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## The effect of long-term spatiotemporal variations in urbanization-induced eutrophication on a benthic ecosystem, Osaka Bay, Japan

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Limnol. Oceanogr., 52(4), 2007, 1633-1644 | DOI: 10.4319/lo.2007.52.4.1633

**ABSTRACT:** Detailed spatiotemporal patterns of the influence of urbanization-induced eutrophication on a metazoan benthic community in Osaka Bay were determined using sediment cores and fossil ostracode assemblages from the last 200 yr. Results suggest that total abundance of ostracodes increased in the middle part of the bay as a result of the increase of food supply eutrophication. Conversely, abundance decreased in the inner bay, likely because of bottom-water hypoxia by eutrophication. The variation in species composition among sites within the bay may have decreased because of the effect of eutrophication, i.e., the dominance of species that prefer food-rich environments throughout all sites. These eutrophication-induced changes occurred around 1900 as a result of Japan's industrial revolution and around 1960 as a result of rapid urbanization, depending upon location.

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