

New Ocean Paradigm on its Biogeochemistry, Ecosystem and Sustainable Use

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It is an important issue for today's science community to consider how marine ecosystems and their material cycles respond to marine environmental changes taking place on a global scale. Such changes are becoming more apparent, including how the benefits that humans have been receiving from the ocean will change in the future, and how we can enhance the utilization of the ocean in order to promote sustainable development. In 2012, a five-year transdisciplinary project was launched in Japan, called the "New Ocean Paradigm on its Biogeochemistry, Ecosystem and Sustainable Use (NEOPS)". This project aims to explore ways to utilize ecosystem services from the high seas in a sustainable manner. It integrates natural science, which focuses on the open ocean in the central and western Pacific, in particular the high seas where there is limited knowledge about ecosystem mechanisms or material cycle functions, and social science which looks at governance necessary for sustainably utilizing services. As an essential part of the project, we aim to establish new ocean provinces by identifying material cycling and ecosystem functions in each of the provinces as a scientific base for a legal and economic framework to establish governance for sustainable use of the ocean. In the presentation, we will show obtained results from NEOPS and also the plan of a next FUTURE EARTH related project based on the fruits of NEOPS.

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