


INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION
(of UNESCO)
Twenty-second Session of the IOC Committee on International Oceanographic
Data and Information Exchange (IODE-XXII)
Ensenada, Mexico, 11-15 March 2013

IODE Steering Group for OBIS (and IODE Group of
Experts for OBIS)

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ISSUES TO BE DISCUSSED

The Committee will be invited to:

Consider the progress report of OBIS (as part of the report of the 2nd session of the IODE Steering Group for OBIS - http://www.iode.org/index.php?option=com_oe&task=viewEventDocs&eventID=1134) and review the implementation status of OBIS in IODE as well as the proposed OBIS work plan and budget.

Consider the proposal that OBIS nodes can become part of the IODE network as NODCs and SODCs, and to publish an IOC Manual & Guides for OBIS nodes.

DECISIONS/ACTIONS REQUIRED FROM THE COMMITTEE

Recommendation IODE-XX.??

The IOC Committee on International Oceanographic Data and Information Exchange,

Acknowledging the importance of open-access, global databases on the diversity, distribution and abundance of marine species, to assist decision makers to sustainably manage our Ocean's living resources.

Noting that the 10th Conference of the Parties to the Convention on Biological Diversity (Decision COP10/29 para 10 and 35; Nagoya October 2010) requested Member States to further enhance globally networked scientific efforts, such as the Ocean Biogeographic Information System (OBIS), to continue to update a comprehensive and accessible global database of all forms of life in the sea, and further assess and map the distribution and abundance of species in the sea, and called upon IOC/OBIS to facilitate availability and interoperability of the best available marine and coastal biodiversity data sets and information across global, regional and national scales.

Noting with Appreciation that OBIS is extensively used by the research community and is playing a crucial role in providing scientific guidance, data and information for the identification of Ecologically or Biologically Significant marine Areas, through a series of

regional workshops in 2011, 2012 and 2013, as part of the Strategic Plan for Biodiversity 2011-2020, and in particular Aichi Biodiversity Target 11 to conserve and sustainably manage at least 10 per cent of coastal and marine areas by 2020, as agreed upon by the Conference of the Parties to the Convention on Biological Diversity in Nagoya in 2010.

Noting with Appreciation the successful integration of the OBIS project in IODE and the creation of two extra-budgetary Programme Specialist positions (Project Manager and Data Manager) for OBIS.

Recalling the request to the IOC Executive Secretary to prepare documentation to the Director-General and the UNESCO Executive Board requesting a regular programme post for the OBIS Programme at the earliest opportunity.

Urges Member States to provide financial and in-kind support for OBIS to enable the IOC to fulfill the commitment it made to the continuation and further development of OBIS, as well as to fulfill its role to ensure the maintenance and further growth of marine biodiversity data to serve policy and management needs as IOC and in particular OBIS is called upon by the Conference of the Parties to the Convention on Biological Diversity.

Approves the proposal that OBIS nodes can participate as NODCs and SODCs in the IODE network, and to publish the procedures, tasks, standards and best practices associated to OBIS nodes in an IOC Manual & Guides for OBIS nodes.

Encourages Member states to share their biodiversity data and to participate in OBIS through the establishment of new and/or strengthening existing OBIS nodes.

APPENDIX: DRAFT TEXT FOR INCLUSION IN THE SUMMARY REPORT OF IODE-XXII

- 1 This Agenda Item will be introduced by Dr Mark Fornwall Chair IODE Steering Group for OBIS, referring to **Document IOC/IODE-XXII/14 (IODE Steering Group for OBIS)**. He will explain that the previous inter-sessional period has been a transition phase for OBIS, in which IODE has successfully facilitated the transfer of OBIS from being a private foundation-led activity under the Census of Marine Life, to become part of an intergovernmental organization, as a fully operational project under IODE.
- 2 OBIS is governed by a Steering Group and advised by a Group of Experts. The OBIS project office (hosted by the IOC Project Office for IODE in Oostende, Belgium) is responsible for the daily operations and functions as the international OBIS node (iOBIS) within a network of 22 regional/thematic OBIS nodes. OBIS nodes operate as data assembly and quality control centres for biogeographical data from their region and/or areas of expertise. All the data is integrated and served through a global online data portal. In 2012, the data portal had 50,000 unique visitors (35% are returning visitors). A survey on the activities of OBIS nodes demonstrated that the role of OBIS is not limited to raw data encoding but that they are engaged in a wide spectrum of activities, from developing tools and products to offering services (including capacity building) for data-science and science-policy activities on a local, regional to global scale.
- 3 During 2011-2012, 210 new datasets were collected and integrated, representing 5 million geo-referenced species distributions, and adding 5,000 marine species that were previously missing from OBIS. In total, OBIS now provides 35 millions records of 120,000 marine species from 1,130 datasets.
- 4 The marine biodiversity research community extensively used OBIS data. Google Scholar reports over 800 publications citing OBIS since 2000, of which 160 (20%) are published in the last two years.

- 5 OBIS plays a crucial role in contributing to external intergovernmental and international organizations dealing with global fisheries, environmental and biodiversity issues (e.g., the Group on Earth Observations – Biodiversity Observations Network, the Global Biodiversity Information Facility, and the Convention on Biological Diversity), and it is expected that this role will be continued and expanded in the future, e.g., to support the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES).
- 6 Mr Appeltans (IOC) and Prof Halpin of OBIS-SEAMAP (Duke University) attended the 11th Conference of the Parties (CoP) of the Convention on Biological Diversity (CBD) in Hyderabad (October 2012). OBIS is explicitly mentioned in Decisions X/29.10,35,39 (<https://www.cbd.int/decision/cop/?id=12295>) and draft XI/17.16 (<http://www.cbd.int/cop/cop-11/doc/2012-10-24-advanced-unedited-cop-11-decisions-en.pdf>). During the 10th Conference the 193 Parties to the CBD agreed to classify a diverse list of marine areas as ecologically or biologically significant. Among the areas mentioned, some are renowned for containing ‘hidden treasures’, such as the Sargasso Sea, the Tonga archipelago and key corals sites off the coast of Brazil. This work is part of the Strategic Plan for Biodiversity 2011-2020, and contributes in particular to Aichi Biodiversity Target 11 to conserve and sustainably manage at least 10 per cent of coastal and marine areas by 2020. OBIS is providing scientific and technical advice to define Ecologically or Biologically Significant marine Areas (EBSAs), through a series of regional workshops in 2011, 2012 and 2013.
- 7 The OBIS work plan was defined during the 2nd Session of the IODE Steering Group for OBIS (SG-OBIS) (Oostende, 19-21 November 2012). Several informal (task) teams were formed to execute a number of activities. The staff of the OBIS Project Office takes part in all task teams, and the OBIS project manager (Mr Ward Appeltans) oversees the execution of the work plan and reports to SG-OBIS and all task teams on progress of the activities.
- 8 A major for 2013 and in the future will be on improving data and metadata quality. A new data workflow will be established in which OBIS nodes, according to their commitment as an OBIS tier II or III node will perform a number of data validation tasks to improve standardization and quality before data are harvested and integrated into the central OBIS database (the tasks of the different OBIS nodes are listed in Table 2 of SG-OBIS-2 report: http://www.iode.org/index.php?option=com_oe&task=viewEventDocs&eventID=1134).
- 9 Since 2011, the OBIS databases are running on the servers of the Flanders Marine Institute in Oostende, Belgium. In 2013, these servers will become connected to the D4Science GRID network, in order to provide access to OBIS data in applications of the D4Science data e-infrastructure (<https://portal.i-marine.d4science.org>) developed by the i-Marine EU project. In addition, a geo-load balancing mirror will become operational at INCOIS in Hyderabad, India.
- 10 A Memorandum of Cooperation will be signed with GBIF recognizing each other as sister networks and OBIS’ focus on marine biodiversity. The GBIF Integrated Publishing Toolkit (IPT) will be introduced for data transfer between OBIS nodes and GBIF and data from OBIS will flow again to GBIF on a regular basis.
- 11 A process will be started to improve the OBIS (meta)data schema, as part of a marine extension of Darwin Core.
- 12 Within IODE’s Capacity Building activities, OBIS will become an important player to provide training in biodiversity data management. Two training workshops are already planned in 2013 (India, Barbabos). Also OBIS node managers will need to be trained to become familiar with the OBIS practices, standards, data validation tools, and data transfer protocols.
- 13 By late 2013, the OBIS task teams will produce an IOC Manual and Guides for OBIS nodes that will include the terms of reference of OBIS nodes, procedure to establish OBIS nodes, standards and best practices (OBIS handbook) and a section on quality assurance,

criteria and evaluation of OBIS nodes.

- 14 An OBIS business plan will be finalized early 2013 and will address OBIS' vision and mission, objectives and key priorities, budget needs in relation to the work plan and potential funding opportunities.
- 15 Communication and public awareness is another priority for OBIS. The OBIS website and data portal are the main means to distribute information about the project, but OBIS is now also active on social media (Linkedin, FaceBook, Twitter, Google+, Google Scholar, Mendeley, SlideShare). Several OBIS node managers also contribute to the translation of the OBIS website into the following languages: English, Spanish, Portuguese, French and Japanese (others are welcome).
- 16 OBIS will need to maintain the momentum of international data sharing created by the projects and expeditions as part of the Census of Marine Life. OBIS (and OBIS nodes) will need to be kept engaged in new projects and expeditions, and further expand its network of data providers and OBIS nodes in order to keep its world leading position and ensure the best (global) coverage of marine biodiversity data in time and space.
- 17 OBIS will also need to continue (and if possible expand) providing its services to the global research community and international and intergovernmental organizations (such as UNESCO, IPBES, UNEP-CBD, UN Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socio-economic Aspects/World Ocean Assessment, IUCN's Global Ocean Biodiversity Initiative, Encyclopedia of Life, GBIF and GEO BON).
- 18 In 2012, salary costs of the OBIS project office were approximately US\$175,000, which covered the salaries of the project manager in Oostende (8 months), and a data manager at Rutgers (6 months, until 31 August 2012). These costs were covered by the EU project i-Marine and ODINAfrica. US\$15,000 was provided by UNESCO's Regular Programme, which covered the costs of the SG-OBIS meeting, and around US\$10,000 was spent on travel (covered by iMarine and IOC/IODE budgets). The operational expenses (for hosting the OBIS project office) are close to US\$10,000 annually and are currently provided by the IOC Project Office for IODE.
- 19 In 2013, the salary costs will be higher (around USD 225,000) because of the addition of a full-time data manger. Funding for this new position and the Project Manager will come from two EU FP7 projects (iMarine and GEOWOW), and two IODE projects (ODINAfrica and Caribbean Marine Atlas). The iMarine EU project runs until 30 April 2014. It is hoped that the UNESCO Regular Programme will again contribute US\$30,000 to be allocated for the SG-OBIS meetings in 2013 and 2014.
- 20 To continue the OBIS operations beyond 2013, new financial resources are needed. There is currently US\$61,000 left in the IOC special account for OBIS. A minimum of US\$300,000 is needed annually to operate the OBIS project office with a minimum occupation of two professional staff (a project manager and a data manager). Based upon the current budgetary situation of UNESCO and its IOC, funding will need to come from additional extra-budgetary contributions from IOC Member States, and possibly also from project and other international funding sources. It is important to note that the full cost of OBIS implementation includes the voluntary contributions by OBIS nodes.
- 21 The UNESCO Emergency Fund will provide US\$36,000 to OBIS for contributing to the identification of EBSAs in the North Pacific and West Africa region in 2013, through the preparation of analytical material and diversity indices and by providing scientific guidance on applying the criteria for EBSAs during the regional EBSA meetings. In addition, the contribution of IOC/OBIS to the CBD will be presented in a peer-reviewed paper and at some strategic meetings.

ANNEX I

Status on the three IODE XX recommendations for OBIS

Recommendation IODE XXI.2 (Establishment of the IODE Steering Group for OBIS, SG-OBIS). The SG-OBIS met twice in Oostende (8-9 December 2011 and 19-21 November 2012); two co-chairs are elected for a 4-6 year term; 6 informal task teams (technical, data, taxonomy, governance, outreach and training) are formed to further develop OBIS and support the execution of the 2013 Work Plan. The next SG-OBIS meeting is scheduled for 18-20 November 2013, which will revise the OBIS work plan for the next inter-sessional period.

Recommendation IODE XXI.3 (Establishment of the IODE Group of Experts for OBIS, GE-OBIS). In response to IOC Circular Letter 2398 (August 2011) the group is composed with four long-term members, but has not met due to lack of financial resources. The GE-OBIS has an advisory role on technical developments. However, none of the institutions that provide in-kind technical or infrastructure support to the OBIS Project Office are members of the GE-OBIS. SG-OBIS requests the Committee to provide resources for a GE-OBIS meeting in 2013 and wishes to invite 4 additional short-term members (from the OBIS technical task team) to join the meeting.

Recommendation IODE XXI.5 (Establishment of a UNESCO/IOC project office for IODE/OBIS in Rutgers, USA). Setting up a new UNESCO/IOC Project Office for OBIS at Rutgers, USA is no longer considered opportune and the OBIS project office moved to the premises of the IOC Project Office for IODE in Oostende, Belgium.

Status on tasks assigned to the IOC Secretary as adopted by IOC Assembly resolution IOC XXV-4 (Ocean Biogeographic Information System):

Resolution IOC XXV-4/13.ii (Set up a multi-source fund within the IOC Trust Fund for the support of OBIS and to keep the IOC Member States fully informed of the commitments made and the adequacy of the resources available). A multi-source fund within the IOC Special Account for the support of OBIS was established. In response to IOC Circular Letter 2333 (February 2010), the following contributions were made to this account: Australia (USD 88,986) to cover three years (June 2010-June 2013), Canada (CAD 20,000) for two years (2010-2011), and Brazil (USD 10,000) for 2010. The United States of America committed to provide an initial USD 309,943 to cover the salary of the OBIS manager, through Rutgers University, but did not continue this contribution in 2012. No other resources from Member States were pledged afterwards. A second IOC Circular Letter 2441 (May 2012), requesting new contributions to support OBIS, so far only resulted in Canada preparing documentation to donate CAD 20,000 for the next biennium. OBIS, however, also receives important in-kind contributions from the OBIS nodes, and technical support and infrastructural contributions are provided by Duke University, the Flanders Marine Institute, Simon Bolivar University and the Indian National Center for Ocean Information Services.

Resolution IOC XXV-4/13.iv (Take the necessary actions for the creation of an extra-budgetary OBIS Programme Officer position, and the preparation of documentation to the Director-General and the UNESCO Executive Board requesting a regular programme post for the OBIS Programme at the earliest opportunity). IOC has created an extra-budgetary OBIS Programme Specialist position (P-3) and Mr Appeltans was recruited in May 2012. Mr Appeltans is the OBIS project manager and is responsible for the coordinating activities. In addition, an extra-budgetary OBIS data manager position (P-

1) was created and the person is expected to join the secretariat in early 2013. Funding is provided by two EU projects (iMarine and GEOWOW) and two IODE projects (ODINAfrica and CMA). These extra-budgetary projects will run until end of 2013 and April 2014 (iMarine). The request to establish a regular programme post for OBIS has not been made yet.

ANNEX II

Outcome of 11th Conference of the Parties (CoP) of the Convention on Biological Diversity (CBD) in Hyderabad (October 2012)

COP X/Decision 29

10. *Emphasizing* that the world's oceans host most of the known phyla on Earth and contain between 500,000 and 10 million species, and that new oceanic species are continuously being discovered, particularly in the deep sea, *encourages* Parties, other Governments and organizations **to further enhance globally networked scientific efforts, such as the Census of Marine Life (CoML) and the Ocean Biogeographic Information System (OBIS)**, to continue to update a comprehensive and accessible global database of all forms of life in the sea, and further assess and map the distribution and abundance of species in the sea, and *encourages* Parties and other Governments to foster further research activities, in accordance with international law, including the United Nations Convention on the Law of the Sea, to explore marine communities where the current level of knowledge is scarce or inexistent;

35. *Requests* the Executive Secretary to work with Parties, other Governments, the Food and Agriculture Organization (FAO) of the United Nations, the United Nations Educational, Scientific and Cultural Organization (UNESCO) -Intergovernmental Oceanographic Commission (IOC), in particular the **Ocean Biogeographic Information System (OBIS)**, the Central Data Repository run by International Seabed Authority (ISA), and other relevant international scientific partnerships producing credible, quality-controlled scientific information, such as the World Conservation Monitoring Centre of the United Nations Environment Programme (UNEP-WCMC), and the Global Ocean Biodiversity Initiative (GOBI), **to facilitate availability and inter-operability of the best available marine and coastal biodiversity data sets and information across global, regional and national scales;**

39. *Requests* the Executive Secretary, in collaboration with Parties and other Governments, the Food and Agriculture Organization of the United Nations (FAO), United Nations Division for Ocean Affairs and the Law of the Sea, the United Nations Educational, Scientific and Cultural Organization (UNESCO) **-Intergovernmental Oceanographic Commission (IOC), in particular the Ocean Biogeographic Information System**, and other competent organizations, the World Conservation Monitoring Centre of the United Nations Environment Programme (UNEP-WCMC) and the Global Ocean Biodiversity Initiative (GOBI), **to establish a repository for scientific and technical information and experience related to the application of the scientific criteria on the identification of EBSAs** in annex I of decision IX/20, as well as other relevant compatible and complementary nationally and intergovernmentally agreed scientific criteria that shares information and harmonizes with similar initiatives, and **to develop an information-sharing mechanism** with similar initiatives, such as FAO's work on vulnerable marine ecosystems (VMEs);

COP XI/decision 17. Marine and coastal biodiversity: ecologically or biologically significant marine areas

16. *Requests* the Executive Secretary to further develop, subject to availability of financial resources, the prototype repository and the information-sharing mechanism into a fully functional repository and information-sharing mechanism so that they can fully serve the purpose called for in paragraph 39 of decision X/29, in collaboration with Parties, other Governments, the Food and Agriculture Organization of the United Nations (FAO), the United Nations Division for Ocean Affairs and the Law of the Sea (UNDOALOS), the **Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization (UNESCO-IOC), in particular the Ocean Biogeographic Information System (OBIS)**, the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC), Global Ocean Biodiversity Initiative, and other competent organizations, *noting* the need to have a clear distinction between the repository containing the information included on the basis of decisions by the Conference of the Parties as called for in paragraph 39 of decision X/29 and other information entered in the information-sharing mechanism, and report on progress to a meeting of the Subsidiary Body prior to twelfth meeting of the Conference of the Parties to the Convention.

ANNEX III

List of tasks for OBIS tier I, II and III nodes as identified and adopted at SG-OBIS-II

All OBIS nodes are tier III. Some nodes will take up additional responsibilities, such as performing data validation, which in the past was done by iOBIS (tier I). These extra activities are assigned to tier II. In the absence of an active tier III or no tier II is found, tier I can perform tasks under tier II and III (marked by *), or a tier III needs to fill in a tier II (**). Tier I = iOBIS; Tier II = OBIS nodes with extra responsibilities; Tier III = OBIS nodes. M = mandatory; R = recommended; O = optional.

Tasks	Tier I	Tier II	Tier III
Receiving or harvesting marine biodiversity data (and metadata) from national, regional and international programs, and the scientific community at large	*	M	M
Making data (and metadata) available to tier II nodes		M	M
Harvesting data (and metadata) from tier III nodes	*	M	
Perform data validation (using standards, tools and best practices), as described in the OBIS manual	*	M	
Reporting the results of quality control directly to tier III	*	M	
Reporting the results of quality control directly to data collectors/originator as part of the quality assurance activity	*	M	M
Making data (and metadata) available to tier I node using agreed upon standards and formats which are described in the OBIS Manual		M	**
Automated data (and metadata) harvesting from tier II nodes	M		
Making data (and metadata) available on the iOBIS portal	M		
Ensuring the long-term preservation of the data, metadata and associated information required for correct interpretation of the data (including version-control), as described in the OBIS manual	M	R	R
The OBIS node shall nominate a node manager (and deputy) who will be a member of the IODE Steering Group		M	M

Tasks	Tier I	Tier II	Tier III
for OBIS (SG-OBIS), and participate in various activities associated with OBIS and IODE, such as the SG-OBIS meetings and electronic discussions			
Contribute to the development of standards and best practices	M	R	R
Contribute to the development of open-source tools	M	R	R
Provide indicators on up-time, responsiveness and data processed by nodes and present a report to SG-OBIS	M		
Report on activities to SG-OBIS	M	M	M
Engage in stakeholder groups	M	R	R
Capacity Building (i.e., providing expertise, training and support in data management, technologies, standards and best practices).	M	M (to tier III)	M
Coordinate data and metadata quality assurance (OBIS node best practice manual)	M		
Providing marine data to external networks (e.g., GBIF)	M	O	O
Maintenance of the OBIS website and global data portal and implement (mapping, download) tools	M		
Ensure an operational system (delivering data access services to OBIS nodes and the community)	M		
Providing statistics on data usage (report on data provider level)	M		
Providing statistics on data content and analysis on gaps	M	O	O
Control data access, terms of use and sharing policies	M	M	M
Coordinate internal communication among nodes (mailing list, news, website), put data providers in touch with the relevant OBIS nodes	M		
Customer support (data queries, analyses, feedback).	M	M	M
Outreach (as defined in the Communication and Outreach Strategy)	M	M	M
Build customized portals (e.g., multiple languages)	*	M	M
Comply with the IOC/OBIS data policy for using and sharing OBIS data.	M	M	M

[end]