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Nutrients and phytoplankton community composition in southern California coastal waters

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ABSTRACT

Analysis of portions of a phytoplankton data set collected in Santa Monica Bay from 1957 to 1972 suggested seasonal and distributional relationships between diatoms and dinoflagellates. Blooms of both groups overlapped and tended to be concentrated into a period from the spring through summer. However, while diatom biomass was averted into the Bay from offshore, dinoflagellate blooms seemed to arise inshore near sources of anthropogenically derived nutrients.

Differences in abundance and community composition were explained on the basis of groups of environmental factors (parameters set) favoring each group. Supplement of limiting factors (such as nitrogen) enhances total biomass, but differences in parameter sets may result in inshore-offshore distributional patterns. It was suggested that the relative abundance of ammonia-N may be a tag for the dinoflagellate parameter set.

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