

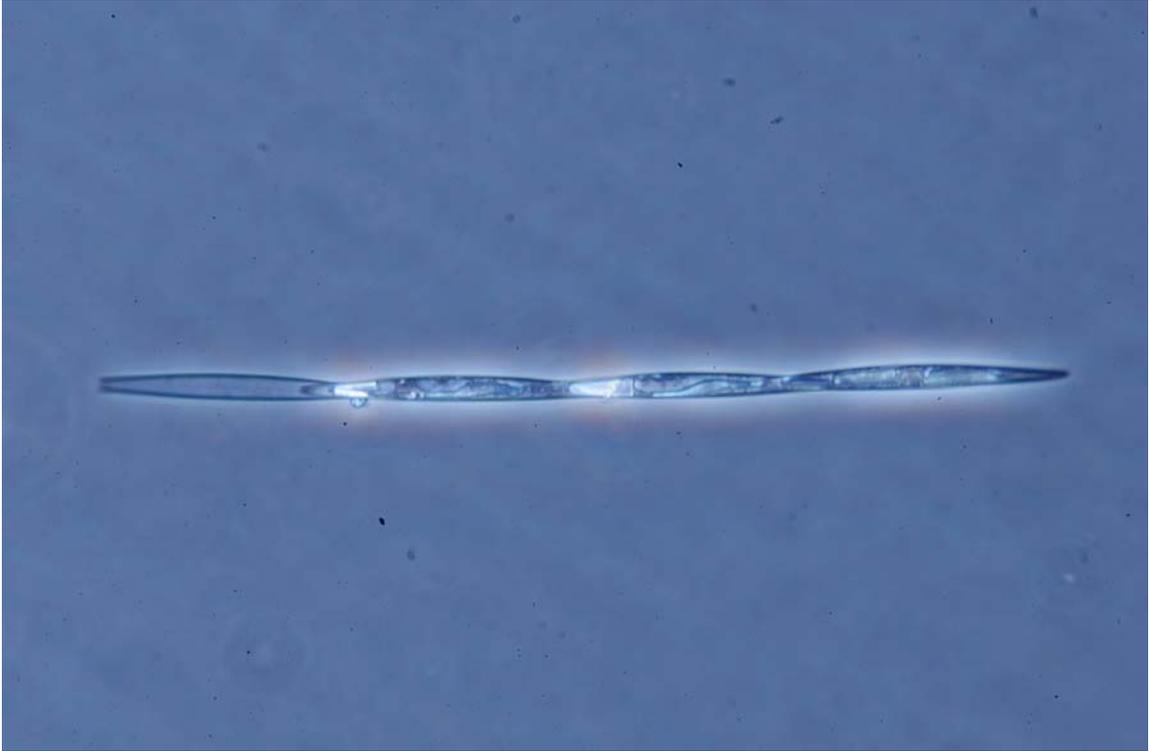
***Pseudo-nitzschia australis* bloom at Scripps Pier, March 13-20, 2006**

On March 13 and March 16, 2006, phytoplankton samples from Scripps Pier showed high numbers of the potentially toxic marine diatom *Pseudo-nitzschia australis*. We observed cell numbers of 7.0×10^4 cells l⁻¹ *Pseudo-nitzschia australis*. Currently we do not have results from the assay for the toxin domoic acid (DA), which is associated with this species. However, one sea lion with possible domoic acid poisoning was rescued in Encinitas on March 18, 2006 from the Seaworld rescue team. On March 9, 2006, a toxic *Pseudo-nitzschia* bloom was reported from San Pedro Channel in Los Angeles, with associated poisoning of 18 sea lions (Schnetzler & Caron, USC). Toxic levels for California are $\sim 5 \times 10^4$ cells l⁻¹ *Pseudo-nitzschia australis*, the concentration at which mussels and fish reach average toxin levels considered unfit for human consumption (Silver, unpubl. data).

The marine diatom *Pseudo-nitzschia* can produce DA, a naturally occurring but rare amino acid toxic to marine mammals and seabirds, as well as to humans. Affected individuals usually experience gastrointestinal disorders and neurological problems. One of the symptoms – amnesia – led to the name of amnesic shellfish poisoning (ASP). Domoic acid was first associated with a phytoplankton source in 1987, when over 100 people were sickened and three died after consuming DA-contaminated mussels from eastern Prince Edward Island, Canada. In California, DA was first recognized in September 1991, in Monterey Bay, after a dramatic seabird kill when the deaths of more than 100 brown pelicans and cormorants were linked to DA poisoning. (Some believe this event was the basis for Alfred Hitchcock's movie *The Birds*). Since then, the toxin has been implicated in other deaths of marine mammals and seabirds between Monterey Bay and San Diego. At least nine species within the marine diatom genus *Pseudo-nitzschia* are now known to produce DA. In California, *Pseudo-nitzschia australis* and *Pseudo-nitzschia multiseriata* are the main toxin producers.

Busse et al. (2006) provided the first confirmation of the presence of domoic acid in phytoplankton and fish in San Diego, California, based on a *Pseudo-nitzschia* bloom in February of 2004. We observed populations of toxic *Pseudo-nitzschia australis* and *Pseudo-nitzschia multiseriata* as high as 7.7×10^4 cells l⁻¹. DA concentrations in the viscera from 4 species of fish obtained at or near the Scripps Pier ranged from low to above the critical level for public safety. DA in tissue from mussels and fish provides evidence for the local transfer of DA from an algal source to higher trophic levels in San Diego coastal waters.

The toxin is mostly concentrated in the viscera of fish. Data to date indicate that eviscerated fish carry less domoic acid than the whole fish, therefore the threat to humans, who generally remove the viscera, may be less than the threat to marine mammals. We will continue to monitor phytoplankton, fish and mussels off Scripps Pier during the next few weeks as part of the harmful algal bloom monitoring program funded by SCCOOS.



Pseudo-nitzschia australis (L. Busse, SIO)

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