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Nota di contenuto	Variability and trends of global sea ice cover and sea level : effects on physicochemical parameters / Josefino C. Comiso -- New techniques in environment monitoring / Begona Espina, Marta Prado, Stephanie S. Vial, Veronica C. Martins, Jose Rivas, and Paulo P. Freitas-- Responses of marine animals to ocean acidification / Mikko Nikinmaa and Katja Anttila -- Alexandrium spp. : genetic and ecological factors influencing saxitoxin production and proliferation / Shauna Murray, Uwe John, and Anke Kremp -- Potential effects of climate change on cyanobacterial toxin production / Susanna A. Wood, Jonathan Puddick, Hugo Borges, Daniel R. Dietrich, and David P. Hamilton-- Impact of global warming on the distribution of marine toxic blooms : an evolving matter / Gustaaf M. Hallegraeff -- Global warming, climate patterns, and toxic cyanobacteria / Elke S. Reichwaldt, Som Cit Sinang, and Anas Ghadouani -- Human impact in Mediterranean coastal ecosystems and climate change : emerging toxins / Aristidis Vlamis and Panagiota Katikou -- Gambierdiscus, the cause of ciguatera fish poisoning : an increased human health threat influenced by climate change / Gurjeet S. Kohli, Hazel Farrell, and Shauna A. Murray -- Control and

management of harmful algal blooms / Dani J. Barrington, Xiao Xi, Liah X. Coggins, and Anas Ghadouani -- Global climate change profile and its possible effects on the reproductive cycle, sex expression, and sex change of shellfish as marine toxin vectors / Joaquin Espinosa, Sara Silva-Salvado, and Oscar Garcia-Martin -- Effects on world food production and security / M. Carmen Louzao, Natalia Vilarino, and Luis M. Botana -- From science to policy : dynamic adaptation of legal regulations on aquatic biotoxins / Natalia Vilarino, M. Carmen Louzao, Maria Fraga, and Luis M. Botana.

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## Sommario/riassunto

In *Climate Change and Marine and Freshwater Toxins* the editors have assembled contributions from a team of international experts to expand the framework for an appropriate assessment of climate change impacts on aquatic toxins. While the production of toxins by microalgae has been known for decades, establishing a factual link supported by scientific evidence is a very complex endeavor. The increasing frequency and distribution of toxic blooms for example continue to raise serious concerns regarding seafood and drinking water safety. This book compiles current evidence on the influence of climate change on the spreading of toxin producing species in aquatic systems. The chemistry and biology of toxin production is revised and an outlook on control and prevention of the toxin's impact on human and animal health is given.

- Compelling quantitative evidence of complex interactions from primary toxin producers and along the food chain.
- Latest advances on prediction and prevention of water toxin threats to human and animal health.
- A must read for insights into aquatic toxins and their modification by climatic conditions.

About the Editors

Luis M. Botana is a full Professor of Pharmacology at the University of Santiago, from 2004-2012 director of the Department of Pharmacology and former Fogarty Fellow at the School of Medicine of the Johns Hopkins University. He has been director of the European Reference Laboratory for Marine Toxins from 2004 to 2009. He is author of 25 international patents, over 300 scientific papers and editor of 10 international books.

M. Carmen Louzaols is a Professor of Pharmacology at the University of Santiago de Compostela since 1997. She was a postdoctoral fellow in the National Institute of Environmental Health Sciences (NIEHS) from 1994 to 1995. She is author of over 70 scientific publications in the field of Toxicology, Biochemistry, and Immunology and 20 reviews and book chapters.

Natalia Vilariño currently teaches Pharmacology to Veterinary Medicine students and participates actively in the research activities of the Department of Pharmacology, University of Santiago de Compostela, since 2005. She was a postdoctoral fellow at the Johns Hopkins Asthma and Allergy Center for 4 years. She is author of over 50 scientific papers in the fields of Toxicology, Analytical Chemistry and Immunology.

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