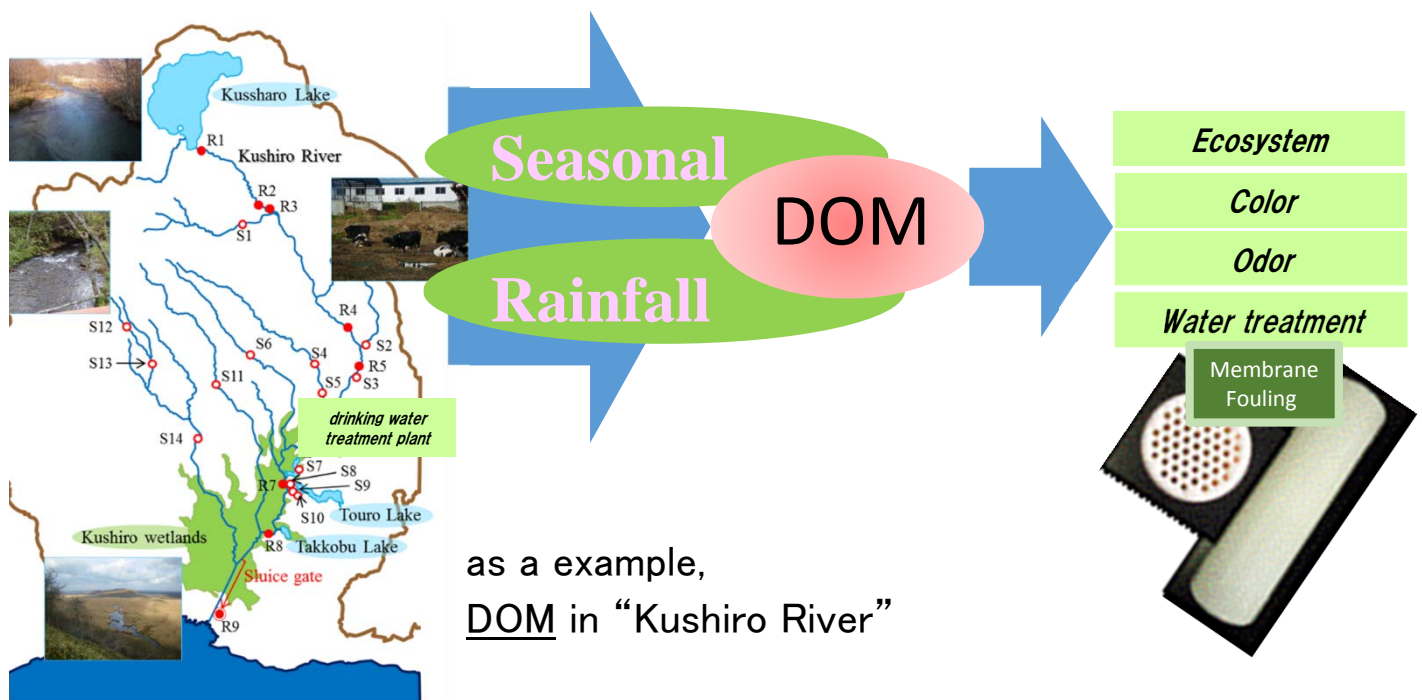


Contaminants Analysis in Water Environments

– dissolved organic matter (DOM) -

River, lake and sea water normally contains few mg-C/L of DOM, and the source has a large variety, eg. plants, animal and human activity. These DOM affect water quality, ecosystems and its usage for us. Recently, the identification of DOMs by new analytical method the effect of DOM onto membrane fouling of river water and onto transparency in seawater has been studied in our laboratory. At here, DOM characterization in Kushiro river is introduced as example.



This project aim to develop the easy and quick comprehension of the component and composition of the organic matter in raw water. The seasonality and eventuality of the water quality variation of the Kushiro River which have various sources are evaluating by the conventional indices of a water purification plant and a new index using EEM-PARAFAC (Excitation Emission Matrix Spectroscopy-Parallel Factor Analysis).

The conventional indices were able to grasp the seasonality and the rainy eventuality of the variation of the water quality for the raw water in the monitoring of the monthly and daily data. However, to identify the source of DOM flowing in was difficult, because these indices comprehensively offered the information on the variation of DOM. Few peaks based on the variation of DOM species could be identified by EEM-PARAFAC, then several kinds of natural origins, rainfall event, seasonal change (such as the freezing and snow melting) and anthropogenic event by the characteristic agricultural activity could be classified clearly.