

Asia-Pacific Biodiversity Observation Network 2011

Working Group for Marine Ecosystem

integrative observations and assessments of marine
biodiversity loss in a changing ocean

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AP BON Working Group: Marine Ecosystem

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Agenda

- Legacy data set in OBIS/ CoML
- Collaboration with S-9-5 project in Japan
- Data accumulation and sharing
 - universal data format: Darwin Core
 - global portal site: OBIS, GBIF
 - regional and local site: BISMAL and others associated with global database network.
- Genetic diversity: metagenomics and bioinformatics
- Outputs until 2015
 - linkage with global efforts and contribution to issues

Background of the marine biodiversity project

- The decadal achievement of Census of Marine Life (CoML) promoted successfully at the data collection on biodiversity from all over the world sea and accumulated the data in the Ocean Biological Information System (OBIS).
- While global synthetic analyses used data set in OBIS have revealed an extant of many ecologically or biologically significant areas such as western Pacific Ocean region, inventories of regional biodiversity based on long-term observations remain incomplete.
- Biodiversity decline and habitats loss in marine environments are already crucial issues and we have to assess the present state and suggest the perspective on changing ocean.
- Causing factors of biodiversity loss
 - disruption of coastal habitats, coral breaching,
 - ocean acidification, loss of primary production
 - development of deep-sea resources
 - etc.

Research Strategy of the project S-9-5 in Japan

- The project consists of six research teams to collect data on marine biodiversity from regional or local habitats such as seagrass meadows, kelp forests, coral reefs, pelagic water and deep sea in the Western Pacific area.
- The data collection is conducted by specimen-based approach, habitat-targeted approach and remote sensing approach. Metagenomic approach for microbial communities is prepared.
- Data mining approach is indispensable to know historical events of biodiversity and improves inventories of regional biodiversity based on long-term observations. JSPS projects and legacy network of NaGISA will be a robust supporter.
- The data sets described by Darwin Core format are accumulated in Biological Information System for Marine Life (BISMaL), which is a regional node of OBIS network.
- Statistical analysis and modeling for the changing patterns of marine biodiversity are performed to identify what are risks for biodiversity decline

Structure of Project S-9-5: Marine Biodiversity Observations and Assessment

costal area

Sub-theme 1
coastal
ecosystem

Sub-theme 2
kelp forests

Sub-theme 3
seagrass
meadows

Sub-theme 4
coral reefs

pelagic area

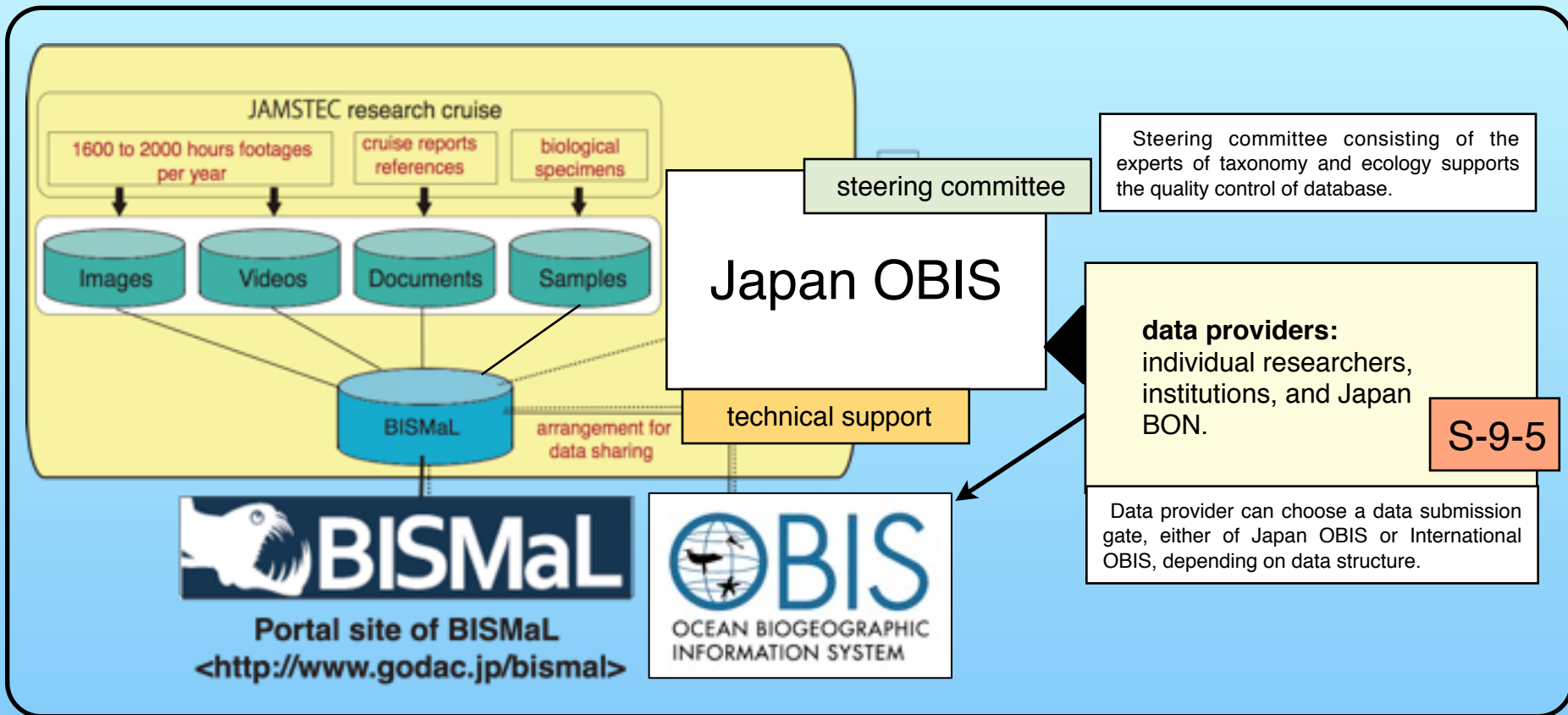
Sub-theme 5
plankton community

Sub-theme 6
deep-sea benthic
community

data integration, analysis and habitat mapping

assessment of biodiversity in changing marine ecosystem

Architecture of Japan Regional OBIS node in BISMAL



Function of Japan OBIS will increase a power of the data collection from the local data providers. Biodiversity research community, Japan BON, is making a implementation plan of the biodiversity monitoring program using the regional data platform, such like a Japan OBIS.

Outcomes

- Establishing the marine biodiversity observation network in the western Pacific region to continue the monitoring activity.
- Improvement of marine biodiversity decline
 - ecosystem based management methods for sustainable use of marine products
 - biodiversity conservation methods for mining activities
 - criteria of Marine Protected Area
- Technical improvement of biodiversity observation
- Contribution to advance the twenty 'Aichi targets' defined by the Convention on Biological Diversity (CBD) for the period 2011–2020.

Results of AP BON WG for Marine Ecosystem

- Network among WG members should be established for communication.
- Collaboration with S-9-5 project
 - Database system (BISMaL/ OBIS) provide a data sharing platform and a mapping tool available on the portal site.
 - Supporting each other on data sharing and research activities
- Data management and sharing is an important goal.
 - universal data format (e.g. Darwin Core) should be employed to share the data sets from local to global database systems (BISMaL, OBIS, GBIF).
- The following issues are raised for future AP BON publication
 - Editorial members from WG will work towards a Marine chapter in AP BON Book No.3. The main title proposed is “ Status and gaps in marine ecosystems and biodiversity research in Asia-Pacific ”.
 - Chief editor for the marine section: Prof M. Tokeshi of Kyushu University.
 - Foci: mechanisms to fill the gaps between what is known and unknown, Area Beyond National Jurisdiction and trans-boundary areas, remote reef systems, seamounts and deep sea systems, gaps in geographic area coverage, international sea lanes, inter-habitat connectivity from small to large scales, and interdisciplinary data integration, communication with decision makers, etc.
 - The schedule for manuscript preparation has been fixed.
 - WG will have a meeting in 2012 International Symposium, Amakusa.
- WG will contact the CBD secretariat regarding EBSA process.

2012 Schedule for AP-BON Marine WG

Year	Month	Event	Networking	AP BON Book 3	Map Generation
2011	12	MISMAL WS @ Nago, Japan	Launch AP-BON Marine ML	Outline preparation	WS results to ML
2012	1	S9 meeting		Title and Outline submission	
	2				
	3	ESABII meeting			
	4	GEOSS AP Symposium		First draft submission with tentative maps	Discussion about technical issues: data sharing, atlas generation
	5	J BON workshop, Tokyo			
	6	International Exposition Yeosu Korea 2012			
	7			Sharing and internal consistency	
	8				
	9	Genomic Observation WS, Oxford			
	10	CBD COP 11		Reviewing	
	11	Aakusa WS@ Amakusa,			
	12	S9 big-meeting, Tokyo,		Second draft submission	
2013	1	AP-BON WS@Philippines (TBD)			
	2	GEOSS AP Symposium			
	3			Final manuscript submission	
		Manager: Dr. Yamamoto		Editor in Chapter: Prof. M. Tokeshi	