

Multiple Stressors at the Land-Sea Interface: Cyanotoxins at the Land-Sea Interface in the Southern California Bight

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ABSTRACT

Blooms of toxic cyanobacteria in freshwater ecosystems have received considerable attention in recent years, but their occurrence and potential importance at the land-sea interface has not been widely recognized. Here we present the results of a survey of discrete samples conducted in more than fifty brackish water sites along the coastline of southern California. Our objectives were to characterize cyanobacterial community composition and determine if specific groups of cyanotoxins (anatoxins, cylindrospermopsins, microcystins, nodularins, and saxitoxins) were present. We report the identification of numerous potentially harmful taxa and the co-occurrence of multiple toxins, previously undocumented, at several locations. Our findings reveal a potential health concern based on the range of organisms present and the widespread prevalence of recognized toxic compounds. Our results raise concerns for recreation, harvesting of finfish and shellfish, and wildlife and desalination operations, highlighting the need for assessments and implementation of monitoring programs. Such programs appear to be particularly necessary in regions susceptible to urban influence.

Full Text

http://ftp.sccwrp.org/pub/download/DOCUMENTS/JournalArticles/989_MultipleStressorsCyanotoxinsSoCalBight.pdf