

Water Environment Engineering Laboratory

Staff	• Associate Professor Kuriko YOKOTA (E-mail : yokota@ace.tut.ac.jp)
Laboratory URL	http://www.wq.ace.tut.ac.jp/
Key words	Water environment, diffuse pollution, nutrients, Mercury

The main topics of this laboratory are quantification of pollution sources by monitoring, and elucidation of runoff mechanism from forest stream to urban area rivers.

Theme 1 ► **Runoff analysis of contaminations from agricultural fields**

Runoff from agricultural fields includes nitrogen and phosphorus from fertilizers, and can be considered to contribute a large volume of the runoff load to closed water bodies such as lakes and estuaries. Runoff containing a particularly large volume of pollutants is generated when it rains. Targeting runoff during rainfall, we are seeking to understand and evaluate the volume of contaminants in runoff from agricultural fields and the characteristics of that runoff, and consider ways to reduce the resulting load.



Runoff from agricultural field

Theme 2 ► **Study on water quality of the Umeda River**

The eastern, interior part of Mikawa Bay (Atsumi Bay) suffers from chronic eutrophication, with damage to the finishing industry already being reported, including massive damage to the population of juvenile littleneck clams. The reason is thought to be excessive nutrients being supplied from continental areas, but much remains unknown about the actual situation. Looking at the Umeda River, the second largest river in the region behind the Toyo River, as the subject of our survey, we are seeking to obtain an understanding of the characteristics of the pollutants in the drainage basin and consider ways to reduce the pollutant load.



Mikawa Bay

Theme 3 ► **Survey on mercury contamination in the environment**

The Minamata Convention on Mercury, ratified in October 2013, has brought further attention to problems relating to mercury. Mercury is easy to spread worldwide via atmospheric long-range transport. Some mercury compounds are removed from the atmosphere as a dry/wet deposition. Mercury ion in the water is readily methylated by both abiotic and biotic pathways. There are still many unknown elements in relation to the movement of mercury through the environment in Japan, however. We are continuously monitoring the input of contaminants from non-point sources at investigating sites.



Forest Stream Survey



Atmospheric observation