

OBSERVATIONS OF ANOXIC BOTTOM WATER (AOSHIO) IN THE INNERMOST OF TOKYO BAY

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Aoshio frequently occurs along the coast of Tokyo Bay, in the region extending from off Urayasu City to Chiba Port. According to the existing literatures, the Aoshio occurs when anoxic water mass formed in the bottom layer rises to the surface under the influence of wind, rainfall, air temperature drop and other factors. However, actual observations conducted during the Aoshio season are scarce, among them being remarkable the then Environment Agency's continual observations which was made on 4 stations during the Aoshio season of 1992 to 1994. In the present report, we analyzed records of Tokyo Electric Company's observations, which, with the aim of obtaining real-time water quality conditions during Aoshio occurrence, were conducted in May to October at 2 water depths of 2 seasons and at 2 layers of 6 stations in 1992 and 1993 respectively. Water temperature, salinity and dissolved oxygen were measured.

Following results were obtained on the Aoshio which emerged on the Chiba Prefectural coast of innermost part of Tokyo Bay in 1992 and 1993.

- (1) Before Aoshio emerged, a strong south wind preceded abrupt changes in water temperature, salinity and DO of the bottom layer. The changes were recognized only in the bottom layer records. They first occurred at station D2, nearest to the shore, then gradually later towards offshore, and 15 to 20 hours later at the most offshore station D5.
- (2) In shallower area, when the bottom layer temperature rose and salinity decreased, it was usually preceded half a day earlier by changes in the surface layer. When the bottom layer temperature declined and salinity increased, on the other hand, it preceded changes in the surface layer by half a day.
- (3) When a prolonged south wind blowing was followed by a continuous north wind in the stratified water in the inner bay, a larged scale Aoshio was observed to emerge.(Fig.1)
- (4) Rainfall is not prerequisite for the Aoshio emergence.

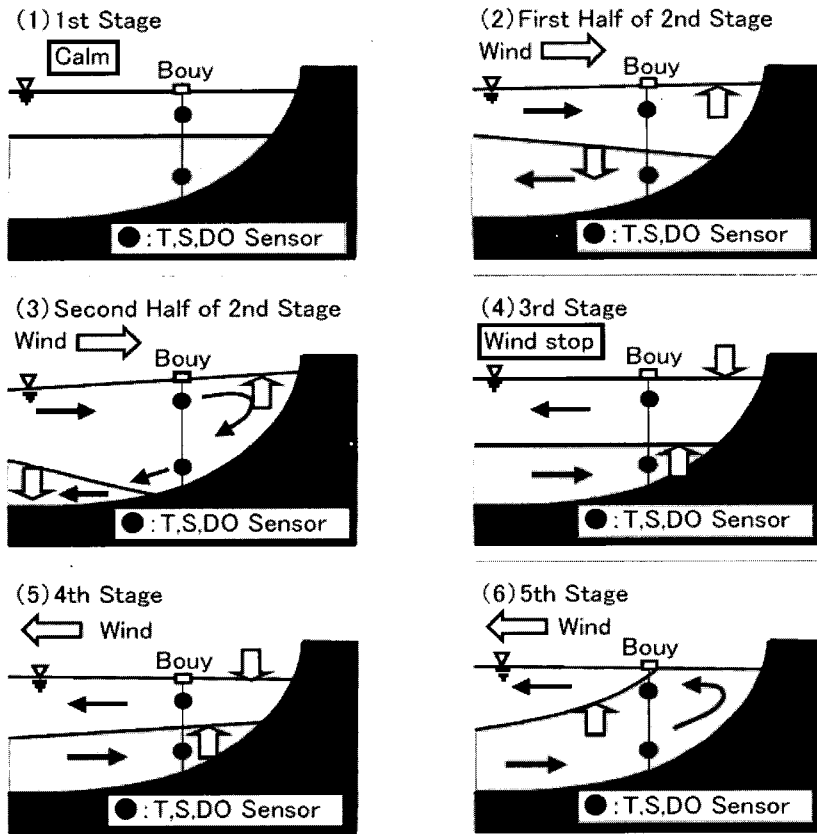


Fig. 1 Estimated mechanism of Aoshio occurrence