

# **International Actions to Eliminate the World's Most Dangerous Chemicals: Recommendations of International Panel of Experts on Persistent Organic Pollutants (POPs)**

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# Global Transport of Persistent Chemicals into the Arctic

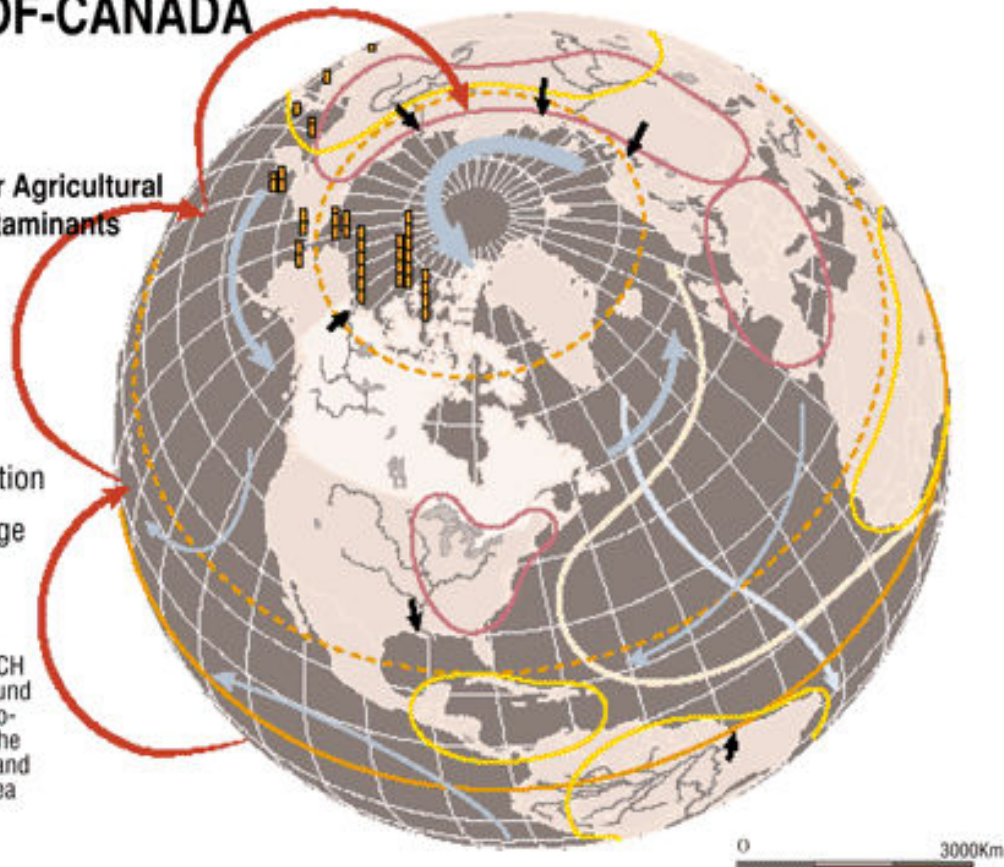
## THE GRASSHOPPER EFFECT AND OUT-OF-CANADA SOURCES

Source Regions for Agricultural and Industrial Contaminants

- Agricultural
- Industrial
- Dominant Air Currents
- Atlantic Water Circulation
- River discharge

Alpha-HCH  
in seawater  
ng/litre

Concentrations of one HCH compound have been found to increase from south-to-north along a line from the Java Sea (off Indonesia and China) to the Beaufort Sea (AMAP, 1997).





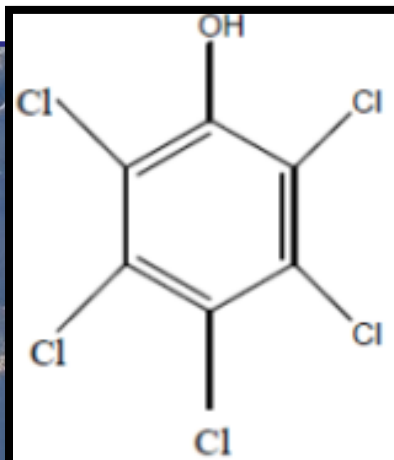
# The Language of the Stockholm Convention

- “Aware of the health concerns...in particular **impacts upon women and children** and, through them, upon future generations.”
- “Conscious of the need for **global action**...”
- “Acknowledging that **precaution** underlies the concerns of all the Parties and is embedded within this Convention...”
- “Determined to **protect human health and the environment**...”
- “Acknowledging that the **Arctic ecosystems and Indigenous communities** are particularly at risk...”



# Pentachlorophenol (PCP)

- Pesticide primarily used now for wood treatment of utility poles in U.S. and Canada
- Dow and Monsanto first introduced PCP in 1936
- KMG Chemicals is currently the only producer of wood-treating PCP in the world with production in Matamoros, Mexico and formulation in Tuscaloosa, Alabama
- Banned in at least 26 countries
- Proposed as a POPs candidate by the European Commission in 2011
- *“PCP its salts and esters are likely, as a result of their long-range environmental transport, to lead to significant adverse human health and environmental effects such that global action is warranted (Decision POPRC-9/3).”*





# Pentachlorophenol—a global contaminant affecting the Arctic

- PCP detected in air, water, and soil throughout the world, as well as in the blood, urine, seminal fluid, breast milk and adipose tissue of humans (Zheng et al. 2011)
- PCP was one of the dominant organic contaminants within a representative population of women in Norway (Rylander, 2012)
- PCP in blood plasma of the Indigenous Chukotka people of the Russian Arctic. The median PCP level was measured at 642 pg g<sup>-1</sup> plasma (Sandanger et al. 2004)
- elevated concentrations of PCP are detected in humans throughout the Arctic (AMAP, 2014)
- PCP is the dominant chlorinated phenolic compound in Inuit blood samples from Nunavik, Arctic Canada. The researchers noted that PCP may supercede HO-PCBs as the chlorinated compound of highest concern in humans (Sandau et al. 2002)

# Pentachlorophenol and health

- Exposure to PCP is associated with reproductive and developmental toxicities, immunodeficiency, interference with thyroid and reproductive hormones, and increased risk of non-Hodgkin lymphoma.
- Neurodevelopmental effects in children — prenatal exposure to PCP correlates with worse coordination, less sensory integrity, worse attention, and worse visuomotor integration in children at school age. PCP correlated with lower levels of thyroid hormone. Based on their results, the researchers concluded that *“unrelenting efforts should be made to find safe alternatives for these compounds (Roze et al. 2009).”*
- U.S. National Toxicology Program September 2014 Report on Carcinogens, recently re-classified PCP “as reasonably anticipated to be a human carcinogen.”



# Poison Poles

- Significant source of dioxins and furans
- Contaminates soils and groundwater
- Case study—Long Island, NY found levels of PCP up to 250,000 micrograms per kilogram
- Children not protected
- Hazardous waste



# Safe, non-chemical alternatives readily available

- naturally resistant hardwoods, concrete, steel, fiberglass reinforced composite, underground lines
- non-chemical alternatives to utility poles require less maintenance and have a longer service life





# Indigenous and NGO Groups Have Vital Role in Stockholm Convention





# Indigenous Delegation to the Stockholm Convention Conference of Parties—Geneva





# Resources

- Alaska Community Action on Toxics  
[www.akaction.org](http://www.akaction.org)
- International POPs Elimination Network  
[www.ipen.org](http://www.ipen.org)
- Inuit Circumpolar Council  
[www.inuitcircumpolar.com](http://www.inuitcircumpolar.com)
- Safer Chemicals Healthy Families  
[www.saferchemicals.org](http://www.saferchemicals.org)
- Center for International Law [www.ciel.org](http://www.ciel.org)
- Stockholm Convention [www.pops.int](http://www.pops.int)



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