



Coastal ecosystem change in Asia: hypoxia, eutrophication, and nutrient conditions

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This special section is a collection of papers from international symposium on coastal ecosystem change in Asia: hypoxia, eutrophication, and nutrient conditions, which was held on November 14–15, 2019 in Ehime University, Japan. This symposium was one of the events supported by a project named Leading Academia in Marine and Environment Pollution Research (LaMer), which is granted by Ministry of Education, Culture, Sports, Science and Technology (MEXT) to Center for Marine Environmental Studies (CMES) for a period from 2016 to 2021 as one national Joint Usage/Research Center in Japan.

The background for this symposium is the emergence of many nutrients-related environmental issues in the bays and shelf seas in Asia. For example, hypoxia water has been observed in the Bohai Sea, Thailand Bay, and Jakarta Bay in the past 10 years, and most of them have been associated to the increased nutrient loads from land or aquaculture. On the other hand, the hypoxia records have been revealed in the East China Sea and many bays and inland seas in Japan for more than 50 years. The reduction of nutrient load into coastal water in Japan has been continuing for many years but the hypoxia water is still observed now. Apparently, the

occurrence of hypoxia condition is not only regulated by nutrient loads but also affected by many other factors such as hydrodynamics of the bay. Severe symptoms related to hypoxia/eutrophication have been of societal concern in many countries such as mass mortality of fishes. The symposium provided an opportunity to exchange our understanding on the occurrence of hypoxia water in the coastal water in Asia, which can be used as further input for coastal management.

About 60 scientists and students from Japan, Thailand, Indonesia, Chinese Mainland, Hong Kong and Taiwan attended this symposium and presented 22 oral presentations and 10 posters. The presentations cover several topics: (1) the hypoxia in several areas including off the Changjiang Estuary and Pearl River mouth, along the coastal transition zone off Hong Kong, in the Upper Gulf of Thailand, Tokyo Bay, Osaka Bay, Mikawa Bay, Ariake Sea, and Dokai Bay; (2) transport of water and nutrients in the East China Sea shelf, Taiwan Strait, Upper Gulf of Thailand, Jakarta Bay; (3) harmful algal blooms in western Japan, engineering effort for enhancing water exchange in an inner bay, long-term variations of nutrient concentration and fish abundance in the Seto Inland Sea, and human-induced marine ecological degradation. An abstract book is available from <http://lamer-cmes.jp/news/2446.html>.

In this special section, we received five submissions and accepted three of them. These papers summarized the contents reported in the symposium and the progresses after the symposium. Because of COVID-19, we have to delay the opening of second symposium that was originally set to be held in Hangzhou in 2021. We wish that we can gather in Hangzhou next year and propose another special section in Journal of Oceanography after the symposium. We thank the Oceanographic Society of Japan for providing an opportunity to publish this special section, especially to Professor Naoto Ebuchi, Editor-in-Chief of the Journal of Oceanography.

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