

The Distribution of *Pseudo-nitzschia* spp. Along the Southeastern U.S. Coastline

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Phytoplankton is the base of the ocean's food web and they play a vital role in supporting life. However, under certain conditions phytoplankton populations can grow unchecked forming algal blooms which can deplete oxygen as blooms senesce. Some species of phytoplankton are known to produce toxins and when these species bloom they can produce far reaching negative effects. Domoic Acid (DA) is the neurotoxin produced by *Pseudo-nitzschia* a type of diatom. DA has long been a documented issue on the west coast of the United States. Over the last three years, a number of strandings of pygmy sperm whales and dolphins along the southeastern U.S. coast have been linked to DA, suggesting that *Pseudo-nitzschia* may be an issue in this area. Since little work has been done looking at *Pseudo-nitzschia* distribution in this area a collaborative study was implemented to assess this species distribution. NOAA Phytoplankton Monitoring network in conjunction with the South Carolina Maritime Foundation and South Carolina Department of Natural Resources set out to collect phytoplankton samples from Oregon Inlet, NC to Cape Canaveral, FL. The SCDNR program SEAMAP and the SC Maritime Foundation boat The Spirit of South Carolina collected samples from along the coast, while NOAA Phytoplankton Monitoring staff collected samples from within three different estuaries in South Carolina. These samples were screened using an inverted light microscope to assess what species of phytoplankton were present. When *Pseudo-nitzschia* was present, samples were settled on a Sedgwick Rafter counting chamber to determine the abundance present. A scanning electron microscope was then used to identify what species of *Pseudo-nitzschia* was present. *Pseudo-nitzschia* was found off the southeastern U.S. coast at nearly all stations sampled, as well as within, the South Carolina estuaries. Further research is necessary to identify any trends that may govern their distribution.

This work is supported by the Summer Undergraduate Research Program, Medical University of South Carolina, HML Consortium for Research Training in Oceans and Human Health, Marine Biomedicine and Environmental Sciences Department, MUSC, NOAA National Ocean Service's Center for Coastal Environmental Health and Biomolecular Research, the SC Sea Grant Consortium and the NSF Centers for Ocean Sciences Education Excellence (COSEE)