

A decade and a half of *Pseudo-nitzschia* spp. and domoic acid along the coast of southern California

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ABSTRACT

Blooms of the marine diatom genus *Pseudo-nitzschia* that produce the neurotoxin domoic acid have been documented with regularity along the coast of southern California since 2003, with the occurrence of the toxin in shellfish tissue predating information on domoic acid in the particulate fraction in this region. Domoic acid concentrations in the phytoplankton inhabiting waters off southern California during 2003, 2006, 2007, 2011 and 2017 were comparable to some of the highest values that have been recorded in the literature. Blooms of *Pseudo-nitzschia* have exhibited strong seasonality, with toxin appearing predominantly in the spring. Year-to-year variability of particulate toxin has been considerable, and observations during 2003, 2006, 2007, 2011 and again in 2017 linked domoic acid in the diets of marine mammals and seabirds to mass mortality events among these animals. This work reviews information collected during the past 15 years documenting the phenology and magnitude of *Pseudo-nitzschia* abundances and domoic acid within the Southern California Bight. The general oceanographic factors leading to blooms of *Pseudo-nitzschia* and outbreaks of domoic acid in this region are clear, but subtle factors controlling spatial and interannual variability in bloom magnitude and toxin production remain elusive.

Full Text

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