



THEME SECTION

Ocean biodiversity informatics (OBI)

Idea and coordination:

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Introduction

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The computerised information age is providing new opportunities and challenges for marine science, ranging from electronic publication (Kinne 1999) to interoperable databases that provide access to primary data over the Internet. This Theme Section (TS) describes some of the activities in the field of ocean biodiversity

informatics (OBI), whereby information technologies are used to support the management of data and information on ocean biodiversity. The first contribution is a review of the subject (Costello & Vanden Berghe), the next 5 contributions provide examples of internationally important, cutting-edge marine information sys-

tems that are available online (Fabri et al., Arvantidis et al., Lleonart et al., Halpin et al., Stevens et al.), and the last 3 contributions are analyses that demonstrate the benefits of easy access to such large databases (Costello et al., Guinotte et al., Kaschner et al.).

This TS was stimulated by a series of meetings developed by the growing international cross-disciplinary community of marine biologists and data managers. A workshop sponsored by the Intergovernmental Oceanographic Commission (IOC) of UNESCO brought physical oceanographers, biologists and data managers together in 1996; it was followed by a symposium on ocean data management in 2002 (Vanden Berghe et al. 2004; available at: www.vliz.be/En/activ/events/cod/cod.htm). An international conference on Ocean Biodiversity Informatics (29 November to 1 December 2004) attracted >170 delegates from 37 countries, and 70 presentations (available at: www.vliz.be/obi). Participants came from the Global Biodiversity Information Facility (available at: www.gbif.org), government agencies, universities, NGOs, museums, and commercial companies, demonstrating the breadth of organisations and expertise involved in OBI. Most of the contributions to this TS are based upon presentations at this conference.

One trend in OBI is that central databases are being replaced by online data systems that make both primary and secondary data freely available. For example, the leading provider of primary data on marine species distributions, the Ocean Biogeographic Information System, has grown rapidly in the past 5 yr, demonstrating how marine species data can be shared from local to global scales, and mapped with ocean environment information. This revolution in data availability provides new opportunities for marine science. There are no longer any technical or

data availability obstacles to the inclusion of marine biological data in information networks that focus on physical ocean and climate data (e.g. national and world ocean data centres, Global Ocean Observing System, Global Earth Observation System of Systems). In addition to the publication of synthesized data in standard journals, scientists can now publish their primary data, so that other researchers may build on these to provide added value. This data exchanges benefits from common vocabularies and protocols that will better define scientific concepts and facilitate better understanding of marine ecosystems at all spatial scales.

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