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Ten Years of Domoic Acid Surveillance in Stranded Marine Mammals of Monterey Bay 2009-2019

Pseudo-nitzschia australis is a common, naturally occurring diatom first identified in Monterey Bay and Santa Cruz counties in 1991 (Fire et al., 2008; de la Riva et al., 2009; Bargu et al., 2010). *P. australis* produces domoic acid (DA), a neurotoxin that negatively impacts marine mammals and other wildlife along the central and Southern California Coasts. Previous studies have investigated the impact of domoic acid on marine mammal populations including clinical symptoms, histological evidence of impact, and impacts during known algal blooms. In this study, we investigate the presence of domoic acid in at least one of the three main body fluids (urine, feces, and stomach contents) of all fresh stranded marine mammals collected between 2009 and 2019 on the Central Coast of California. During the study period, 152 animals stranded and included 13 different species of marine mammals. Animals collected for necropsy were either fresh dead (code 2) and in rare cases, moderately decomposed (code 3). I found that 75.7% of fresh dead animals had DA present in at least one body fluid, regardless of their cause of death. Notably, 78.9% of our most commonly collected species, the California Sea Lion (*Zalophus californianus*) tested positive in at least one fluid sample for domoic acid. The data from this study indicate domoic acid is widespread in the environment when a major bloom has not been detected. Given the known chronic neurological effects of DA, as well as the reproductive harm it can cause, the high prevalence of this neurotoxin in the marine environment may be having impacts on marine mammals.