

Harbor seals as indicators of trends in contaminants in Puget Sound: comparison of results from two sites

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Keywords: harbor seals, marine mammals, contaminants, trends, PCBs, DDT

Harbor seals in Puget Sound provide some of the most consistent data on long term trends in contamination since they have been consistently sampled since the early 1970s and are integrators of contaminants in the marine fishes of a region. We conducted analyses for a broad range of chlorinated hydrocarbon contaminants in harbor seal pups found dead or live biopsied from two regions of Washington State from 1984 to 1997 and examined trends in contaminants going back to 1972. In southern Puget Sound, concentrations of PCBs and DDT have declined dramatically since the 1970s but have stabilized beginning in the mid-1980s with only a more gradual decline since then. Concentrations of both PCBs and DDTs from Smith Island, a site in northern Puget Sound farther from industrial areas, had also declined in a similar fashion since the 1970s. While concentrations have declined in both regions, concentrations from the site in southern Puget Sound remained higher than the northern site. Despite the decline, harbor seals appear still at risk, especially within southern Puget Sound where current concentrations of PCBs and the toxic equivalency quotient (TEQ) in pups from southern Puget Sound within the range identified as causing immunotoxicity in seals.