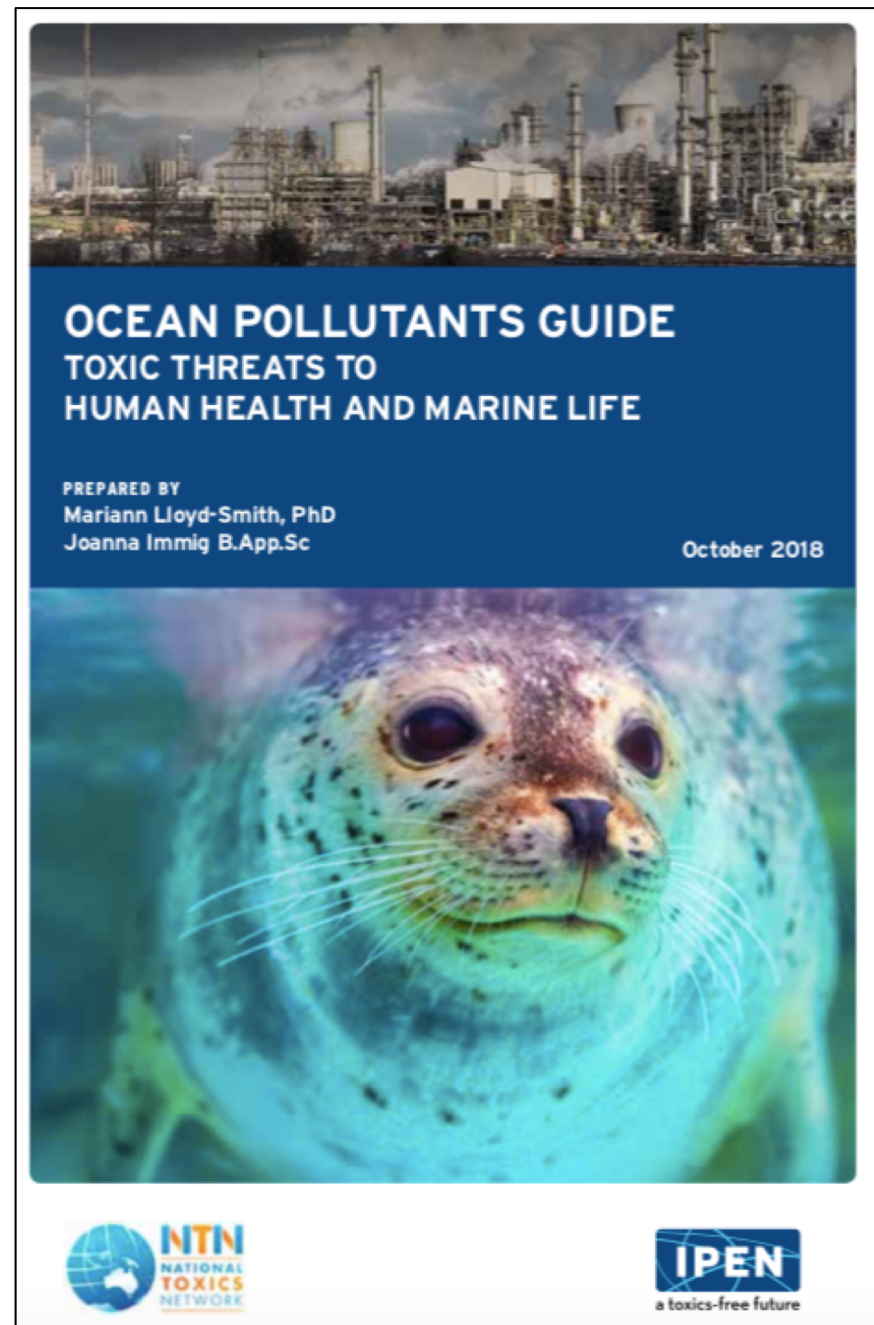


Plastics' Toxic Liabilities: Invisible Ocean Pollutants & Additives to Plastic

Björn Beeler

IPEN International Coordinator

www.ipen.org | ipen@ipen.org | @ToxicsFree



IPEN: Global Network & Mission

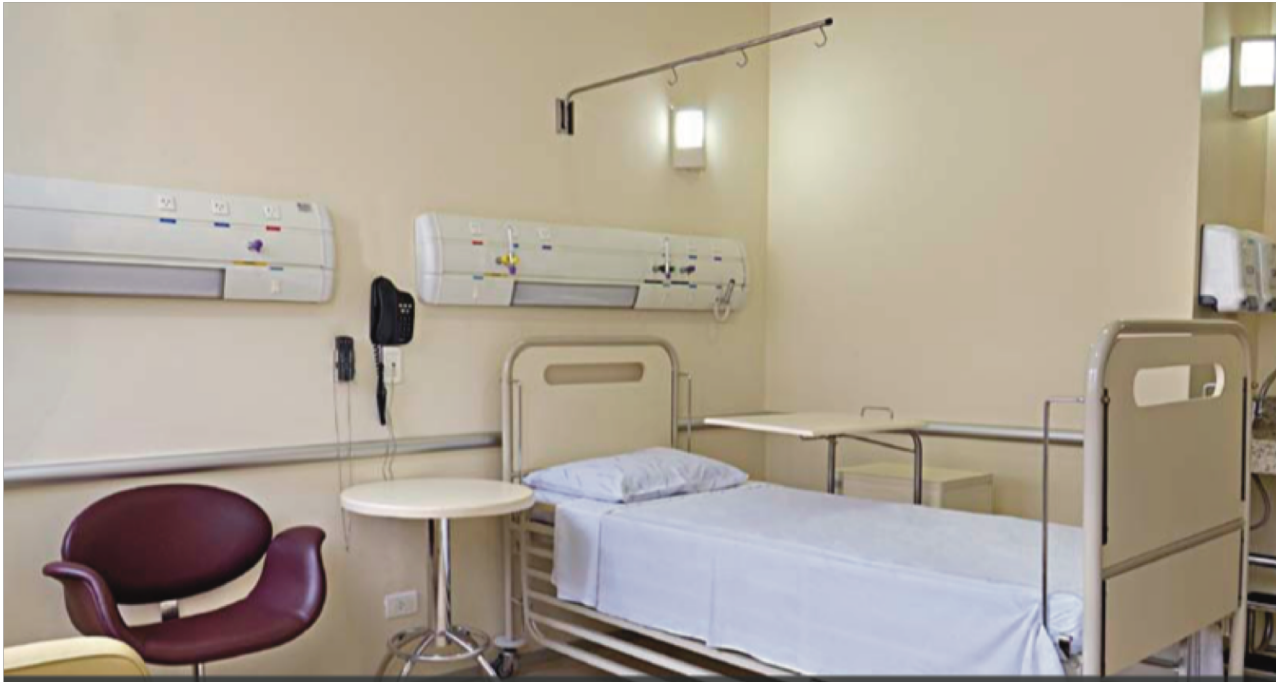
A TOXICS-FREE FUTURE FOR ALL

**Working to eliminate harm to human health
& the environment from toxic chemicals**



Plastics' Toxic Liabilities

Toxic Additives can Harm Human Health & Marine-Life



Considering how many cancers involve hormones, such as prostate, breast, uterine, and other reproductive tissues, it may not be surprising that estrogenic and other hormone-active chemicals such as BPA, phthalates and some pesticides, are thought to contribute to carcinogenic risk.



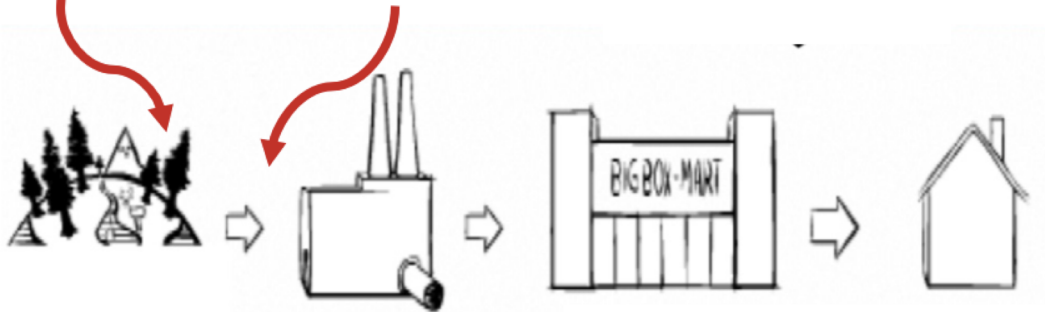
Plastics' Toxic Liabilities:

Toxics in = Toxics out



Plastics' Toxic Liabilities

1. Toxic Additives (EDCs, POPs & chemicals of concern)



Additives:

POPs: DecaBDE & SCCP Flame Retardants
Listed to the Stockholm Convention (2017)

EDCs: BPA is found in polycarbonate plastics and epoxy resins
Phthalate plasticizers used to soften polyvinyl chloride (PVCs)
No global regulation, limited national regulations in specific countries



TOXIC INDUSTRIAL CHEMICAL
RECOMMENDED FOR GLOBAL
PROHIBITION CONTAMINATES
CHILDREN'S TOYS



Pamela Miller
and Joseph DiGangi,
Ph.D.

Updated
November 2017

INTRODUCTION TO ENDOCRINE DISRUPTING CHEMICALS (EDCs)

A GUIDE FOR PUBLIC INTEREST ORGANIZATIONS
AND POLICY-MAKERS



Andrea C. Gore, PhD
David Crews, PhD
Lorella L. Doan, PhD
Michele La Merrill, PhD, MPH
Heather Patisaul, PhD
Ami Zota, ScD, MS

December 2014

Plastics' Toxic Liabilities

Contaminating Recycling



POPS RECYCLING CONTAMINATES CHILDREN'S TOYS WITH TOXIC FLAME RETARDANTS

Joseph DiGangi, Ph.D.
Jitka Strakova
Lee Bell
Updated November 2017

ARNIKA
IPEN
a toxics-free future

17 Countries (2017)

Jitka Straková · Joseph DiGangi · Génon K. Jensen

TOXIOIXOT LOOPHOLE
Recycling Hazardous Waste into New Products

Amnika 2018

ARNIKA **IPEN**

EU Countries (2018)



Plastics' Toxic Liabilities

Discovering Dioxin in Recycled Plastic Products

Argentina

Czech Rep., Germany & Portugal

India

Nigeria

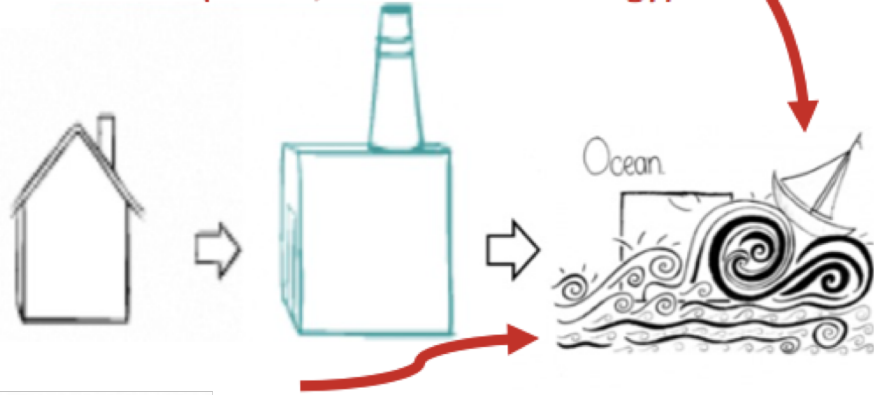


Plastics' Toxic Liabilities

Burning & Dumping Liabilities

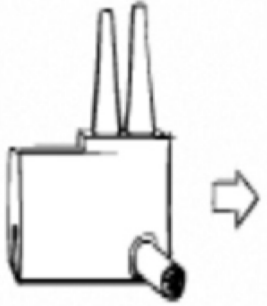
4. Toxic Release

(dioxin, via waste to energy)



3. Toxic Dumping

(Waterways, dumping, "leakage" & run-off)



Plastics' Toxic Liabilities



5. Toxic Magnification (Microplastics)



Contents lists available at [ScienceDirect](#)

Marine Environmental Research

journal homepage: www.elsevier.com/locate/marenvrev



Plastics and microplastics in the oceans: From emerging pollutants to emerged threat

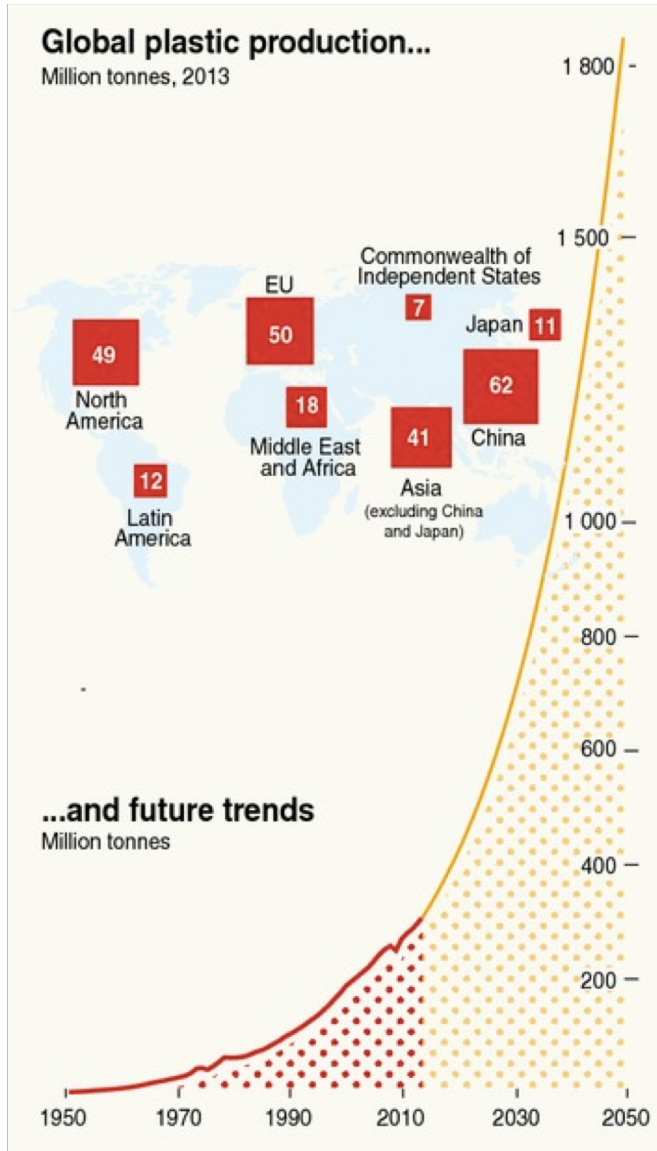
Carlo Giacomo Avio, Stefania Gorbi, Francesco Regoli*

Dipartimento di Scienze della Vita e dell'Ambiente (DiSVA), Università Politecnica delle Marche, Ancona, Italy

*“Different polymers, like polyvinyl chloride, polyethylene, polypropylene, polystyrene, were shown to have a **high sorption capacity** for **DDTs**, polycyclic aromatic hydrocarbons (PAHs)...*

***POPs** (PCBs, organo-halogenated pesticides, nonylphenol, PAHs and dioxins) have been detected in plastic pellets stranded on different beaches around the world.”*

So much more toxic liabilities to come...

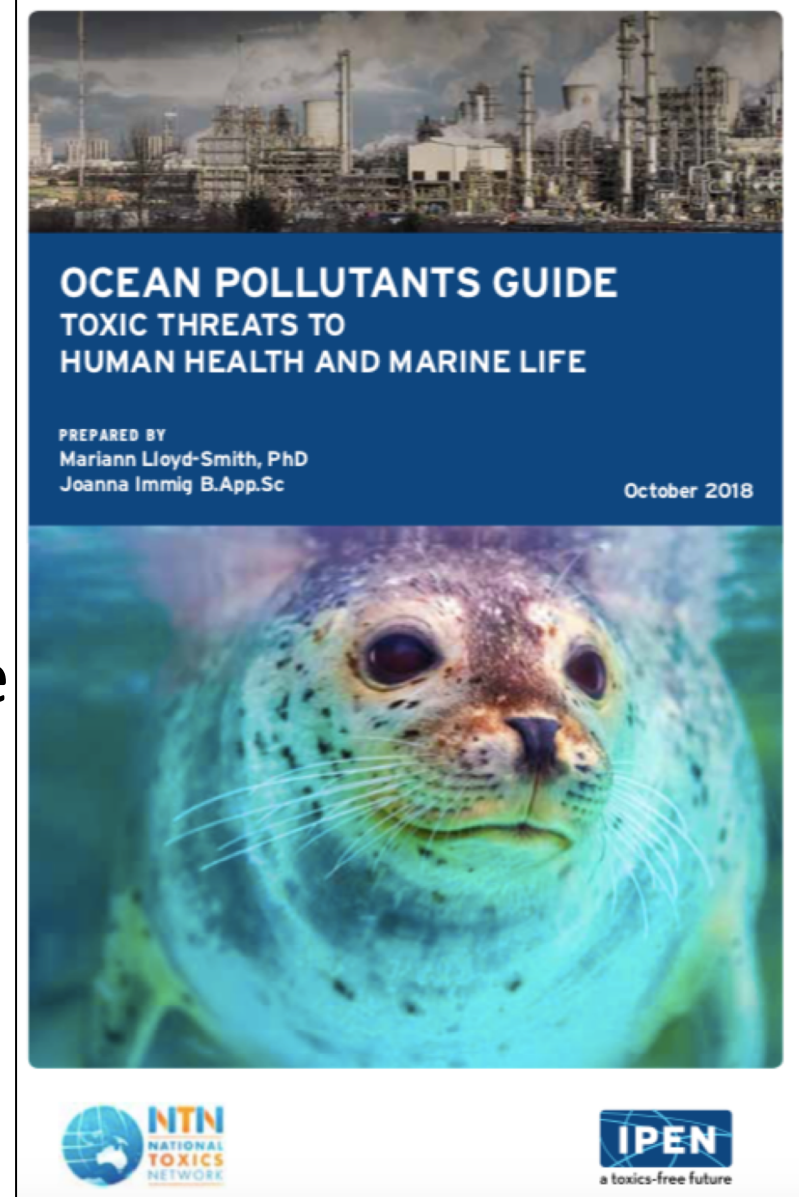


UNEP. Marine plastic debris and microplastics—
Global lessons and research to inspire action and
guide policy change

Thank You

Info on Twitter: @ToxicsFree

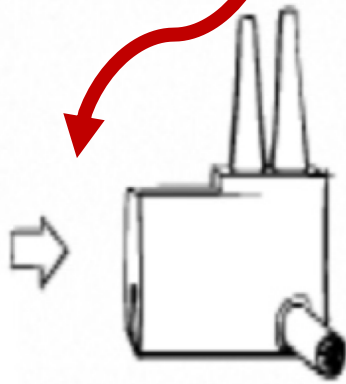
Reports: www.ipen.org



Plastics' Toxic Liabilities: Additives & Releases from Plastics

1. Toxic Additives

(EDCs, POPs & chemicals of concern)



2. Toxic Recycling

(recycling plastics with toxic additives)



4. Toxic Release

(dioxin, via waste to energy)

3. Toxic Dumping

(Waterways, dumping, "leakage" & run-off)

5. Toxic Magnification

(Marine litter & Microplastics)

Plastics' Toxic Liabilities:

Plastics' Private Asset

Plastics' Public Liability

