

Freshwater Cyanotoxin Monitoring Workshop in Oakland, November 2012
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Harmful algal blooms associated with cyanobacteria have been causing problems in a number of water bodies in California, resulting in drinking water supply concerns, wildlife and domestic animal deaths, shellfish harvesting restrictions, and human health risks. Cyanobacteria (also known as blue-green algae) are photosynthetic bacteria that are found naturally in aquatic ecosystems throughout California. Under certain conditions cyanobacteria can produce toxins (cyanotoxins), which are typically released into the water column upon cell death. Exposure to cyanobacteria toxins can cause several severe symptoms in humans and animals.

A growing body of evidence indicates that cyanobacteria, especially *Microcystis aeruginosa*, are widespread and problematic in freshwater habitats. Cyanobacteria have been the focus of much concern in the Klamath River system. They have also been found in the Sacramento/San Joaquin watershed and Bay-Delta and in a number of lakes throughout California, including Crowley Lake, Clear Lake, Lake Isabella, Big Bear Lake, Lake Elsinore, Pinto Lake, Lake San Marcos (which is in the San Diego region) and others.

Recently, twenty-one sea otter deaths were confirmed from cyanotoxin intoxication. The most likely route of exposure for the sea otters was ingestion of invertebrate food items that picked up the cyanotoxin in coastal waters from an upstream freshwater source. Over a dozen dog deaths have been attributed to cyanobacteria toxicity in California in the last decade. In spite of these well-documented problems, no monitoring efforts are in place to routinely screen for cyanobacteria blooms or associated cyanotoxins in water or organisms in freshwater habitats.

The Bioaccumulation Oversight Group (BOG) of the Surface Water Ambient Monitoring Program (SWAMP) has identified a substantial gap in statewide monitoring efforts related to freshwater cyanotoxins. Therefore, the BOG is planning to host a 2-day workshop on November 28 and 29, 2012. Day one will be open to the public to gather information on the current state of knowledge on freshwater cyanotoxins and the current tools available for monitoring. Day 2 will be by invitation only to strategize an approach to developing a screening study and a monitoring program for freshwater cyanotoxins.

Dr. Lilian Busse, Staff Environmental Scientist at the San Diego Water Board, will attend both days of the workshop. She is on the workshop's organizational committee, and she is the coordinator of the algae program for SWAMP. The San Diego Water Board recently started a study with the Southern California Coastal Water Research Project (SCCWRP) on the occurrence of cyanotoxin in San Diego water resources.