernmental Oceanographic Commission). At the top right is the GOOS logo. The title of the report is "AIR OXYGEN CALIBRATION OF OXYGEN ON A PROFILING FLOAT ARRAY". Below the title, there is a light blue box containing the following information: Author(s): Johnson, Kenneth S.; Plant, Joshua N.; Riser, Stephen C.; Gilbert, Denis; Essential Ocean Variable(s): Oxygen; Supporting variables: fluorescence; atmospheric pressure; nitrate; atmospheric pressure; air oxygen; Other variables: N/A; Network(s): International Argo Programme (Argo); Global Ocean Ship-Based Hydrographic Investigations Programme (GO-SHIP); Hawaii Ocean Time Series; Sensors: oxygen sensors; anderaa optodes; anderaa model 4330; model 4330 optodes; model 3830 optodes; optodes; moored oxygen sensors; Component of the observation lifecycle: Pre-deployment calibration/preparation; Endorsed by: IOCCP. At the bottom right of the box, it says "Publishers name, date".



Best Practices and the OceanPredict community

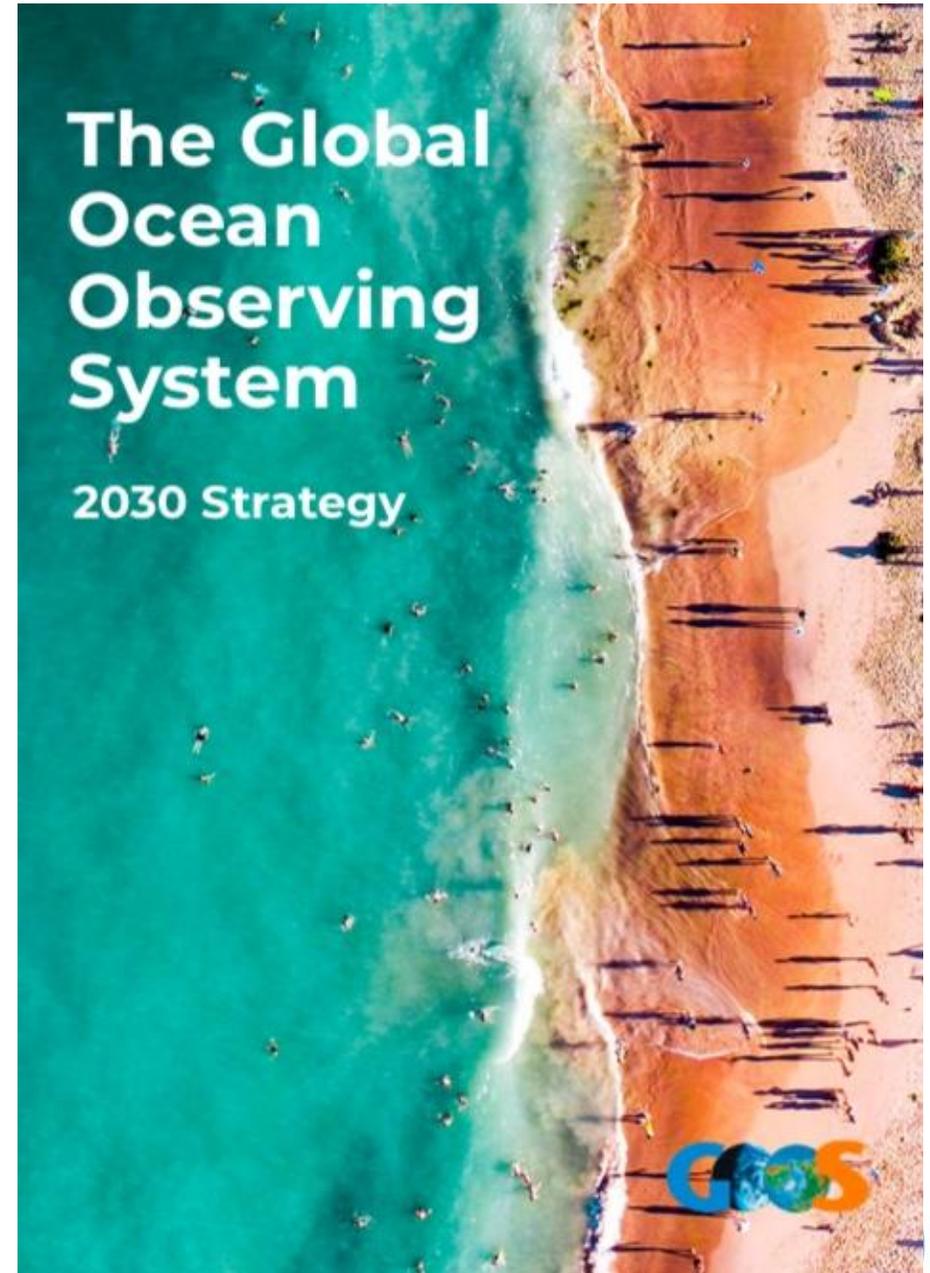
- Identify and document key methodologies
- Submit best practices to the Ocean Best Practice System – e.g. ETOOFS Manual for Ocean Forecasting
- Engage with OBPS in considering an OceanPredict ‘endorsement’ process
- Consider submitting a community paper to Frontiers in Science, for example on best practices for assimilation, seamless forecasting, BGC modelling...?



An ambitious strategy for the whole global ocean observing system

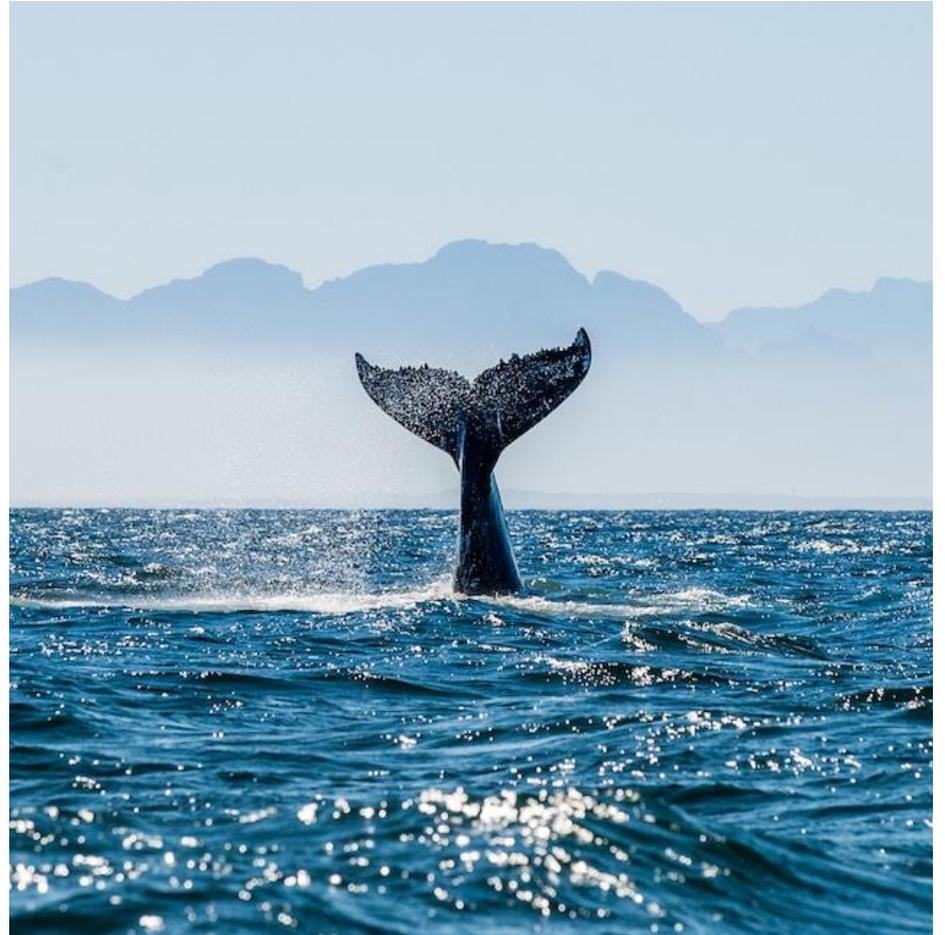


*We are building a
long term, sustained
capability to support
the 2030 Strategy*



Vision

A truly global ocean observing system that delivers the essential information needed for our sustainable development, safety, wellbeing and prosperity



Vision

A truly global ocean observing system that delivers the essential information needed for our sustainable development, safety, wellbeing and prosperity





Research and innovation



Partnerships for delivery

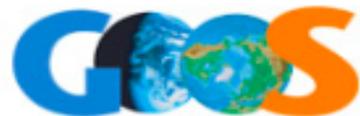


Supporting the globalization of Ocean Best Practices

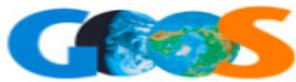
The OBPS supports the entire ocean community in sharing methods and developing best practices.

We provide discovery and access to relevant and tested methods, from observation to application, as well as a foundation for increasing capacity

We are building a long term, sustained capability



Ocean Best Practices Team



Best Practices Working Group:

Mark Bushnell
Pier Luigi Buttigieg
Cindy Chandler
Katja Fennel
Juliet Hermes
Emma Heslop
Johannes Karstensen
Frank Muller-Karger

Arno Lambert
Cristian Muñoz
Francoise Pearlman
Jay Pearlman
Peter Pissierssens
Rachel Przeslawski
Nick Roden
Pauline Simpson



CCMI

