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Synoptic survey of chlorinated hydrocarbon inputs to the southern California Bight

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EXECUTIVE SUMMARY

Specimens from the bottom had increased their levels of DDT and PCB by factors of 43 and 18, respectively; those from the surface increased their levels by factors of 5 and 3, respectively. Throughout the uptake study, there were periods when the organisms appeared to rid themselves of a portion of their chlorinated hydrocarbon burden. Part of the variability observed, such as the dip in some of the curves at week seven, may be due to spawning; alternatively, the cause may have been movement of the wastewater plume away from the buoy system. Halfway through the twenty-eight week experiment, the bottom and surface specimens respectively had accumulated total DDT to levels approximately 200 to 20 times greater than those measured in the controls; corresponding contamination factors for total PCB were 60 and 6. At this point uptake in specimens from the two deepest levels (35 m and 25 m) ceased, and there was some indication of a subsequent decrease in their DDT and PCB concentrations. In contrast, values for the next two stations (15 m and 4 m), and to some extent for the surface station also, continued to increase. This is consistent with a weakening of the thermocline in the fall season and a corresponding increase in exposure of the upper specimens to the wastewater plume in the mixed layer of the discharge zone.