

# Bottom environmental changes during the past 200 years in Mishou Bay, Ehime Prefecture, Southwest Japan

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Coastal sediments can be considered as environmental archives of both marine area and drainage basin. Mishou Bay of Ehime prefecture is semi-enclosed and its sediment has a potential of preserving environmental histories. This study discusses bottom environmental changes using surface sediments. Present sedimentary conditions and bottom environment of the bay are discussed based on grain size, total organic carbon (TOC) and total nitrogen (TN) contents of surface sediments. In addition, changes in the modality of supply of organic matters and clastic sediments during the past 200 years are discussed, based on the fluctuations of grain size, TOC and TN contents and ratio of total organic carbon to total nitrogen (C/N ratio) and sedimentation rate evaluated by  $^{210}\text{Pb}$  method in two sediment cores. Grain size of surface sediments of the bay decreases from the bay mouth toward the eastern part, where very fine silt is distributed. This suggests tidal current velocities are gradually decreasing toward the east. TOC content is relatively high at the eastern part and near the river mouth and decreases toward the bay mouth. This suggests that TOC is mainly controlled by the dilution by clastic sediments. On the other hand, river mouth areas receive more organic matter. TOC and TN contents of the two core sediments show an increase from the layers of AD 1950 to present. However, C/N ratio that indicates origin of organic matter is almost constant. These results suggest that organic matter load in the area has increased, however, the ratio between planktonic organic matter to that from plant origin has been constant. In addition, primary production in the bay increased from 1950's. Grain size of the core sediment near the river mouth shows increase toward the top. On the other hand, core in the central bay shows rapid decrease in grain size from 1900's to 1950's. Increase of grain size in core sediment near the river mouth suggests gradual prograding of the delta system off the mouth of Sozu river. Decrease of grain size in core sediment from the central part of the bay suggests that supply of coarse clastic sediments from the drainage area decreased from early 1900's.