

# Key Greenpeace Works & GESAMP

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GESAMP 45<sup>th</sup> Annual Session

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# Marine plastic & microplastics

- **Sampling & Lab work:** ongoing work to characterize microplastic pollutants using our FT-IR, including through research from Greenpeace vessels (currently in the Pacific and Baltic) and through collaborative research with University of Exeter, Plymouth Marine Laboratory and the British Antarctic Survey, among others
- Method development & optimization for **forensic screening of chemical characterisation of microplastics samples** collected

## Physical and chemical characterisation of sea-surface microplastics collected from coastal and inland waters of Scotland in the summer of 2017

David Santillo, Grant Oakes, Iryna Labunska, Jorge Casado, Kevin Brigden, Kirsten Thompson, Melissa Wang and Paul Johnston

*Greenpeace Research Laboratories<sup>1</sup> Technical Report 01-2018*



UNIVERSITÀ  
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DELLE MARCHE

Dipartimento  
di Scienze  
della Vita  
e dell'Ambiente  
**DISVA**



## “Less Plastic More Mediterranean” 2017 Campaign on board the Rainbow Warrior Greenpeace Ship

### “MICROPLASTICS IN FISH AND INVERTEBRATES ALONG THE TYRRHENIAN COAST”

**Final Report \_ June 2018**

# Marine plastic & microplastics

- Literature Review: plastics in sea and seafood

**Plastics in Seafood – full technical review of the occurrence, fate and effects of microplastics in fish and shellfish**


**Kathryn Miller, David Santillo & Paul Johnston**

**Greenpeace Research Laboratories Technical Report (Review) 05-2016 July 2016**

**Integrated Environmental  
Assessment and Management**

Invited Commentary

**Microplastics as contaminants in commercially important  
seafood species**

David Santillo , Kathryn Miller, Paul Johnston

**THE PRESENCE AND IMPACT OF PLASTIC LITTER  
IN THE MEDITERRANEAN SEA**

**KATHRYN MILLER, DAVID SANTILLO & PAUL JOHNSTON | JUNE 2017**

**GREENPEACE RESEARCH LABORATORIES TECHNICAL REPORT (REVIEW) 05-2017**

# Marine plastic & microplastics

- Literature Review: plastic & chemicals



STOCKHOLM  
CONVENTION

## INFORMATION DOCUMENT

**Working Group on Marine litter plastics and microplastics and its POPs and EDC components: challenges and measures to tackle the issue.**

## Marine litter plastics and microplastics and their toxic chemicals components: the need for urgent preventive measures

Frederic Gallo ✉, Cristina Fossi, Roland Weber ✉ , David Santillo, Joao Sousa, Imogen Ingram,  
Angel Nadal and Dolores Romano

*Environmental Sciences Europe* Bridging Science and Regulation at the Regional and European Level 2018  
30:13

<https://doi.org/10.1186/s12302-018-0139-z> | © The Author(s) 2018

**Received:** 14 September 2017 | **Accepted:** 28 March 2018 | **Published:** 18 April 2018

# Marine plastic & microplastics

- LC-LP & IMO: Greenpeace played a role in raising the issue of plastics in waste materials that may be dumped at sea (dredged materials and sewage sludge, in particular) at the LC-LP →

2016

**Governing bodies of the London Convention and Protocol encourage action to combat marine litter**

The governing bodies of the London Convention and Protocol, at their joint session held at the Headquarters of the International Maritime Organization, London, from 19 to 23 September 2016, adopted the following statement to encourage action to combat litter:

**Recommendation to Encourage Action to Combat Marine Litter**

Importance of action upstream



REVIEW OF THE CURRENT STATE OF KNOWLEDGE REGARDING  
**MARINE LITTER IN  
WASTES DUMPED AT SEA**  
UNDER THE LONDON CONVENTION AND PROTOCOL

Commissioned by LC/LP & IMO

- 2017: a statement of concern at the Scientific Groups this year on the impacts of dumping at sea of fibre-reinforced plastic (fibreglass) vessels (to be published once approved by the governing bodies of the LC-LP in November)

# Marine plastic & microplastics

- 2017: UNEA 3
- 2018: 1<sup>st</sup> ad hoc open ended expert group meeting, with peer NGO colleagues
- 2017 Basel + Stockholm Convention
- 2018 Basel OEWG
- GESAMP
- Mindset work
- Corporate work

# Geoengineering

- > 20 years
- E.g. 1999: our 1<sup>st</sup> paper to the LC-LP raising concerns about ocean fertilization was presented to the Scientific Groups of LC/LP

## **A scientific critique of oceanic iron fertilization as a climate change mitigation strategy**

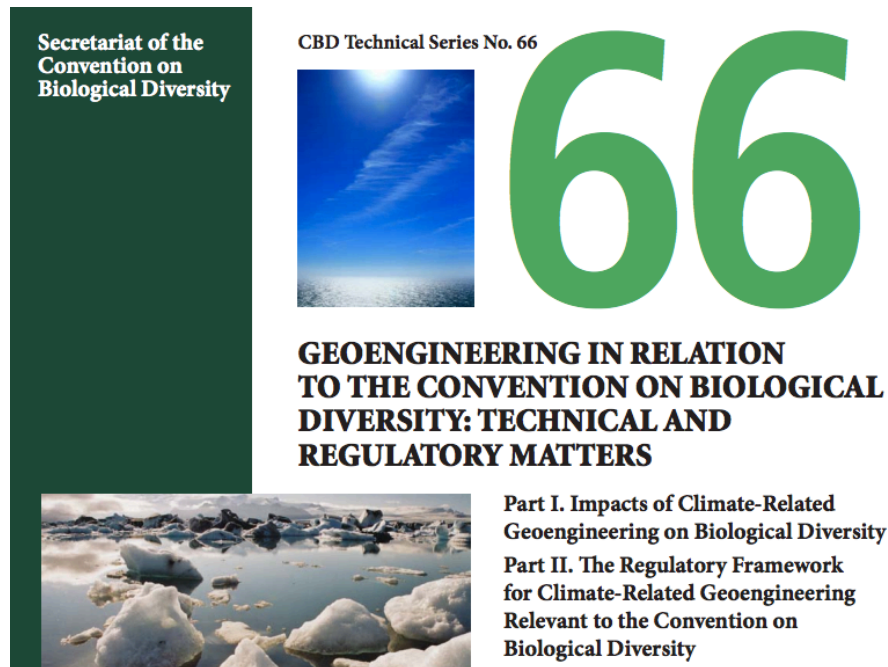
Michelle Allsopp, David Santillo and Paul Johnston  
Greenpeace Research Laboratories Technical Note 07/2007  
September 2007

- just before a key international conference on the issue organised at the Woods Hole Oceanographic Institute.
- 2007: flag concerns to the LC-LP about potential commercial ocean fertilisation activities, leading eventually to what is still the only legal measure to introduce a prohibition on a geoengineering activity



# Geoengineering

- Contribution to Convention on Biological Diversity (CBD), including as a co-author of its report on potential impacts on biodiversity from 2012.



- 2016 RSC Bulletin, sets out our policy position on the need for governance, and other work beyond

## Article

### How can geoengineering research be regulated?

David Santillo (Greenpeace Research Laboratories, [d.santillo@exeter.ac.uk](mailto:d.santillo@exeter.ac.uk)) and Paul Johnston (Greenpeace Research Laboratories)



# Seabed Mining

- > 20 years
- Reports: 2000 + 2013 + 2018 + under review – policy options
- ISA
- LC-LP e.g. 2 informal working group discussion to strengthen accessibility of LC-LP expertise to ISA.

## REVIEW ARTICLE

Front. Mar. Sci., 10 January 2018 | <https://doi.org/10.3389/fmars.2017.00418>

**An Overview of Seabed Mining Including the Current State of Development, Environmental Impacts, and Knowledge Gaps**



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# Sea Disposal of Mine Tailings from Land

- We raised it at the LC-LP around 15 years ago in connection with the dumping of wastes from the Lihir gold mine in Papua New Guinea, and then expanded upon with a wider geographical survey of the practice in a paper presented to the Scientific Groups to the LC-LP in 2008/9. →→



**OSPAR**

**Study commissioned by the Office for the London Convention and Protocol and Ocean Affairs, IMO, in collaboration with the United Nations Environment Programme (UNEP) Global Programme of Action**

- + a working group on the same issue under the LC-LP for a few years →→
- The work being initiated in GESAMP.

# Trends in Global Pollution in Coastal Environment



**OSPAR**



Barcelona  
Convention

Baltic Marine Environment Protection  
Commission/Helsinki Commission

Land-based Sources of Marine Pollution + Coastal Water Pollution

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e.g. papers to the Scientific Groups  
analysing trends in quantities of wastes  
dumped at sea + our ongoing participation  
in the Correspondence Group on  
Assessment of Dumping Reports

# GESAMP scoping activities: impacts of residues of chronic oil spill

- Our colleague Paul Johnston was part of the GESAMP working group in the past on sources of oil to the marine environment, and one of the co-authors of the final report.

# GESAMP scoping activities: emerging pollutants in pharmaceutical waste & other novel chemicals

- chemical analytical laboratory
- our environmental forensics techniques
- characterisation of complex waste inputs to the environment, including novel chemicals
- SAICM