

## BISMaL as an integrated information system for marine organism: a current achievement and the next step

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In response to the concerns to marine environment issues, comprehensive grasping the information on marine organism has become more important. We started to develop an information system BISMaL (Biological Information System for Marine Life; <http://www.godac.jamstec.go.jp/bismal/j/>) that everyone can easily get various information on marine species around Japan (Tanaka et al. 2010). In 2016, BISMaL is nearly completed as one-stop online service with many functions: visualizing function for occurrence records of marine species as a map, browsing function for taxonomy, videos and images for a given target species, and data management service by data providers themselves. When focusing on the individual functions, there are several online databases similar to BISMa; OBIS as a global database for occurrence data of marine species, or WoRMS as a huge taxonomic database for marine species. Apparent from these online databases, BISMaL is a unique system from the viewpoint that the useful functions/services are tightly connected within the system (therefore, a one-stop service). BISMaL becomes a famous system specialized for marine biological information in Japan, but we are exploring what service we could provide as a next step of BISMaL. If the system could be connected directly to a system/database that store environmental data such as temperature, current or salinity, it would be possible to estimate causal relationships between distribution pattern of marine species and environmental factors on the next BISMaL. Alternatively, by using a large assimilated environment dataset instead of a simple observation-based dataset, it would be possible to refer environmental condition in any time and space even if biological data have no information of their habitat. We will review the functions/services in the current BISMaL, and discuss what type of services in the next BISMaL could contribute to progress of marine science or to resolving global environmental issues. [Tanaka et al. (2010) Data integration system for marine biodiversity constructed in JAMSTEC. JpGU 2010, Chiba.]

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