AN ASSESSMENT OF VERTICAL STRUCTURE OF THE PHYTOPLANKTON COMMUNITY ALONG AN ONSHORE TO OFFSHORE TRANSECT ORIGINATING IN MONTEREY BAY, CALIFORNIA

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To investigate phytoplankton distributions off the central California coast, hydrographic, chemical and biological samples were collected from the upper 150 meters of the water column during two cruises in 1997. Cruise 1, conducted in February, crossed three prominent hydrographic features based on temperature-salinity diagrams (T-S): onshore, transition, and offshore. Cruise 2, conducted in September, encountered the same three hydrographic features however the presence of a jet of offshore water was detected onshore. Phytoplankton pigments were used to characterize the water mass types determined from the T-S diagrams. In onshore, nutrient-rich waters, fucoxanthin was the dominant pigment while 19-hexanoyloxyfucoxanthin and divinyl chlorophyll a characterized the warmer, nutrient-poor offshore type water. Vertical distributions of phytoplankton pigments during both cruises revealed significant changes over the spatial scale of approximately 200 kilometers. The current study illustrates the effectiveness of using phytoplankton pigment signatures to identify different water mass types.