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A comparison of neustonic plastic and zooplankton abundance in southern California's coastal waters

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ABSTRACT

The density of neustonic plastic particles was compared to that of zooplankton in the coastal ocean near Long Beach, California. Two trawl surveys were conducted, one after an extended dry period when there was little land-based runoff, and the second shortly after a storm when runoff was extensive. On each survey, neuston samples were collected at five sites along a transect parallel to shore using a manta trawl lined with 333 μm mesh. Average plastic density during the study was 8 pieces per cubic meter, though density after the storm was seven times that prior to the storm. The mass of plastics was also higher after the storm, though the storm effect on mass was less than it was for density, reflecting a smaller average size of plastic particles after the storm. The average mass of plastic was two and one half times higher than that of plankton and was even higher after the storm. The spatial pattern of the ratio also differed before and after the storm. Before the storm, the highest plastic:plankton ratios were observed at the two stations closest to shore, whereas after the storm these stations had the lowest ratios.

Full Text

ftp://ftp.sccwrp.org/pub/download/DOCUMENTS/AnnualReports/2001_02AnnualReport/06_ar02-shelly.pdf