

## The Survey of Dioxins Distribution in Tokyo Bay

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Dioxins flow into the bay through rivers and fall into the bay as atmospheric depositions. However, their impacts to the sea are not clear yet except limited river mouths and port areas. Therefore, subsidized by the Nippon Foundation, the distributions of dioxins were surveyed in Tokyo bay to understand horizontal distribution in the surface sediment at the offshore area, chronological accumulation processes vertically recorded in core samples of the bottom sediment over 100 years, and locations of sources and spreading paths estimated from the core samples.

The results of the surface water ranged from 3.2 to 52 pg-TEQ/g-dry, which did not exceed the existing results of 1.4 to 59 pg-TEQ/g-dry obtained by the Ministry of Transport and the Environment Agency. Horizontally, the concentrations showed obviously higher in inner bay than in outer bay. Vertically, in the core samples, the concentrations peaked in the layers of 1962 to 1980, recording 110 pg-TEQ/g-dry at the maximum. The sources and paths of dioxins were largely affected by agricultural chemicals such as PCP and CNP in inner bay and by atmospheric depositions in outer bay. The dioxins were mainly absorbed by particles less than 75  $\mu$  m.

As a result, the survey clarified the distributions, historic records, sources, and grain size to absorb dioxins. The lesson and policy of countermeasures learned from the survey were 1) the special attention should be paid for disturbance of bottom sediments by dredging of layers with high concentrations of dioxins, and 2) it is worth considering the technologies to remove dioxins absorbed by suspended particles as a **countermeasure**.