Input from OBIS

To Projects:

Data Management Discussion

1. Please present the status of your project in terms of management of data and/or metadata. Three projects--GEOTRACES, IMBER, and SOLAS--have been asked to make oral presentations about the status of their data management activities, but it would also be helpful to have written statements from other projects.

OBIS continues to expand in data content (Figure 1). Over 10 million locations for 78,000 species can now be integrated from 145 interoperable datasets online. New mapping tools, data search and download services are being developed for 2007. An article describing OBIS from early 2006 is provided.

Data is either 'crawled' from servers that establish a data exchange protocol, or datasets are sent to one of these servers to be published through OBIS. OBIS follows data, metadata, and data exchange standards set by TDWG, Darwin Core, GBIF, ISO, FGDC, and others where available. Mandatory OBIS data includes species scientific name, source institution and collection (or dataset), latitude, longitude, and many recommended and optional fields. Details are provided in a separate spreadsheet.

OBIS developed a 'discovery metadata' schema that was compatible with FGDC, ISO, and GCMD. The absence of ecological and taxonomic fields in existing standards meant OBIS had to add additional fields for these items; these may provide a basis for future standards. An example of the metadata is provided below.

There is a need to expand the OBIS data schema to enable appropriate analysis of abundance and fisheries data, and serve molecular data. OBIS scientific working groups have been established to look into these topics. Ideally, OBIS would prefer not to be involved in developing standards and would be happy to adopt those developed by domain experts.

Gazetteers to convert place names to polygons or points and back would be useful. VLIZ and IODE have developed open-source polygon maps for world sea areas (based on IHO standard) and Exclusive Economic Zones. Both are in use by OBIS, as well as maps of FAO, ICES, Longhurst pelagic, and LME areas.

2. Has your project done anything to encourage visualization of project data?

Yes, OBIS has three mapping options:

- *A CSIRO mapper called C-Squares indexes data geographically to speed up data transfer, and plots it on a variety of flat and views, including polar views.*
- *The KGS Mapper plots data on a choice of 52 ocean environment layers and provides statistics on the environment where the data are recorded. The user can then map to show other areas with similar environmental conditions to within 1 or 2 standard deviations, and if they wish edit the environmental ranges and species data.*
- *A new ACON mapper allows integration of data from several taxa and places, and has been adapted to show movies of animal movements.*

Online mapping (or graphing) tools to show time-series and depth, as well as spatial area, are now being explored.

3. Is your project keeping track of project cruises and collecting any information about the cruises?

OBIS publishes datasets as offered, subject to editorial oversight (i.e. from approved sources) and quality control checks.

4. Has your project discussed data archiving with a World Data Center yet and/or involved in WDC staff in your data management discussions?

Fred Grassle (Founder of OBIS, Director of OBIS Secretariat and Chair of the Census of Marine Life of which OBIS is part), has had such discussions in USA, and agreement in principle. However, this is not so critical for OBIS as all the data is published online, routinely backed up, and mirror sites will replicate data content and tools.

GOOS Discussion

1. Does your project have ongoing interactions with GOOS?

No, but is keen to develop a plan for practical collaboration. For example, in data or information exchange, and/or development of joint products for users. Collaboration with IODE and IOC is underway.

2. Have you had any GOOS scientists or staff attend a project SSC meeting, or have any project SSC members or IPO staff participated in a GOOS meeting?

Yes, several occasions.

3. Do you have a link to any element of GOOS on your project Web site?

No.

4. Has your SSC discussed what is, or will be, available from GOOS and other observing systems?

Yes.

5. Has your SSC identified any specific GOOS observations to which your scientists would like access?

No.

6. What research observation systems would your project like to see become operational?

Time-Series Stations

1. Will implementation of your project require observations from time-series stations? If so, in what locations?

No, but will benefit from them is they contain data on marine species. More locations the better.

2. How will such stations be supported?

3. Has your project identified time-series sites (either existing or new) that are a priority for achieving project goals?

OBIS publishes several time series datasets, including BATS (Bermuda Atlantic Time-series Study) and HMAP (History of Marine Animal Populations).

Southern Ocean Research and Observations

1. What activities has your project undertaken or planned for the Southern Ocean? Have you coordinated your Southern Ocean research with other projects? Do you have any special plans for the 3rd International Polar Year in 2007-2009 or later?

OBIS publishes considerable data from the Southern and Arctic Oceans, and recently recognised SCAR-MARBIN as its Antarctic Regional OBIS Node.

2. What is the status of planning and funding for your project's Southern Ocean cruises, observations, and experiments?

Considerable data is already available online, and more anticipated, both new and historic data.

Education and Capacity Building

1. What activities, plans, and ideas does your project have in relation to education and capacity building?

Developing 'how to use OBIS' modules for researchers, students, and public on its website.

2. How are you funding your education and capacity-building activities?

Education modules are largely funded in-kind, by time volunteered by university academics.

Press releases are supported by the Census of Marine Life and Regional OBIS Nodes institutions where appropriate.

Satellite Availability and Needs

1. Is your project using satellite data or does it plan to do so?

Not directly, but several ocean data layers used by OBIS were derived from satellite data.

2. Which satellite observations are most crucial for your project to meet its goals?

Sea temperature and colour estimates of phytoplankton biomass and productivity (i.e. change in biomass over time).

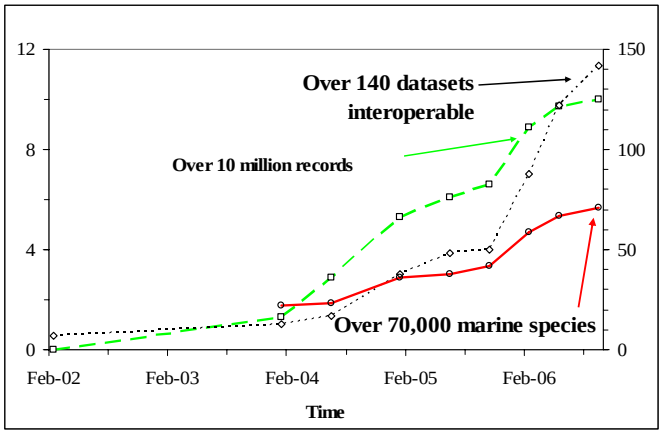

Figure 1. Progress in publication of georeferenced records of marine species through interoperable datasets in the Ocean Biogeographic Information System

Descriptions of OBIS data sources for portal

Suggest text in blue appears on OBIS web site. Text in red perhaps can be automatically updated (or not). Text in black on an expanded page. Each field of text ends with a full-stop so readers know the text is complete. Database name should be concise, indicate content, minimize acronyms, and avoid unnecessary words (e.g. database).

Order	Metadata term	Example
1.	Database name	BioMar – Ireland: benthic marine species survey. (Version 1, Released on CD 1999)
2.	Citation	Picton, B.E., Emblow, C.S., Morrow, C.C., Sides, E.M., Tierney, P., McGrath, D., McGeough, G., McCrea, M., Dinneen, P., Falvey, J., Dempsey, S., Dowse, J. and Costello, M. J. 1999. Marine sites, habitats and species data collected during the BioMar survey of Ireland. In: Picton, B.E. and Costello M. J. (eds), The BioMar biotope viewer: a guide to marine habitats, fauna and flora in Britain and Ireland, Environmental Sciences Unit, Trinity College, Dublin. Retrieved [date] from www.iobis.org.
3.	Taxonomic coverage	All species living on, in and near the seabed (benthos), excluding microbia.
4.	Geographic coverage	Republic of Ireland, 200 littoral and 700 sublittoral sites surveyed (each including 1-6 sampling stations). Latitude 51°20' to 55°20', Longitude 5°40' to 10°20'. Resolution of sampling locations ± 10m.
5.	Temporal coverage	1993-1996 for Republic of Ireland.
6.	Habitat coverage	Marine, seashores (littoral), sublittoral seabed.
7.	Total distribution records	93,000.
8.	Total number of taxa	1,500 species.
9.	Collection method	Direct observation on seashores and by scuba divers.
10.	Data source	Mainly observations. Reference collection of animals available in the National Museum of Ireland and seaweeds in the Herbarium, Trinity College, University of Dublin.
11.	Abstract	The BioMar project was and remains the largest marine ecological seabed survey of the Republic of Ireland. Standard field survey and data management methods developed by the UK Marine Nature Conservation Review (now part of Joint Nature Conservation Committee) were used. This database was published as a compact disc containing data collected during a national survey that provided the basis for (a) a classification of marine biotopes applicable to the North East Atlantic, and (b) the selection of marine Special Areas of Conservation (Marine Protected Areas).
12.	Scientific Contact	Dr Mark J. Costello m.costello@auckland.ac.nz .
13.	Technical contact	Dr Edward Vanden Berghe wardvdb@vliz.be .
14.	Website	Original project description: www.ecoserve.ie/biomar .
15.	Date this form completed	17th October 2005 .
16.	Publications from this data	McGrath, D., Costello, M.J. and Emblow, C. 2000. The hermit crab, *Diogenes pugilator* (Roux, 1829) in Irish waters. *Biology and Environment: Proceedings of the Royal Irish Academy*, 100B (2), 115-118. Costello M. J., McGrath D. and Emblow C. 1999. A review of the distribution of marine Talitridae (Amphipoda) in Ireland, including the results of a new survey of sandy beaches. In: Schram F. R. and von Vaupel Klein J.C. (ed.), *Crustaceans and the biodiversity crisis: proceedings of the fourth international crustacean congress, Amsterdam, the Netherlands, July 20-24, 1998.* Brill, Leiden, 473-487. Connor, D.W., Brazier, D.P., Dalkin, M.J., Hill, T.O., Holt, R.H.F., Northen, K.O. and Sanderson, W.G. 1999. Marine Nature Conservation Review: marine biotope classification for Britain and Ireland, Version 97.06. In: Picton, B.E. and Costello M. J. (eds), The BioMar biotope viewer: a guide to marine habitats, fauna and flora in Britain and Ireland, Environmental Sciences Unit, Trinity College, Dublin.