

# 三河湾の浚渫窪地周辺海域における微細な物理環境解析

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## Abstract

Borrow pits (huge depressions) that remain after dredging in various parts of Japan's coastal waters are generally steep-sided and deeper than the ambient seabed. These characteristics can cause stratification of the water column, reduce vertical circulation, and bring about the occurrence of oxygen-deficient bottom water. Thus, it is considered that recontouring these areas would be an effective measure to rehabilitate the water quality and damaged ecosystem.

To predict the beneficial effects of recontouring using a numerical model, it is necessary to evaluate the local flow field precisely. For this purpose, a 3-D non-hydrostatic pressure model (full-3D model) was developed. In this study, the model was calibrated for the borrow pit off Mito in Mikawa Bay based on existing field data for the year 2002. To examine the effectiveness of the model, the numerical results were compared with those of a conventional hydrostatic pressure model. The comparison proved the full-3D model to be much more adequate at simulating the stratification structure of the pit. Moreover, it turned out that the full-3D model also reproduces reasonably the vertical mixing process under strong wind conditions.