

# ● Research Trends and Results

## Links with overseas research institutes regarding conservation of the Northwest Pacific marine environment

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### 1. Introduction

In countries near Japan, rapid population growth and industrial growth seen in recent years have not been accompanied by adequate development of their sewage systems and other infrastructures, resulting in an increasingly serious problem of water pollution in major rivers and Northwest Pacific. The Wastewater System Division has studied methods of conserving the future marine environment in Northwest Pacific (Bohai Sea, Yellow Sea, East China Sea, Japan Sea), and in particular, has attempted to clarify the pollutant load runoff reduction effects of providing sewerage systems in neighboring countries. And because we often cannot obtain overseas data or documents inside Japan in sufficient quantities for our survey, we have undertaken survey research in cooperation with researchers in the concerned countries (Japan, China, Korea, Russia).

### 2. Contents of recent surveys and challenges

In order to clarify the future effectiveness of measures to reduce pollutant loads in Northwest Pacific achieved as a result of the construction of sewerage systems in neighboring countries, the Wastewater System Division built a simulation model of the runoff of pollutant loads from watersheds in concerned countries and set future economic growth (increasing pollutant loads) scenarios and sewerage system installation scenarios (reducing pollutant loads), verifying the effectiveness of pollutant loads reduction measures. We also built a hydrodynamic and water quality model, and entering the results of calculations by a pollutant load model, used it to perform flow and water quality model calculations, clarifying the way that the pollutant load (COD, T-N, T-P) behaves on the surface of Northwest Pacific (Fig. 1).

On the other hand, it was extremely difficult to collect water quality data from each country in order to perform the above simulation calculations. We think that in the future, as one challenge to be overcome to take marine environment conservation measures in Northwest Pacific, it will be vital that each country continues sustained monitoring of water quality in major rivers and in Northwest Pacific.

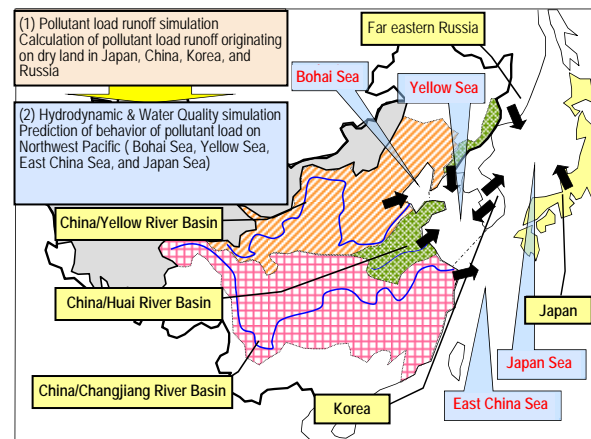


Figure 1. Outline of Contents of Surveys in Previous Years



Figure 2. The International Conference with Overseas Researchers and Signing the Agreement

### 3. Future links with overseas research institutes

In February 2011, we held an international meeting for researchers invited to Tokyo from Japan, China, Korea, and Russia, countries which had already been cooperating with our survey research (Fig. 2 left). At the conference venue, reports were given on the results of the past surveys, confirming the importance of continuing relationships with research institutes and sharing water quality monitoring data possessed by each country. At the same time, the participants signed an agreement stating that researchers from Japan, China, Korea, and Russia would share water quality monitoring data for major rivers in the various countries and for Northwest Pacific (Fig. 2 – right). In the future, based on the knowledge already obtained, we will continue to collect information concerning pollutant unit load etc. and water quality monitoring data from each country, and also actively provide such

information to them.

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