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

Jayme Smith1, Paige Connell1, Richard H. Evans2, Alyssa G. Gellene1, Meredith D.A. Howard3, Burton H. Jones4, Susan Kaveggia5, Lauren Palmer6, Astrid Schnetzer7, Bridget N. Seegers8,9, Erica L. Seubert1, Avery O. Tatters1, David A. Caron1

1Department of Biological Sciences, 3616 Trousdale Parkway, AHF 301, University of Southern California, Los Angeles, CA 90089, United States
2Pacific Marine Mammal Center, 20612 Laguna Canyon Rd., Laguna Beach, CA 92651, United States
3Southern California Coastal Water Research Project, 3535 Harbor Blvd., Costa Mesa, CA 92626, United States
4KAUST, Red Sea Research Center, King Abdullah University of Science and Technology, 4700 King Abdullah Boulevard, Thuwal, 23955-6900, Saudi Arabia
5International Bird Rescue, 3601 S Gaffey St, San Pedro, CA 90731, United States
6Marine Mammal Care Center, 3601 S. Gaffey St., San Pedro, CA 90731, United States
7North Carolina State University, 4248 Jordan Hall, 2800 Faucette Drive, Raleigh, NC 27695-8, United States
8National Aeronautics and Space Administration, Goddard Space Flight Center, Mail Code 616.2, Greenbelt, MD, 20771, United States
9GESTAR/Universities Space Research Association, 7178 Columbia Gateway Drive, Columbia, MD 21046, United States

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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