

Submarine groundwater discharge and nutrients state of around coastal seawater

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In recent years, the importance of nutrient input to the coastal seawater through submarine groundwater discharge (SGD) has been pointed out in several studies. The coastal area of Hiji town in Oita Prefecture, it is known that there is a submarine groundwater discharge. However, the effects of SGD-derived nutrients has not yet been clarified in this area. Therefore, we investigated the spatial distribution of SGD using radon-222 isotope as a groundwater tracer and assessed the impact on the nutrient (DIN and DIP) concentrations of surrounding seawater. In May 26-30, 2014, we monitored ²²²Rn and nutrients along the coast of Hiji. In addition, we collected the spring water on the land and the spring water of a salt water mixture discharged on the coast. As a results, ²²²Rn concentrations was clearly highest on SGD point. Nutrients concentrations around the SGD point were higher DIP concentrations than elsewhere and the N/P ratios lower than the Redfield ratio. These results imply that SGD is main source of DIP in coastal area of Hiji.

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