

Abstract

Field experiments were carried out to remediate organically enriched sediments. The sediments were collected from the ship fairway to Amagasaki Port and mixed with iron slag and then placed into hydrated iron slag concrete boxes. The experimental setups were placed in shallow seashore in Amagasaki Port. Sediment pH was increased, and oxidation-reduction potential was also increased by mixing of the slag compared to those at the original site. The concentration of acid-volatile sulfide was significantly decreased by these treatments. Biomass of benthic animals was increased significantly, which was high compared to those in an artificial tidal flat constructed ca. 4 years before our experiments near the experimental site. An acceleration of phosphorus cycle in the sediments was suggested as a cause of remediation by the calculation using a benthic ecosystem model. However, which the transfer sediment to the shallow area and the addition of slag is effective on the remediation was not clear in the present experimental settings.