

Scientific Researches as the Base of the Countermeasure to Red Tide Outbreaks in the Seto Inland Sea

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Since 1969, red tides due to marine harmful phytoplanktons have developed most of the coast and aquacultural field of the Seto Inland Sea. The total loss of fisheries and aquacultures from 1964 to 1987 have amounted to about 200 million dollars. For the environmental conservation of the Sea, the endeavors to remove the causes of the red tide outbreaks which seemed to be due to human inducing loadings and to establish of the monitoring system were urgently requested.

In 1966 1st cooperative study group was organized by 6 university scientists on " the cause of red tide in neritic waters ", and devised the study strategy as follows; 1) Ecological studies in enclosed bay and aquacultural field. 2) The study on effects of human induced pollution on the outbreaks of red tide in the Seto Inland Sea. 3) Physiological studies on nutritional requirements of red tide organisms.

This was the 1st organized study on red tide in Japan carried from 1966 to 1968 and exerted great influences to later red tide studies to promote the cooperative studies and map out the research strategies.

In 1973, the Law concerning Special Measures for Conservation of the Environment of the Seto Inland Sea (LCES) was passed by Bureau of Environment and COD loading was regulated by the action of the law and guideline of phosphorus discharge control are also presented to the Prefectures and industries locating along the coast. Red tides occurred in 1976 were counted to 299 but in 1992 reduced to 107 and cultured fish damages also decreased remarkably. The preventions of red tides looks like somewhat successful now. The decrease of red tides seems to depend on the action of LCES, provision of waste water treatment facilities and elevated awareness of the citizen to the conservation of environment. These measure are now supported by the activities of scientists.