

Global and local activities to collect and share marine biodiversity information

*Takashi Hosono¹, Katsunori FUJIKURA¹, Hideaki Saito¹, Tsukane Yamauchi¹, Miwa Hishiki¹, Tohru Iseto¹, Akira Sonoda¹

1. Japan Agency for Marine-Earth Science and Technology

In response to the concerns to marine environment issues, information on marine biodiversity has become more important. Ocean Biogeographic Information system (OBIS; <http://www.iobis.org/>), a project under the International Oceanographic Data and Information Exchange programme, is currently recognized as one of the global framework to integrate information on marine biodiversity. Since the establishment of OBIS, oceanic area of interest which requires biodiversity information has been largely changed from time to time: coastal area in the discussion of setting marine protected area, arctic area in the discussion of global warming, or deep sea in the discussion of the areas beyond national jurisdiction. For such interests or discussions, OBIS contributes by providing reliable scientific information which covers from tropical to arctic area, from coastal to offshore area, and from surface to bottom layer.

Information in OBIS is an aggregation of datasets provided from local nodes. Japanese OBIS node was launched in 2012, and provides data obtained from Japanese research activities through an information system of BISMAL (<http://www.godac.jamstec.go.jp/bismal/j/>). The data from Japanese node is characterized by its high quality and its wide spatio-temporal coverage. For example, “JODC Dataset” : a large dataset on plankton which cover the western Pacific in 1971-2006; “Asia-Pacific Dataset” : marine organism occurrence data of the Asia-Pacific region extracted from literature in 1820-2014; “Marine Biological Sample Database” : a catalog of specimen collected from deep sea in 1982-2016. In addition, ecosystem-specific datasets such as seagrass, coral and kelp species around Japan are also being established in BISMAL. BISMAL currently published total 445,993 occurrence records with 5,992 marine species. This means BISMAL have information on 20% of all known marine species around Japan (marine species is estimated at about 33,000 species).

As a recent challenge in OBIS activities, OBIS started to collect a different type of information related to marine biodiversity. OBIS has basically collected occurrence records of marine species which compose of “Scientific name” , “Event date” , “Latitude” , and “Longitude” . However, to answer recent scientific needs, OBIS adopted a new data format that allow handling more complex data structure including both occurrence recode and occurrence rerated environmental data. It is expected that an accumulation of such data enables to conduct combined analysis with biological and environment variables in global scale.

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