Università di Catania

Gea Oliveri Conti

Climate change and water-related health issues

Parte II , Aspetti tossicologici.

CONTATTI:

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UNIMORE

il Gruppo di Lavoro Salute e Ambiente

presenta

Convegno Nazionale

Climate Change & Public Health

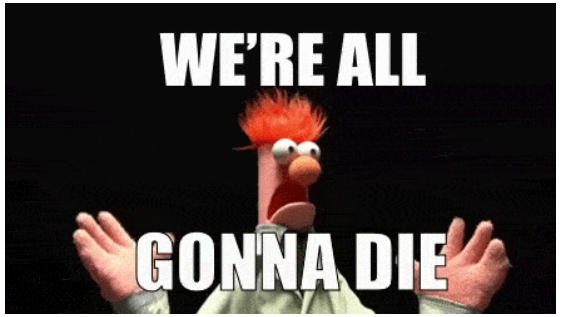
Aula Magna Artigianelli

Università di Modena e Reggio Emilia

Venerdì 9 giugno 2023

ore 9:30-17:30

Viale Timavo 93, 42121 Reggio Emilia



Climate-related drivers of impacts

Warming trend | Extreme temperature | Drying trend | Extreme precipitation | Precipitation | Snow cover | Damaging cyclone | Sea level | Ocean acidification | Carbon dioxide fertilization

Level of risk & potential for adaptation

Potential for additional adaptation to reduce risk

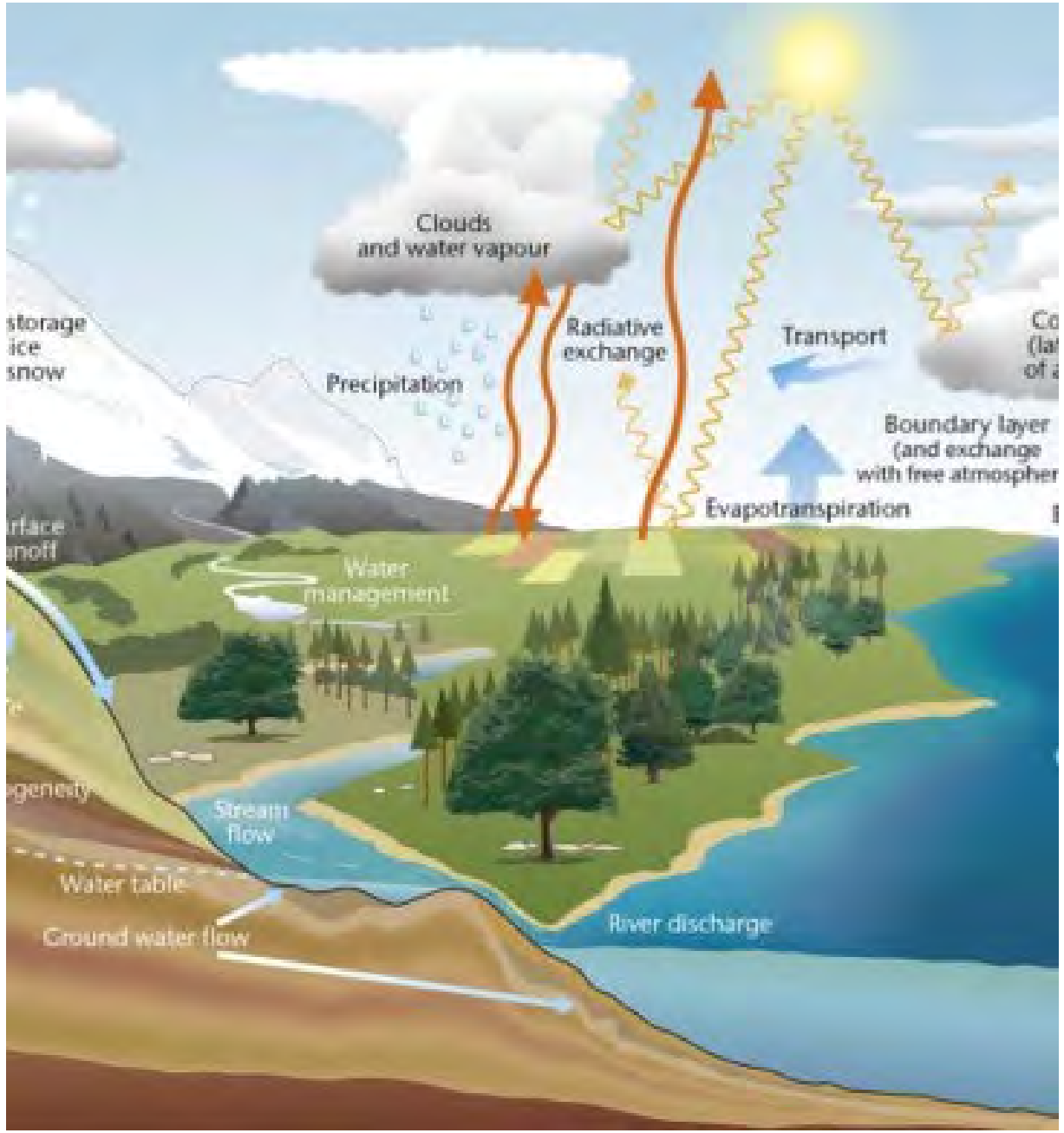
Risk level with **high** adaptation | Risk level with **current** adaptation

Africa

Key risk	Adaptation issues & prospects	Climatic drivers	Timeframe	Risk & potential for adaptation (Very low / Medium / Very high)
Compounded stress on water resources facing significant strain from overexploitation and degradation at present and increased demand in the future, with drought stress exacerbated in drought-prone regions of Africa (*high confidence*) [22.3-4]	• Reducing non-climate stressors on water resources • Strengthening institutional capacities for demand management, groundwater assessment, integrated water-wastewater planning, and integrated land and water governance • Sustainable urban development		Present Near-term (2030-2040) Long-term (2080-2100) 2°C / 4°C	
Reduced crop productivity associated with heat and drought stress, with strong adverse effects on regional, national, and household livelihood and food security, also given increased pest and disease damage and flood impacts on food system infrastructure (*high confidence*) [22.3-4]	• Technological adaptation responses (e.g., stress-tolerant crop varieties, irrigation, enhanced observation systems) • Enhancing smallholder access to credit and other critical production resources; Diversifying livelihoods • Strengthening institutions at local, national, and regional levels to support agriculture (including early warning systems) and gender-oriented policy • Agronomic adaptation responses (e.g., agroforestry, conservation agriculture)		Present Near-term (2030-2040) Long-term (2080-2100) 2°C / 4°C	
Changes in the incidence and geographic range of vector- and water-borne diseases due to changes in the mean and variability of temperature and precipitation, particularly along the edges of their distribution (*medium confidence*) [22.3]	• Achieving development goals, particularly improved access to safe water and improved sanitation, and enhancement of public health functions such as surveillance • Vulnerability mapping and early warning systems • Coordination across sectors • Sustainable urban development		Present Near-term (2030-2040) Long-term (2080-2100) 2°C / 4°C	

Le barre arancioni indicano il livello di rischio rimanente dopo il raggiungimento di un ipotetico stato altamente adattato rappresentando il potenziale di adattamento, ma anche i suoi limiti, poiché rimane un rischio considerevole. Tuttavia, il rischio è generalmente più elevato senza ulteriori adattamenti (barre tratteggiate).


SCIENCE

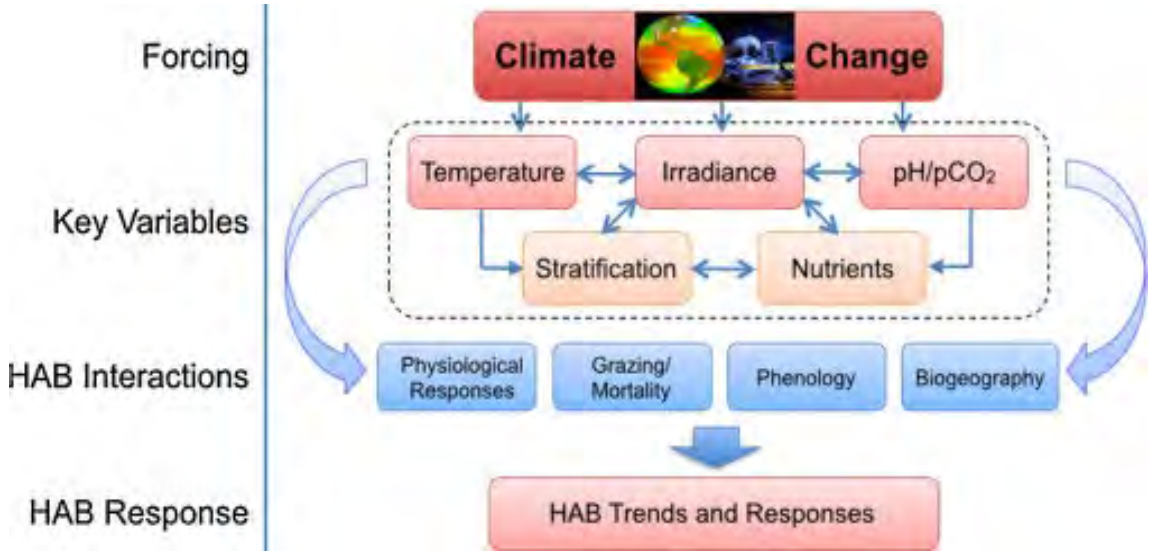


United Nations | Climate Action

– at the center of the climate crisis

nge is exacerbating both water scarcity and water-related hazards (such as floods and droughts), as rising temperat

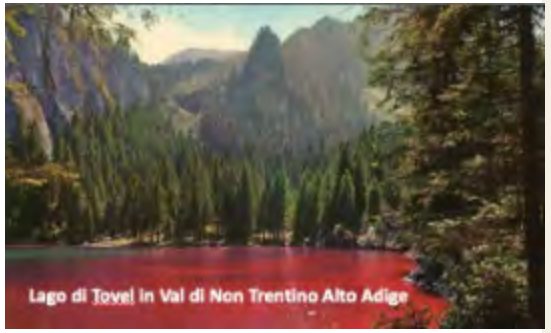
Harmful Algal Bloom



ELSEVIER
Harmful Algae
Volume 49, November 2015, Pages 68-93

Harmful algal blooms and climate change: Learning from the past and present to forecast the future

Mark L. Wells, Vera L. Trainer, Theodore J. Smayda, Bengt S.O. Karlson, Charles G. Trick, Raphael M. Kudela, Akira Ishikawa, Stewart Bernard, Angela Wulff, Donald M. Anderson, William P. Cochlan



Review
Euromediterranean Biomedical Journal
for young doctors
(formerly Capsula Eburnea)

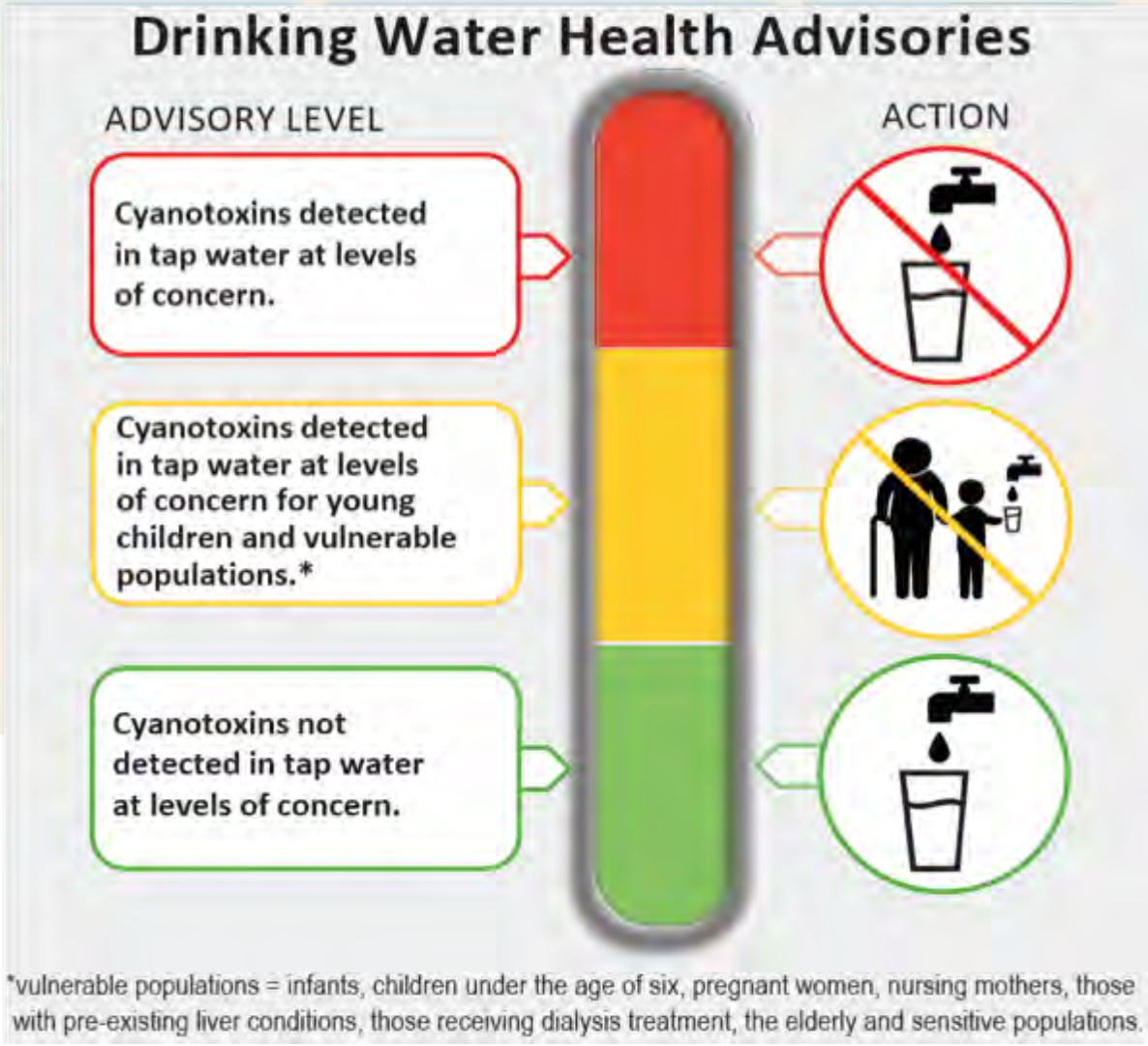
HARMFUL ALGAL BLOOMS IN THE MEDITERRANEAN SEA: EFFECTS ON HUMAN HEALTH.

Margherita Ferrante, Gea Oliveri Conti, Maria Fiore, Venerando Rapisarda, Caterina Ledda

Impacts of Cyanotoxins on Drinking Water Systems

CLEAN WATER ACTION
CLEAN WATER FUND

Increasingly, water systems are monitoring for and addressing cyanotoxins and the algal growth that can cause their formation. Some cyanotoxins are on EPA's list of drinking water contaminants of concern. In 2016, EPA published "Health Advisories" for two cyanotoxins.



*vulnerable populations = infants, children under the age of six, pregnant women, nursing mothers, those with pre-existing liver conditions, those receiving dialysis treatment, the elderly and sensitive populations.

Effetti sul paziente dializzato

The Open Public Health Journal

RESEARCH ARTICLE

The Relevance of Microcystin Monitoring in Dialysis Centers of Sicilians Cities: An Environmental Study

Pietro Zaccaretto[1], Ilea Oliveri Conti[1,*], Maria Fiore[1], M.G. Elfio[2], Sonia Saitta[1], Chiara Copat[1], Antonio Crinnaldi[1] and Margherita Ferrante[1]

[1]Environmental and Food Hygiene Laboratories (L.I.A.A.) of Department "G.F. Ingrassia", Hygiene and Public Health, University of Catania, Catania, Italy
[2]WOM Associazione Scientifica Ospedali & Clinical Risk Manager via Guglielmo Marconi 35 – 00191, Rome, Italy

ELSEVIER

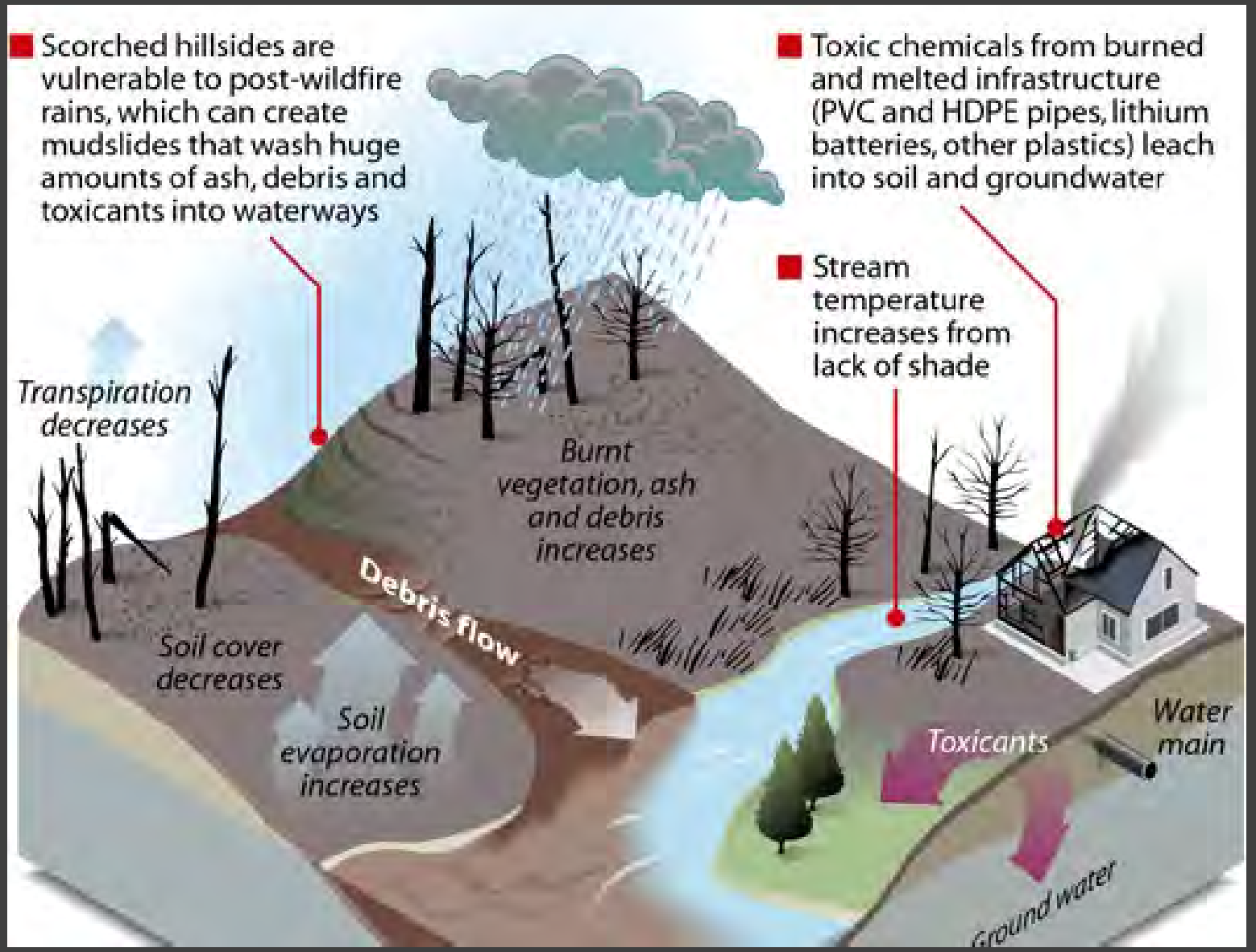
Toxicon

Volume 48, Issue 6, November 2006, Pages 627-640

Microcystin analysis in human sera and liver from human fatalities in Caruaru, Brazil 1996 ☆

Moucun Yuan [a], Wayne W. Carmichael [a], Elizabeth D. Hilborn [b]


WILDFIRE
IMPACT on
DRINKING
WATER QUALITY


Scorched hillsides are vulnerable to post-wildfire rains, which can create mudslides that wash huge amounts of ash, debris and toxicants into waterways
Toxic chemicals from burned and melted infrastructure (PVC and HDPE pipes, lithium batteries, other plastics) leach into soil and groundwater
Stream temperature increases from lack of shade
Transpiration decreases
Burnt vegetation, ash and debris increases
Debris flow
Soil cover decreases
Soil evaporation increases
Toxicants
Water main
Ground water

HEALTH TIPS AFTER FLOODS

After typhoons, heavy rains and flooding, the potential risk of diseases increases, such as **water-borne diseases**, (e.g., typhoid fever, and leptospirosis) and **vector-borne diseases** (e.g., malaria, dengue).

WATER
Make sure drinking water is from a safe source.

FOOD
Cook food well, dispose food waste properly.

PERSONAL HYGIENE
Always wash your hands before eating and after using the toilet.

STAGNANT WATER
Clear stagnant water in and around the house to prevent mosquito breeding sites.

SUPERVISION
Do not allow children to wade in floodwaters to avoid diseases, such as leptospirosis.

CLEAN UP
Clean up your surroundings and destroy mosquito breeding sites.

CONTAMINATED FOOD
Throw out any food that has come into contact with floodwater, and any food that has perished.

Consult a doctor at once if you, or any household member, have any sign or symptom of infection.

This will help prevent the spread of infection especially if you are in the evacuation area.

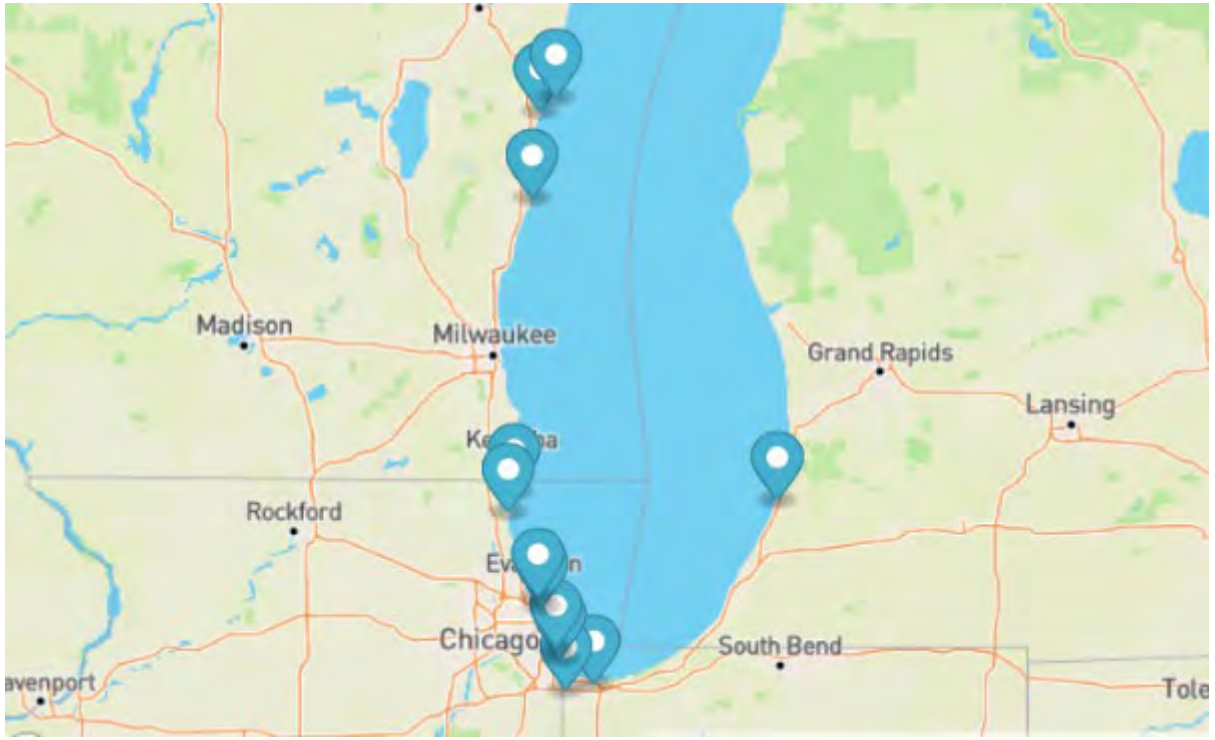
World Health Organization

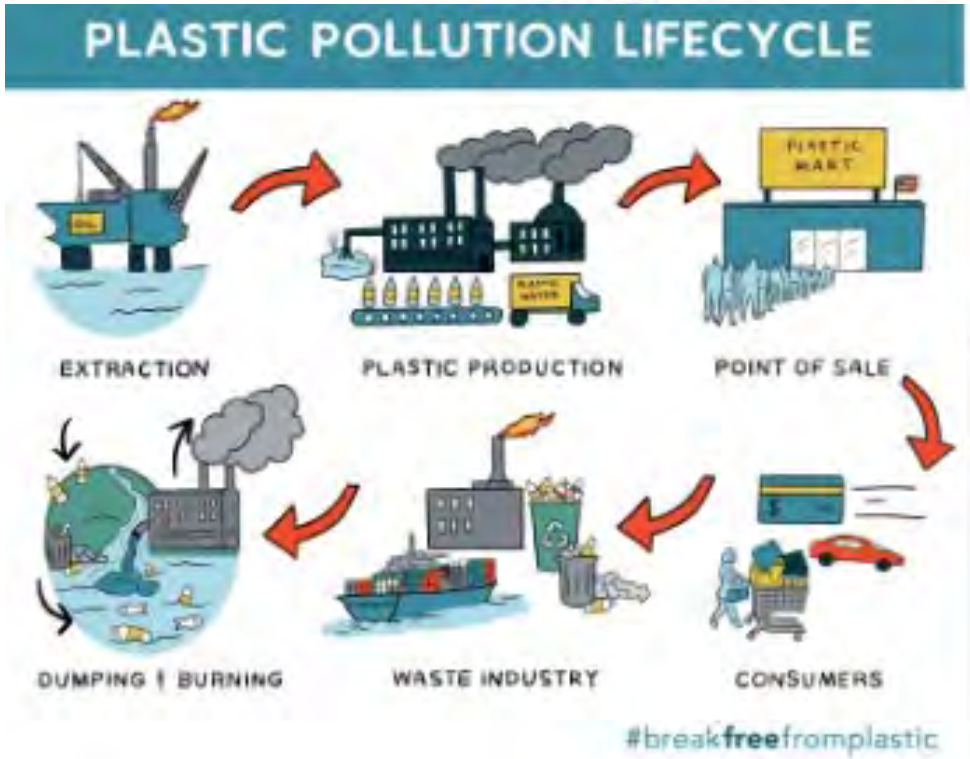
CLIMATE CHANGE June 15, 2022

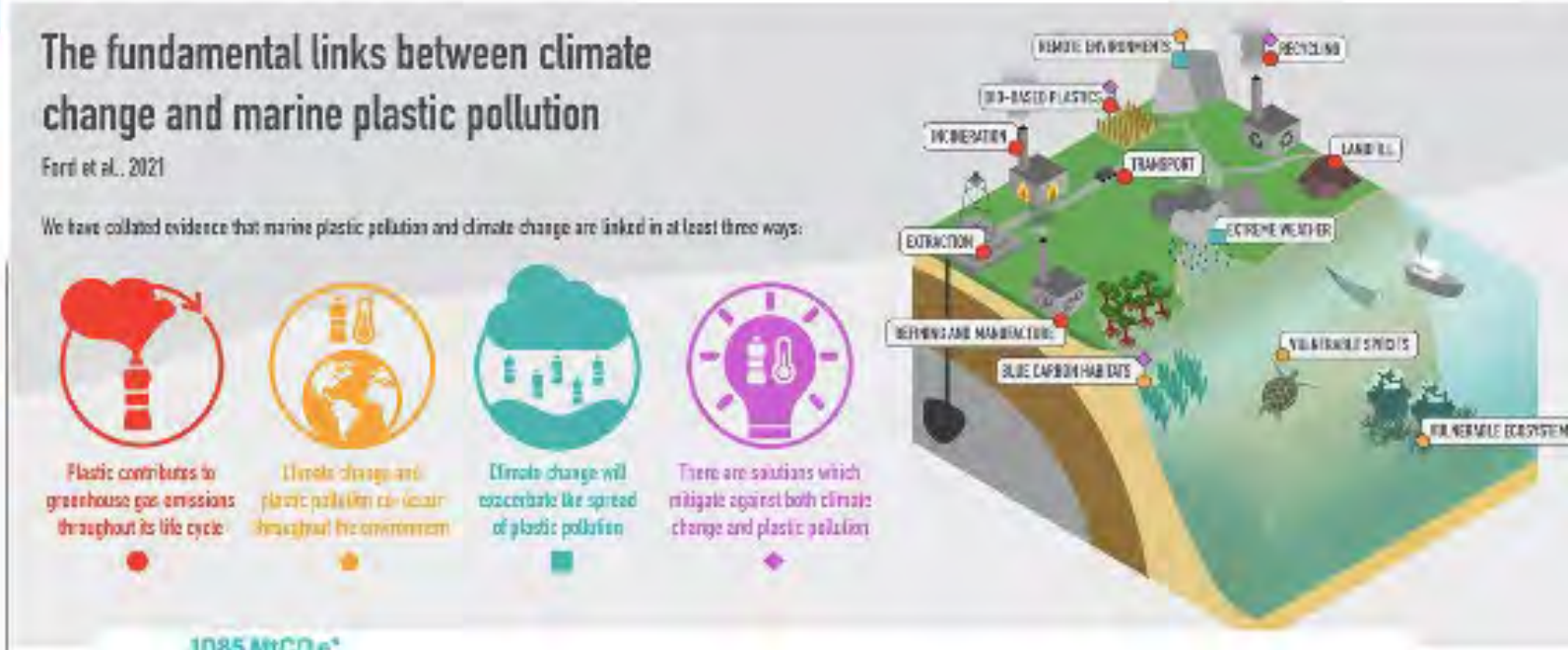
Rising Waters: Climate Change Impacts and Toxic Risks to Lake Michigan's Shoreline Communities

This report identifies twelve areas where high lake levels and strong storms could impact industrial facilities, contaminated sites, and communities along Lake Michigan.

Climate extremes could pose danger of toxic contamination along Lake Michigan shoreline



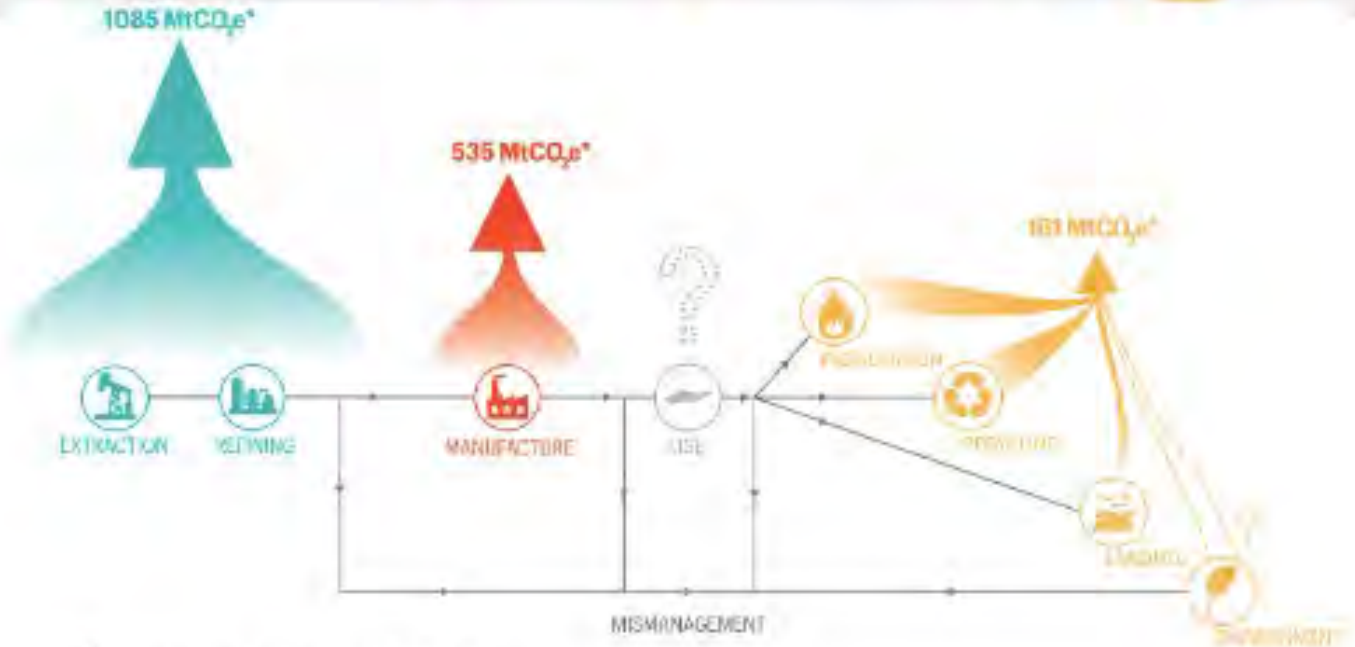




Science of The Total Environment
Volume 806, Part 1, 1 February 2022, 150392

The fundamental links between climate change and marine plastic pollution

Helen V. Ford [a], Nia H. Jones [a], Andrew J. Davies [b], Brendan J. Godley [c], Jenna R. Jambeck [d], Imogen E. Napper [e], Coleen C. Suckling [f], Gareth J. Williams [a], Lucy C. Woodall [g, i], Heather J. Koldewey [f, h]



MICROPLASTICS

Open Access Review

Oncogenic Role of miRNA in Environmental Exposure to Plasticizers: A Systematic Review

by Margherita Ferrante [1,2,*], Antonio Cristaldi [1] and Gea Oliveri Conti [1]

[1] Department of Medical, Surgical Sciences and Advanced Technologies "G.F. Ingrassia", University of Catania, 95123 Catania, Italy

[2] Catania, Messina, Enna Cancer Registry, Via S. Sofia 87, 95123 Catania, Italy

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J. Pers. Med. 2021, 11(6), 500; https://doi.org/10.3390/jpm11060500

Received: 2 April 2021 / Revised: 28 May 2021 / Accepted: 28 May 2021 / Published: 2 June 2021

Environmental Research

Volume 214, Part 4, November 2022, 114088

Environmental microplastics (EMPs) exposure alter the differentiation potential of mesenchymal stromal cells

Hana Najahi [a,b], Nicola Alessio [c], Tiziana Squillaro [c], Gea Oliveri Conti [d], Margherita Ferrante [d], Giovanni Di Bernardo [c], Umberto Galderisi [c], Imed Messaoudi [b], Sergio Minucci [c], Mohamed Banni [a,b]

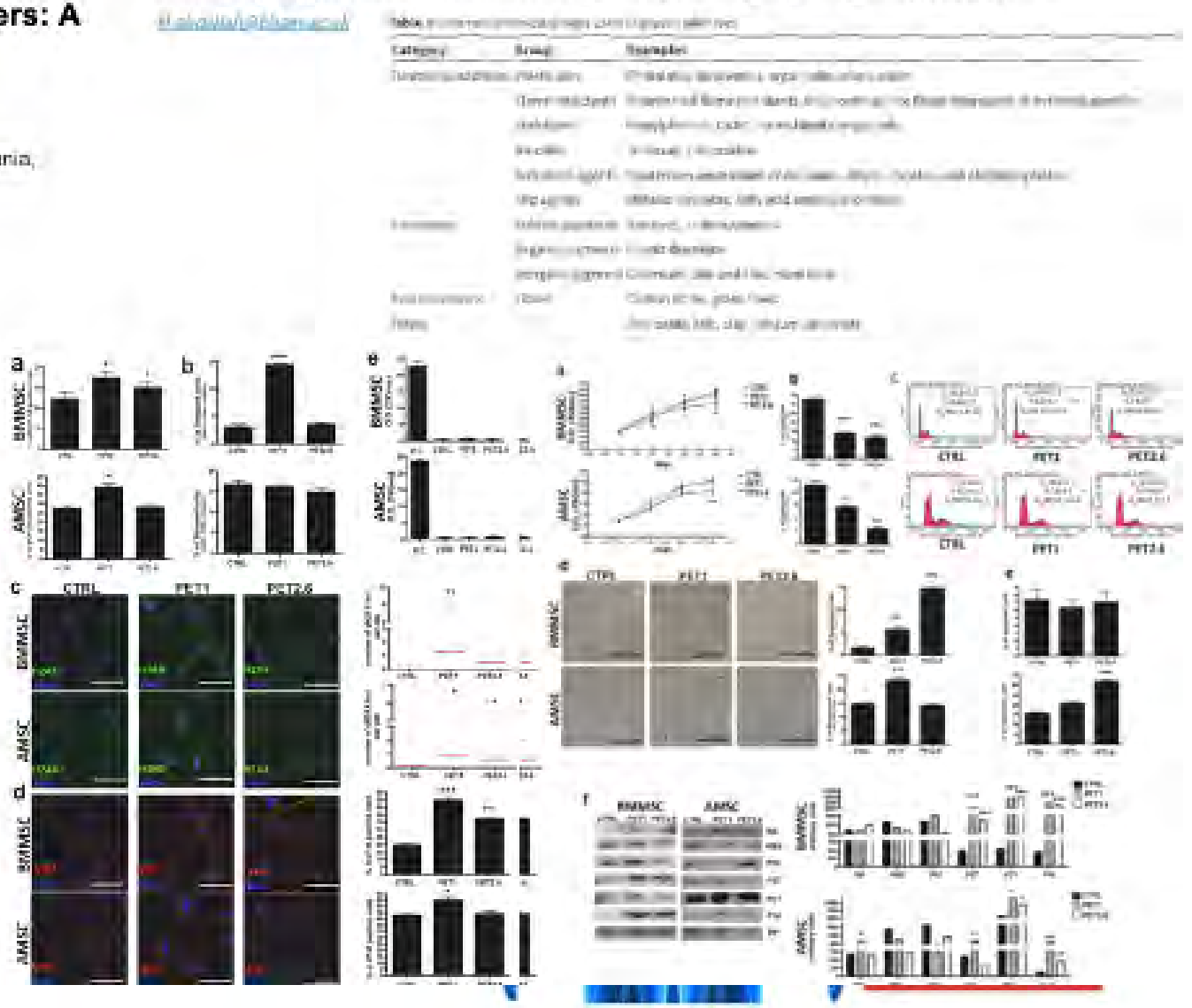
ISPRS Int. J. Geo-Inf. 2022, 11, 113. https://doi.org/10.3390/ijgi11020113 (Critical Review) Advanced Sci. Processing Methods, 2022, 14, 17-31

Occurrence, human exposure, and risk of microplastics in the indoor environment

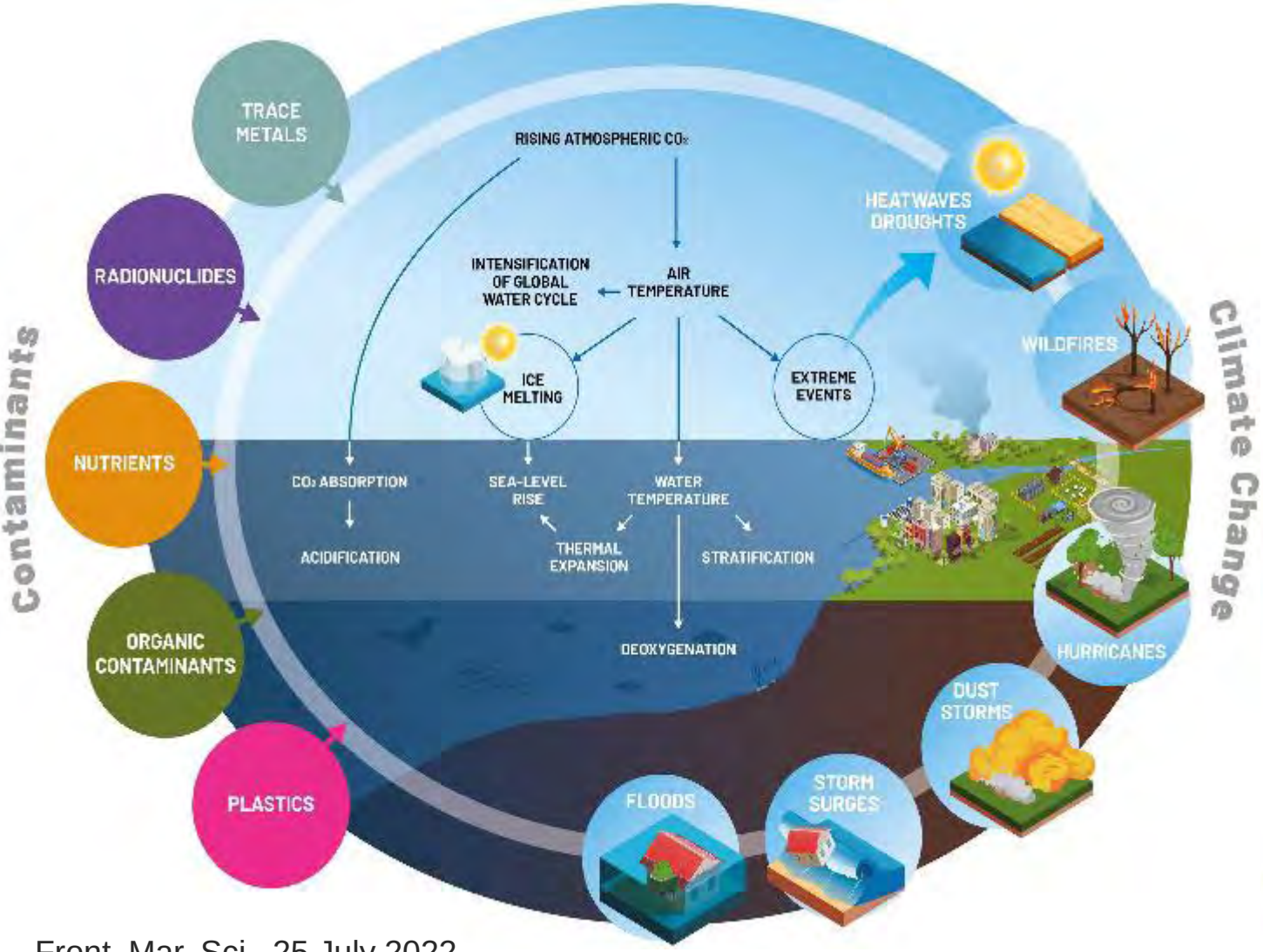
Hassan Khalid Ageel, Stuart Harrad and Mohamed Abou-Elwafa Abdallah *

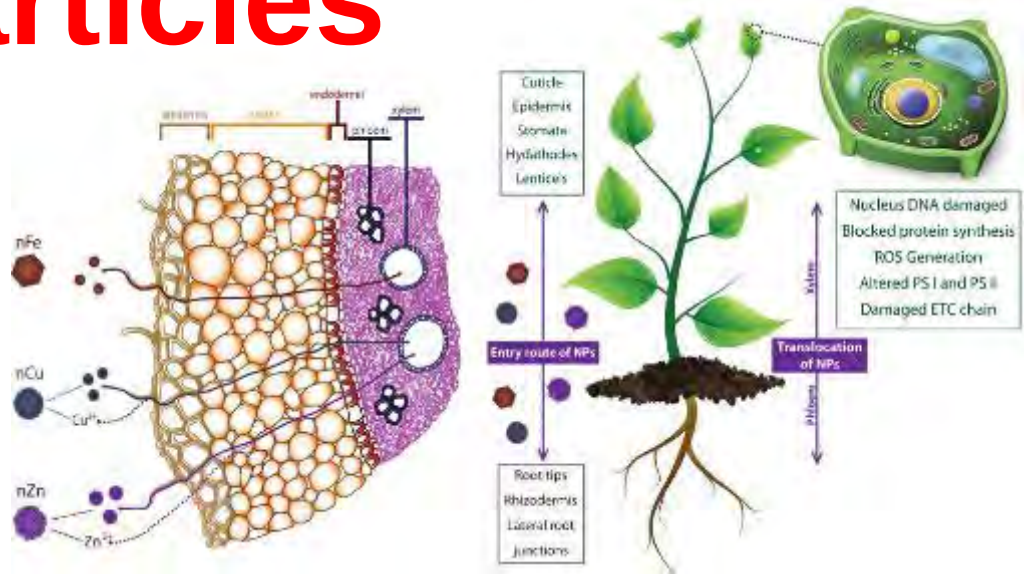
School of Geography, Earth and Environmental Sciences, University of Birmingham, Birmingham B15 2TT, UK; E-mail:

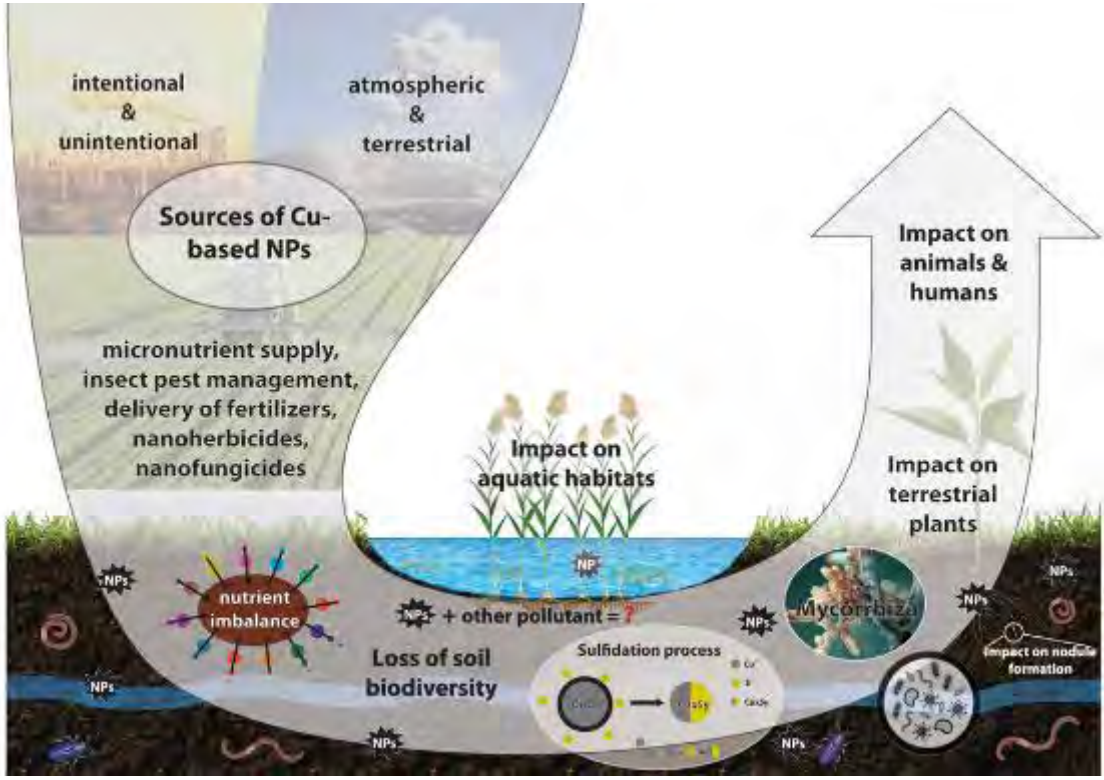
* abdallah@bham.ac.uk



Metal Oxide Nanoparticles





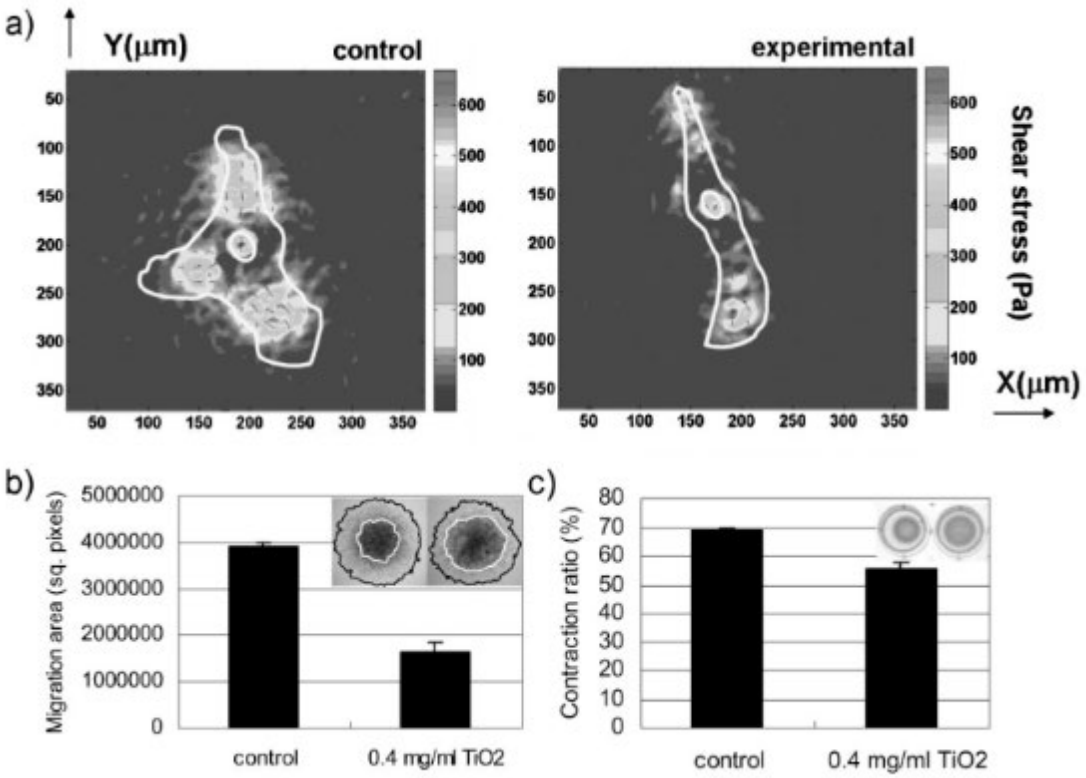


Front. Mar. Sci., 25 July 2022
Sec. Marine Biogeochemistry
Volume 9 - 2022 | https://doi.org/10.3389/fmars.2022.936109

DOI: 10.1002/smll.200800798 • Corpus ID: 12629588

Adverse effects of titanium dioxide nanoparticles on human dermal fibroblasts and how to protect cells.

Z. Pan, Wilson A. Lee, +3 authors, M. Rafailovich • Published 20 February 2009 • Biology • Small



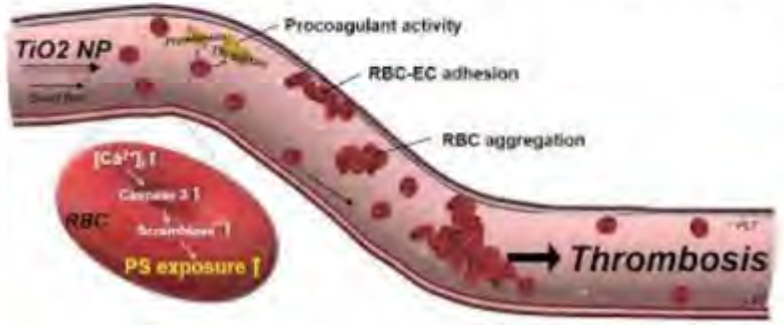
Bian et al. Particle and Fibre Toxicology (2021) 18:28
https://doi.org/10.1186/s12989-021-00422-1

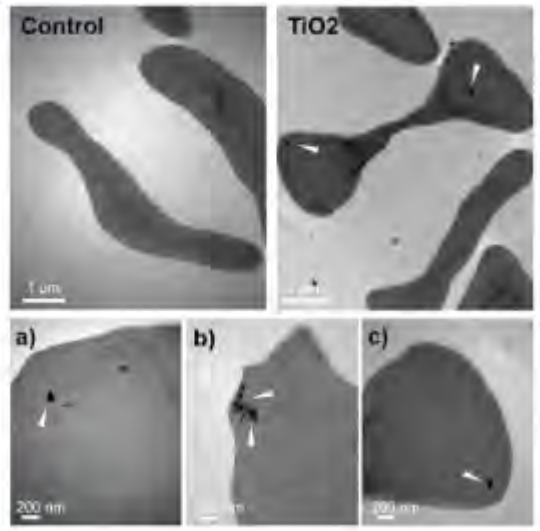
Particle and Fibre Toxicology

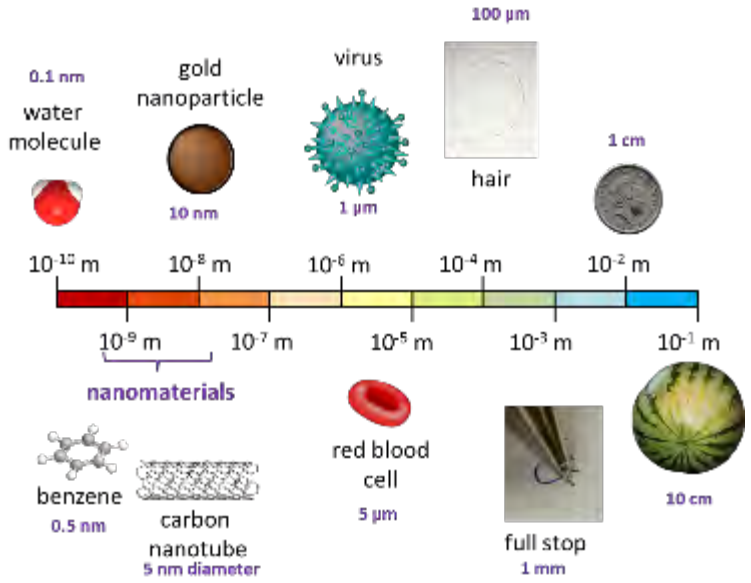
RESEARCH Open Access

Titanium dioxide nanoparticles enhance thrombosis through triggering the phosphatidylserine exposure and procoagulant activation of red blood cells

Yiying Bian[1*], Han-Young Chung[2], Ok-Nam Bae[3], Kyung-Min Lim[4], Jin-Ho Chung[5*] and Jingbo P







GRAZIE PER L'ATTENZIONE

Keep in touch!!!

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