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Polybrominated diphenyl ethers in pinnipeds stranded along the southern California coast

Xiang-Zhou Meng[1], Mary Ellen Blasius[2], Richard W. Gossett[2] and Keith A. Maruya[1]

[1]*Southern California Coastal Water Research Project, Costa Mesa, CA*

[2]*California State University, Institute for Integrated Research in Materials, Environments and Society (IIRMES), Long Beach, CA*

ABSTRACT

Little to no information exists for polybrominated diphenyl ethers (PBDEs) in marine mammals frequenting the highly urbanized southern California (USA) coast. Fourteen PBDE congeners were determined by GC–ECNI-MS in blubber of pinnipeds stranded locally between 1994 and 2006. Total PBDE concentrations (∑PPBDE) in California sea lion (n = 63) ranged from 0.04 to 33.7 μg/g wet weight (mean: 5.24 μg/g). To our knowledge, these are the highest reported PBDE levels in marine mammals to date. By comparison, mean ∑PPBDE in Pacific harbor seals (n = 9) and northern elephant seals (n = 16) were 0.96 and 0.09 μg/g, respectively. PBDEs in adult males were higher than for adult females, however, no age class differences or temporal trends were observed. As the first PBDE data reported for marine mammals in this region, the elevated levels underscore the need for additional studies on the sources, temporal trends, and potential effects of PBDEs in highly urbanized coastal zones.