

Alaska Collaborative on Health and the
Environment
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Stockholm Convention – Adding new POPs
POPs Review Committee, October 2014



a toxics-free future



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2. Stockholm Convention on Persistent Organic Pollutants 2001 *'poisons without passports'*



- organic (carbon based)
- persistent, resisting degradation in the environment
- bioaccumulate in living organisms
- transboundary movement / vast distances on air & water
- toxic to humans & environment

'Dirty Dozen'

Organochlorine pesticides:

DDT, endrin, dieldrin, aldrin, chlordane, toxaphene, heptachlor, mirex, hexachlorobenzene (HCB)

Industrial chemicals & by-products:

PCBs, HCB, dioxins & furans



3. A living convention - adding new POPs -

Article 8 Annexes D, E, F

- rules to identify & list additional POPs
- *'precautionary approach'*

COP1 2005 established POPs Review Committee

- Africa 8, AP 8, CEE 3, GRULAG 5, WEOG 7

POPRC assess new POPs & recommend listing :

Annex A - eliminate production, trade, use & emissions,
export / import for ES destruction, time limited use exemptions

Annex B - control & manage ongoing restricted use

Annex C - reduce & eliminate byproduct releases





4. What has been achieved in 10 years of POPRC ? - ridding the world of the 'worst of the worst'

Annex A elimination :

Pentabromodiphenyl ether (Penta BDE) - flame retardant - neuro/developmental & reproductive toxicity

Octabromodiphenyl ether (OctaBDE) - fetotoxic, immunotoxic & neurotoxic

Pentachlorobenzene - dyes & pesticide - toxic to kidneys, aquatic toxicity

Hexabromobiphenyl (HBB)- fire retardant - hepatotoxic, endocrine disruption

Hexabromocyclododecane (HBCDD)- polystyrene plastics & textiles
- aquatic toxicity, affects thyroid, fertility & brain function

Lindane, Alpha & Beta hexachlorocyclohexane - insecticide & byproducts - hepatotoxic, immunotoxic, repro/developmental & neurotoxic, carcinogen

Chlordecone - pesticide - neuro & reprotoxic, immunotoxic

Endosulfan - insecticide - neurotoxic, impaired development

Annex B restriction:

Perfluorooctane sulfonate (PFOS)



5. Three Stage Assessment Process

Only Countries can nominate but all can participate

1. POPs Screening Criteria - Annex D

Chemical identity, persistence, bioaccumulation, long range transport, adverse effects

2. Risk Profile - Annex E

'likely as a result of its long range transport, to lead to significant adverse human health and/or environmental effects, such that global action is warranted'

'Lack of full scientific certainty shall not prevent the proposal from proceeding'

3. Risk Management Evaluation - Annex F

Socio-Economic Considerations - alternatives costs, uses with no feasible alternatives, phase in times, propose exemptions



6. COP considers POPRC recommendations

Final decision by COP

Agree by consensus - *'take into account any scientific uncertainty, and in a precautionary manner, decide whether to list the chemical, and specify the control measures, in Annexes A, B and/or C.'*

Opt in countries vs Opt out

POPRC work on related issues :

- Understanding bioaccumulation, debromination
- Guidance on mixtures & interactions
- Climate change impacts into POPs assessment
- Effective participation



7. POPRC work with scientific bodies 'Climate Change and POPs: Predicting the Impacts' UNEP/AMAP

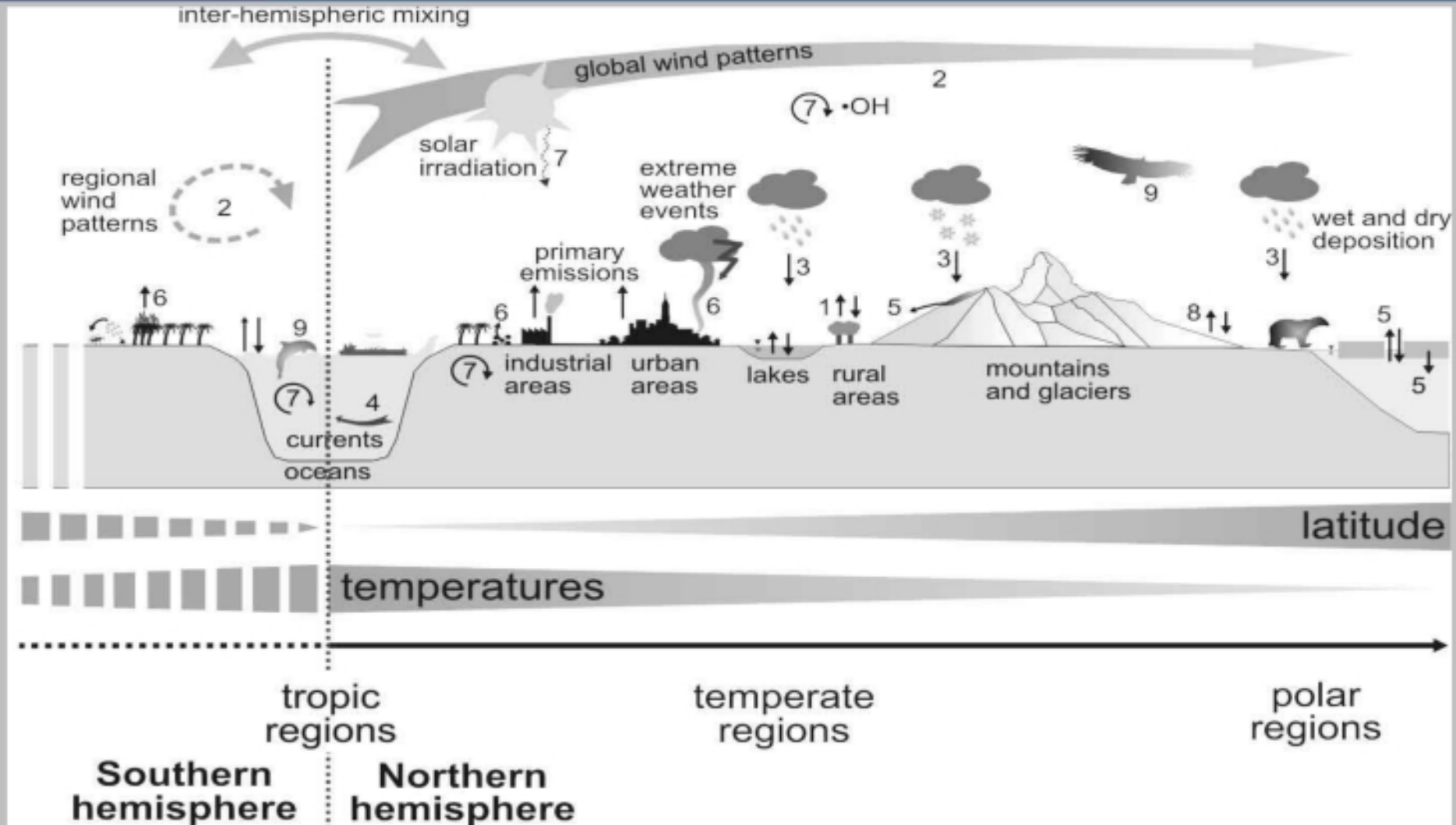
Climate Change impacts on release, distribution, exposure, degradation & toxicity of POPs

- higher temperatures increase primary releases
- change in mobilisation rates from products
- increased secondary remobilisation from sinks (ice, glaciers, permafrost, flooding waste sites)
- increase partitioning from water to atmosphere
- higher wind speeds increase airborne transport
- change in degradation rates
- Increased toxicity / decreased tolerance

Cited by IPCC



8. Environmental Fate of POPs



9. Climate Change Impacts on Wildlife & Humans

Impacts POPs toxicity & bioaccumulation - salinity, ocean temp, acidification, eutrophication, water oxygen

- higher temperatures increase uptake in gills & intestines in cold blooded species
- enhance, either alone or in combination, toxic effects of POPs & species vulnerability
- proliferation of parasites & pathogens

POPs impair ability to respond to temperature increases

- immuno-suppression facilitates spread of disease (eg cancer)

CC impacts on exposure in humans & wildlife

- more time indoors = higher exposure to indoor POPs (PFOS, PBDEs)
- polar bears' longer periods of starvation due to ice melt, leads to higher internal exposures to POPs stored in fats



10. Why do NGOs participate in the POPRC ?

'Global bans and restrictions are time effective & resource efficient'

- Full participation in meetings & working groups
- Technical information access & provision
- Input of community & indigenous knowledge
- Highlight issues eg, mixtures & interactions, endocrine disruption, 'trivial use'

Counter industry influence

'reliant on current producers of candidate POPs for information on alternatives' availability, efficacy, phase out timelines'

- CBI Restrictions in assessing alternatives

Once chemical consider by POPRC it is on its way out !



11. Current POPRC Activities

3 Recommendations for COP 7 May 2015 :

Polychlorinated naphthalenes - wood preservation, paints, oils, cables

Hexachlorobutadiene - manufacturing byproduct

Pentachlorophenol - wood preservative, biocide

In the POPRC process...

Dicofol - insecticide *'orchard growers chemical of choice'*

DecaBDE - flame retardant in electronics / ewaste

Short-chained chlorinated paraffins (SCCPs) - metal working, adhesives, sealants, drilling fluids - aquatic toxicity, liver, kidney & thyroid impacts, rat adenomas & carcinomas
'possible human carcinogen'

OTHERS ?



12. What happened at POPRC 10 ?

- Recommends Pentachlorophenol (PCP) Annex A listing with specific exemption for production and use for utility poles and cross-arms
- Concludes DecaBDE a POP & moves to final risk management evaluation
- Dicofol passes screening criteria & moves to Risk Profile
- PFOS alternatives guidance on closing loophole exemptions in Annex B, recommends labeling consumer products containing PFOS



13. What happened... DecaBDE declared a POP !

DecaBDE moves to final RME evaluation

- flame retardant in electrical and electronic equipment
- ewaste, brominated dioxins & furans when burned
- bioaccumulation & debromination crucial issues

POPRC9 - Japan & flame retardant industry rejected bioaccumulation BUT

*“considering **all the evidence in a balanced manner** it is concluded that decabromodiphenyl ether is likely to meet the criterion on bioaccumulation”*

Importance of independent expertise

- bioaccumulation/biomagnification
- high detection of congeners not present in Deca technical mixtures
- *‘significant amounts of hexa-nonaBDEs in environment could be from BDE-209 debromination’*





14. What happened ... Orchid growers' 'chemical of choice' Dicofol fulfills POPs criteria

Dicofol - organochlorine pesticide chemically related to DDT
(an intermediate in synthesis)

- miticide & acaricide used on wide variety of fruit, vegetables, ornamental (inc. orchids) & field crops

Indian government largest producer :

- 2013 Indian member blocked consensus on Annex D criteria
- 2014 Indian member doesn't attend
- POPRC 10 agrees Dicofol meets criteria & progress to Risk Profile





15. What happened... Against the odds PCP recommended for global elimination !



Pentachlorophenol (PCP) Annex A with specific exemption for
production & use
utility poles &



16. What is wrong with Annex B listing ?the PFOS story

Perfluorooctane sulfonate (PFOS)

- high reproductive toxicity, cross blood-brain barrier, neurotoxic, immunosuppression
- ubiquitous residues in human & wildlife
- *'terminal'* - no further break down

Annex B :

Acceptable purpose - photo imaging, semiconductors etching agent & photoresist coatings, aviation hydraulic fluids, hard metal plating, medical devices, fire fighting foams, leaf cutting ants insect baits

Specific exemptions – photomasks, metal plating, electric & electronic parts for colour printers, carpets, leather, apparel, textiles, upholstery, paper & packaging, coatings, rubber & plastics, chemically driven oil production (***drilling & fracking fluids***)

POPs Used in Fracking !





17. What happened ... POPRC tries to assess PFOS alternatives !

PFOS alternatives guidance for COP evaluation of acceptable purposes & specific exemptions

- Assessed >50 chemical alternatives (persistence & bioaccumulation)
- Octamethyl cyclotetrasiloxane (D4) met all Annex D POPs screening criteria
- Chlorpyrifos “might meet” POP criteria
- 34 alternatives could not be classified, 11 commercial products - confidential CBI
- 18 unlikely to meet persistence and bioaccumulation criteria
- Information very difficult to verify / CBI

Countries report alternatives for majority of uses

POPRC Recommends labeling consumer products containing PFOS



18. POPRC Challenges

Assistance for developing countries in preparing nominations

Access to independent research and expertise

Datagaps / lack of available environmental monitoring & biomonitoring

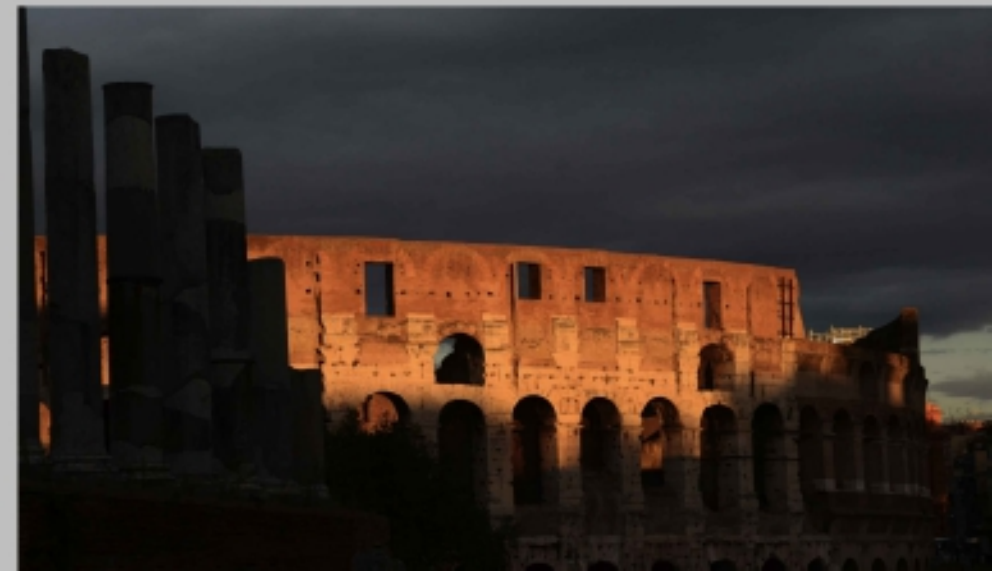
Lack of independent information on alternatives' technical feasibility, availability, costs

Difficulty in verifying information

Limited medical and human health input

Limited scope of industry representation

Few resources for NGO participation





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Thankyou for listening

