

Health Examination of Enclosed Coastal Seas: The Results of Preliminary Examination Conducted in 88 Areas in Japan

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Health examination of enclosed coastal seas is essential not only for diagnosis of the present status but also for planning of the treatment or environmental restoration. Since the present status of the enclosed seas along the coast of Japan is more or less "damaged" or "deteriorated" mainly due to prolonged impact of human activities, health examination was conducted in the officially accepted 88 enclosed coastal seas in Japan following the proposed examination scheme based on the "Master Plan and Guideline". In this scheme, two major functions of marine ecosystem which are "ecosystem stability" and "smoothness of material cycling" are highlighted.

Although health examination of coastal marine environment is widely accepted as a concept of analogy to the human health examination, definition of marine environmental health and practical methodology of examination has not been adequately developed. We have already proposed a health examination scheme as a new ecosystem approach to environmental monitoring and management which consists of preliminary examination and advanced examination.

In the present study, varieties of published data on the individual items related to "ecosystem stability" and "material cycling" were analyzed as preliminary examination. As results, according to "ecosystem stability", conditions on species composition change indicated by fish catch data are critically serious in almost all the areas examined. As to "smoothness of material cycling", conditions related to primary productivity indicated by transparency data, benthic environment indicated by sediment quality data, material cycling through benthic fish catch have been seriously damaged in more than half of the areas examined. Worsening of the benthic environment and ecosystem suggested by these results is one of the most critical items threatening the environmental health of the enclosed coastal seas in Japan.

Characterization of 88 enclosed coastal seas based on the result of the examination is also made in relation the natural environment of the individual area. Future perspective for the new health examination is also discussed from the view point of environmental and resource management of coastal areas.

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