

## Long-term variation of nutrient discharge in the coastal catchment of Seto Inland Sea

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To clarify the characteristics of nutrient discharge from coastal catchments to Seto Inland Sea, we confirmed the long-term variation of nutrients concentration and its ratio using the existing data, meanwhile we estimated the nutrients fluxes of riverwater and groundwater at river basins of Hiroshima prefecture. The results are summarized as follows:

1) In Ashida River, silica concentration shows the decrease trend, nitrogen concentration shows the increase trend, and phosphorus concentration is almost constant for 36 years from 1968 to 2003. Especially, the silica concentration significantly decreased before and after the dam construction. Furthermore, it became clear that the N/P ratio increased and both the Si/P ratio and the Si/N ratio decreased for 36 years in this river.

2) In Kurose River, nutrients fluxes of riverwater and groundwater were estimated. Based on these results, riverwater/groundwater ratio of each nutrient flux was estimated. The ratio of silica was 8.1, that of phosphorus was 4.6, and that of nitrogen was 62.6. From these results, it is suggested that the silica and the phosphorus discharge by groundwater have a large effect on nutrients discharge from land to the sea, and nitrogen is mainly discharged from the river.

3) The relatively large contribution of silica and phosphorus discharge by groundwater suggests the possibility of that N/P ratio of seawater can be controlled by the groundwater discharge.