

Study on land-marine coupling system in Eastern Hokkaido, Japan

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Marginal seas located in North Pacific Ocean have terrestrial input from large rivers (Yangtze River, Yellow River, and Amur River) and reflect changes in river watershed condition. They receive dissolved and particulate substances from river watershed and actively occur material circulation by physical, biological and geochemical processes. The marginal seas also play role in buffering effects between terrestrial and coastal marine environment, and have a large impact on primary production in northwestern North Pacific Ocean. Therefore, it is important to understand land-marine coupling system. However, environmental scale is different from river watershed to coastal ocean so that field research is carried out each environmental area at same timing for all basic physical, chemical and biological parameters. Our research group discussed about the research concept and remaining problems, and organized a research plan under the pioneer-type research “Study on land-marine coupling system –multi-scale analysis and integrated understanding” by the Institute for Low Temperature Science, Hokkaido University. We carried out multi-scale research at Eastern Hokkaido (Betsukanbeushi River-Lake Akkeshi-Akkeshi Bay-Oyashiro area) to understand the effects of iron, nutrients and organic matter on primary production at coastal marine environment in October 2017. We introduce the outline and research plan of land-marine coupling system in this project, and report some preliminary results from the first research.

Keywords: wetland, iron, nutrients, marginal seas