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TITLE: Evolving and Sustaining Ocean Best Practices and Standards for the Next Decade

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ABSTRACT:

The oceans play a key role in global issues such as climate change, food security and human health. Given their vast dimensions and internal complexity, efficient monitoring and predicting of the planet's ocean must be a collaborative effort of both regional and global scale. A first and foremost requirement for such collaborative ocean observing is the need to follow well-defined and reproducible methods across activities: from strategies for structuring observing systems, sensor deployment and usage, and the generation of data and information products, to ethical and governance aspects when executing ocean observing. To meet the urgent, planet-wide challenges we face, methods across all aspects of ocean observing must evolve into "Ocean Best Practices". While many groups have created best practices, they are scattered across the Web or buried in local repositories and many have yet to be digitized. To reduce this fragmentation, we introduce a new open access, permanent, digital repository of best practices documentation (oceanbestpractices.org) that is part of the Ocean Best Practices System (OBPS). The new OBPS provides an opportunity space for the centralized and coordinated improvement of ocean observing methods. The OBPS repository employs user-friendly software to significantly improve discovery and access to methods. The software includes advanced semantic technologies for search capabilities to enhance repository operations. In addition to the repository, the OBPS also includes a peer reviewed Journal Research Topic, a forum for community discussion and a training activity for use of best practices. Together, these components serve to realize a core objective of the OBPS, which is to enable the ocean community to create superior methods for every activity in ocean observing from research to operations to applications that are agreed upon and broadly adopted across communities. Using selected ocean observing examples, we show how the OBPS supports this objective. This paper lays out a future vision of ocean best practices and how OBPS will contribute to improving ocean observing in the decade to come.

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