JCOMM OCG Mission

- Develop, coordinate and maintain ocean observing networks (including satellites and related telecom services); monitor the efficiency of the overall observing system; and recommend and coordinate changes designed to improve it.

- OCG has lead responsibility for a number of important and well-established observational programs, which are managed by bodies that report through JCOMM.

http://www.jcommops.org/reportcard2018/
Vision for S&BP within JCOMM

Identify, coordinate and promote development of standards and documented best practices across all areas of ocean observing and marine meteorological platforms of JCOMM, partner networks and activities.

Catalogue and review BP, identify gaps and areas where an holistic approach across platforms and variables can be taken. Create a review, publication and evaluation process, encourage use of the OceanBestPractices System including Repository, and provide training in support of delivering multiplatform datasets by variable of known quality.
Challenges of Best Practices (BP)

Large investments in high quality measurements

But:

➢ Quality of BP Documentation varies widely
➢ Data and metadata formats are inconsistent
➢ Machine readability is limited (if at all)
➢ Sustainability is often not guaranteed
Ocean Best Practices Working Group

- **Vision:** increase efficiency, reproducibility, and interoperability of the entire ocean observing value chain by providing the ocean observing community with a unified, sustained, and readily accessible knowledge base of interdisciplinary best practices.

- **Mission:** to provide coordinated and sustained global access to best practices in ocean observing to foster innovation and excellence. By developing a system & engaging ocean observing communities in a joint and coordinated effort in producing, reviewing and sustaining BP documents.
Ocean Best Practice System (OBP-S)

UNESCO/IOC IODE best practice repository providing a sustained, open access, and internationally recognized repository based on FAIR and open principles.

Repository: Oceanbestpractices.net

The community of ocean best practice developers and users, key components of which are OCG Networks, GRAs, and GOOS panels.

Advanced indexing which will be integrated into a system that provides increased discoverability and access to BP documents through simple interfaces, metrics and advanced ocean knowledge based semantic indexing and search.

Participating Organizations and Programs
- UNESCO/IOC IODE
- jcom Peer Review Journal, Frontiers
- Ocean Best Practice System (OBP-S)
- Users of BP
- Support Training, etc.
OceanBestPractices Repository
https://www.oceanbestpractices.net

FAIR: Findable, Accessible, Interoperable, Reusable

- Hosted by UNESCO/IOC - IODE, A central, permanent, curated, open access repository, DOIs issued
- Links BPs to EOVs and SDGs
- The HUB of the Ocean Best Practices System
- Submissions will be FAIRRified in the OBP-S

The future will be fueled by your BPs! Submission is easy and we’re here to help.
**Document Data Sheet v4.2** (for submissions to [www.oceanbestpractices.net](http://www.oceanbestpractices.net))

We recommend including this document data sheet into your Best Practice document. **Please do not change any formatting, entries in the left column, or the table structure.** The format below will allow automatic ingest of the data in this table into the OceanBestPractices Repository. Enter data only in the right-hand column.

Mandatory fields are indicated with ** but we strongly recommend that you provide data (if applicable) for all the metadata fields requested; this will allow you to unambiguously declare what your best practice is about and help our indexing technology make it more visible.

<table>
<thead>
<tr>
<th>Best practice type</th>
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<tr>
<td>Choose upto 2 entries from the list below. Separate multiple entries with a semicolon (;)</td>
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<td>- Best Practice</td>
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<td>- Standard Operating Procedure</td>
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<td>- Manual (incl. handbook; guide, cookbook)</td>
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<td>If the title was not originally in English, please include it in its original form here. If applicable, include a sub-title after a colon (:), and version code after the text (e.g. Version 3.2).</td>
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Creating a weekly Harmful Algal Bloom bulletin. Version 1.0. [Best Practice Description Document]

This document describes the procedural steps in creating an information product focused on toxic and harmful phytoplankton. The product is an online Harmful Algal Bloom (HAB) bulletin for aquaculturists, who can face serious operational challenges in the days after a HAB event. Data from satellite, numerical hydrodynamic models and in-situ ocean observations are organised and presented into visual information products. These products are enhanced through local expert evaluation and their interpretation is summarised in the bulletin. This document aims to provide both process overviews (the "what" of the Best Practice in producing the bulletin) and detail procedures (the "how" of the Best Practice) so that the bulletins may be replicated in other geographic regions.....

Resource URL
https://oar.marine.ie/handle/10793/1344

Publisher
Marine Institute
Galway, Ireland

Document Language
en
The OBP repository has reached a milestone of 300 best practices. This is nearly double what was available prior to the beginning of the OBP System project a little over a year ago.

Congratulations to the team and thanks to all of you in the community for your contributions of best practices!!
TO BE INTEROPERABLE:

I1. (meta)data use a **formal, accessible, shared, and broadly applicable language** for knowledge representation.

I2. (meta)data use **vocabularies that follow FAIR principles**.

I3. (meta)data include **qualified references** to other (meta)data.
This document includes methods to sense seepage of methane from the seafloor ...
Knowledge-linked best practices: Using Semantics and Natural Language Processing in Best Practice documents

- Retrieve the common **chemicals** used in “Best practices for nitrate measurements” and “Best practices for nitrous oxide measurements”

- Retrieve all the **sensors** manufactured by company X used to sense oxygen in any deep sea environment

- What **software** does the **author** Jane Doe use in her best practices about coral reefs?
Ontologies / Vocabularies

Merged knowledge-base

Tagging Module

Semantic + ElasticSearch interface

Raw text extraction

Link back to original documents

Submission interface

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

BP Developers

Ocean Observation Section for BPs
Explore knowledge neighbourhood to enhance discovery

Cryosemantics working group
Leveraging contextual domain knowledge to enhance search
Conclusions

● The technologies powering the OBP-S can preserve, expose, and help you manage your BPs, while linking them to pooled knowledge and (soon) data holdings

● Knowledge - in your submitted BPs - will shape these technologies, bringing your research and observation themes into the Linked Datascape

● Interoperability - the OBP-S supports within network and inter-network use of best practices
Global Best Practice System

Participating Organizations and Programs

Peer Review Journal

Repository

Support Training, etc

Advanced Technology

The User
Why adding a Peer-Review for Ocean Observing Best Practices?

- Best Practice “Theme” has many facets - more than a Manual
- Peer Review unlock potential for a broader importance beyond your group of experts
- Adding credibility for creators (citable literature, JIF)
- **Why not** *Journal of Atmospheric and Oceanic Technology* or *Deep Sea Research* “Methods” or similar?
  
  1. Only first/novel description are acceptable no regular update process
  2. Only certain aspects of BP are acceptable no reference to comprehensive IODE Ocean Best Practice Repository
  3. Only accessible via costly subscription and limited “machine to machine” access (e.g. ontology)
Frontiers - Research Topic, Best Practices in Ocean Observing

www.frontiersin.org/research-topics/7173

Research Topic

Best Practices in Ocean Observing

Submit your abstract  Submit your manuscript

Overview  1  Articles  73  Authors  Impact  Comments

About this Research Topic

An immense corpus of well-tested methodology in ocean observing has been and is being amassed by national, regional, and international observatory networks. However, despite the quality of these efforts, the discoverability and sustainability of high-quality methodology is still limited by fragmented...

+ Show more

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Deutscher Forschungszenren (HZ)
Kiel, Germany

57 publications
Submission & review process

- Submission:
  - ONLY via Research Topic page (journal.frontiersin.org/researchtopic/7173)
  - Select an Article Type: e.g. Original research, Review, Perspective, ...
  - Select a Guest Associated Editors: J. Hermes Observing systems, Capacity Building & knowledge transfer, M. Gehlen ocean modeling data QC, J. Perlman Observing Systems, data models; P. Luigi Buttigieg SDGs, genomic, data models; J. Karstensen Observing systems, data QC
  - Submit after registering with LOOP

- Review:
  - Editorial Assignment: Evaluation & search for “Review Editors” (Reviewers)
  - Independent Review: Review Editors & GA Editor via webinterface
  - Interactive Review: Authors/Reviewers dialogue (several iterations)
  - Review finalized: “endorsement” or “rejection”
  - Final validation: technical check

Current Status (after 8 months):

- 40 authors accepted invitation
- currently 5 submissions:
  - 1 published
  - 4 in interactive review

Advancing marine biological observations and data requirements of the complementary Essential Ocean Variables (EOVs) and Essential Biodiversity Variables (EBVs) framework, an article by Frank Muller-Karger et. al., that appeared in Frontiers in Marine Science achieved 2000 total views since it was published recently
Global Best Practice System

Participating Organizations and Programs

Peer Review Journal

Repository

Advanced Technology

Support Training, etc.

The User
Community engagement throughout the process

- Submit BP & use BP on repository, be an advocate
- Be involved in Beta testing of repository
- Submit to Frontiers and act as a reviewer
- Engage and feedback to this working group
- Raise areas/opportunities of development, outreach and capacity development, link with IODE Ocean Teacher
- Submit to newsletter
What does the community get?

- Access to extensive, trusted, broadly adopted documented BPs with semantic, smart searching

- A sustained repository to host BP (DOIs, templates etc)

- Peer reviewed publications, acknowledgements, recognition, guidance, branding and confidence, consistency, automation, archiving, searchability, additional functions (eg extracting sections), additional users, receive feedback on BP

- Community service, keeping updated, acknowledgement of skills, feedback into process
Key achievements to date

- Began work in early 2017 with oceanbestpractices.net
- Paris workshop in Nov 2017
- DOI’s can be issued by IODE
- GOOS RA meeting and others
- Ocean Sciences Town Hall and various posters
- Community white paper for OceanObs
- Frontiers Journal
- SCOR WG submitted
- Newsletter: obpcommunity@oceanbestpractices.org
- Webinar (8th May)
Evolving and Sustaining Ocean Best Practices Workshop, IOC, Paris, France, Nov 2017

“A community 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 needs to be adopted and employed by multiple organizations.”

Time frame moving forwards

- Monthly newsletters produced

- New portal with enhanced search available end Oct 2018

- Presentations will be given at IMDIS (Barcelona Nov 18; NSF RCN (AGU, Dec 18 which will collect community inputs); EOOS (Brussels, Nov 18)

- BP workshop 3-5th December in Paris

- Work beginning on EOV BP and complete gap analysis of documents – ongoing
Planned additional activities

- Coordinate with new technologies as they develop and offer recommendations, links with other programs

- Identify selection criteria for a best practice document or a standard eg impact of BP; feasibility (technical and social) of implementing in developed and developing countries; clarity and understandability; level of community consensus; capacity development and training

- Investigate areas for inter-comparison across networks, are there specific procedures that can be acknowledged and widely used? Is this feasible?
Benefits of the OBP-S

- Living, Sustained, Comprehensive System for Ocean Observing Practices
- Academic recognition through peer review and DOIs
- Improved visibility from search engines
- Training resource
- Greater Interoperability across programs and institutions
<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
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<tbody>
<tr>
<td>Mark Bushnell</td>
<td>IOOS</td>
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<tr>
<td>Pier Luigi Buttigieg</td>
<td>AWI</td>
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<td>Juliet Hermes</td>
<td>SAEON/JCOMM</td>
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<tr>
<td>Frank Muller-Karter</td>
<td>IMaRS, Uni S. Florida</td>
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<td>Cristian Muñoz</td>
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