

ID: W2215056949

TITLE: Marine harmful algal blooms, human health and wellbeing: challenges and opportunities in the 21st century

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ABSTRACT:

Microalgal blooms are a natural part of the seasonal cycle of photosynthetic organisms in marine ecosystems. They are key components of the structure and dynamics of the oceans and thus sustain the benefits that humans obtain from these aquatic environments. However, some microalgal blooms can cause harm to humans and other organisms. These harmful algal blooms (HABs) have direct impacts on human health and negative influences on human wellbeing, mainly through their consequences to coastal ecosystem services (fisheries, tourism and recreation) and other marine organisms and environments. HABs are natural phenomena, but these events can be favoured by anthropogenic pressures in coastal areas. Global warming and associated changes in the oceans could affect HAB occurrences and toxicity as well, although forecasting the possible trends is still speculative and requires intensive multidisciplinary research. At the beginning of the 21st century, with expanding human populations, particularly in coastal and developing countries, mitigating HABs impacts on human health and wellbeing is becoming a more pressing public health need. The available tools to address this global challenge include maintaining intensive, multidisciplinary and collaborative scientific research, and strengthening the coordination with stakeholders, policymakers and the general public. Here we provide an overview of different aspects of the HABs phenomena, an important element of the intrinsic links between oceans and human health and wellbeing.

SOURCE: Journal of the Marine Biological Association of the United Kingdom/Journal of the Marine Biological Association of the UK

PDF URL:

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CITED BY COUNT: 354

PUBLICATION YEAR: 2015

TYPE: article

CONCEPTS: ['Recreation', 'Multidisciplinary approach', 'Algal bloom', 'Harm', 'Marine ecosystem', 'Tourism', 'Environmental planning', 'Human health', 'Ecosystem health', 'Ecosystem', 'Public health', 'Environmental resource management', 'Ecology', 'Geography', 'Ecosystem services', 'Environmental science', 'Biology', 'Political science', 'Environmental health', 'Phytoplankton', 'Medicine', 'Archaeology', 'Nutrient', 'Law', 'Nursing']