

## **The Nationwide Investigation of Endocrine Disruptors in Sediment on Harbours**

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Various types of endocrine disruptors or environmental hormones flow from their sources down into harbours through rivers and other watercourses, and are accumulated in sediment on the sea bottom. Tributyltin, which has been used as paint for ship bottoms, is considered one of the endocrine disruptors.

In close cooperation with the other ministries and agencies, the Ports and Harbours Bureau of the Ministry of Land, Infrastructure and Transport carried out an investigation in 1999 to grasp the actual condition of 12 endocrine disruptors in the sediment on 39 harbours, in order to gather fundamental data to be used in future examinations of policy.

Furthermore, in 2000 the bureau chose seven harbours out of the above 39 harbours as subjects of an additional investigation regarding the surface distribution of endocrine disruptors in the harbour areas and the synchronistic change of accumulation of dioxin and other substances.

The following are the results of these investigations.

- ① An outline of the distribution of the 12 endocrine disruptors accumulated in 39 harbours in Japan, as well as their concentration levels, was obtained.
- ② As the result of the investigation regarding the surface distribution of endocrine disruptors accumulated in seven harbours, relatively high concentrations were measured in the innermost parts of harbours and the mouths of rivers.
- ③ Synchronistic changes in the amount of dioxin and other substances accumulated in sediments of five harbours were determined. Small amounts of dioxin and other substances, including an especially small amount of coplanar-PCB, were found in the layers formed before or around 1950. Relatively large amounts of these substances were measured in the upper layers formed during roughly 1960 to 1990, though no significant yearly differences in concentration could be identified. This result coincides with the facts that, during roughly 1960 to 1980, PCP and CNP were used as agricultural chemicals and full-scale production of PCB started in 1960.