Non-governmental perspective: PPCPs & other Chemicals of Emerging Concern

Presentation prepared for EPA Region 2 Science Day Oct 25th & 26th 2005

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Great Lakes United

an international coalition to protect the Great Lakes / St. and restore Lawrence River ecosystem

Great Lakes United

GLU an organization of over 170 member organizations working on binational, multi-jurisdictional GL/SLS issues such as Aquatic Invasive Species,Water diversions, Clean production,
Habitat and Biodiversity, The GLWQA

- GLU Clean Production Campaign:

Partner in Mercury "Switch Out" Project, Clean Car Campaign*,
Health Care Without Harm**, Coordinated GL Citizens' P2/E2 Action Agenda, Participate in host Basin Wide Networks and
Capacity Building for Grass-Roots efforts, Outreach

- Policy Resolutions: supporting EU REACH, CA POPs Ratification, Zero Discharge, Virtual Elimination, Louisville Charter for Safer Chemicals
- GLU Campaign issues: POPs Ratification, Cancer prevention,

Green Chemistry solutions,Clean production principles
Just Transition for workers and communities, Environmental Justice

*Clean Car Campaign http://www.cleancarcampaign.org/
**Health Care Without Harm http://www.noharm.org/

Great Lakes United

Clean Production Activities and Campaign Initiatives cont'd….

- **GLWQA Review and Reauthorization - the water quality agreement between the US and Canada**
- **Canada-Ontario Agreement**
- **CEPA Review**
- **Great Lakes Bi-national Toxics Strategy**
- **Ontario Source Water Protection**
- **US Great Lakes Regional Collaboration**

Chemicals in Commerce/Coming into Commerce: PPCPs and Chemicals of Emerging Concern

CEPATSMP and US TSCA must evolve to prevent potential and known chemical hazards (often persistent, persistent and bio-accumulative) from entering commerce and consequently remaining in humans, waterways, sediment, wildlife, homes

Is policy/management evolving? Yes slowly, momentum building from many sectors

Regulatory: Lessons from EU's REACH: WEEE, RoHS, Cosmetic directives, US state level bans on PBTs such as BFRs Phthalate and Lindane Bills

Procurement policies at state or regional level

Non-regulatory:

EPA Sustainable Futures Program, HPV Challenge, **DfE**, GSN, state level technical assistance for businesses

Collaborations :NGO,academic, industry, labor

Progressive business models

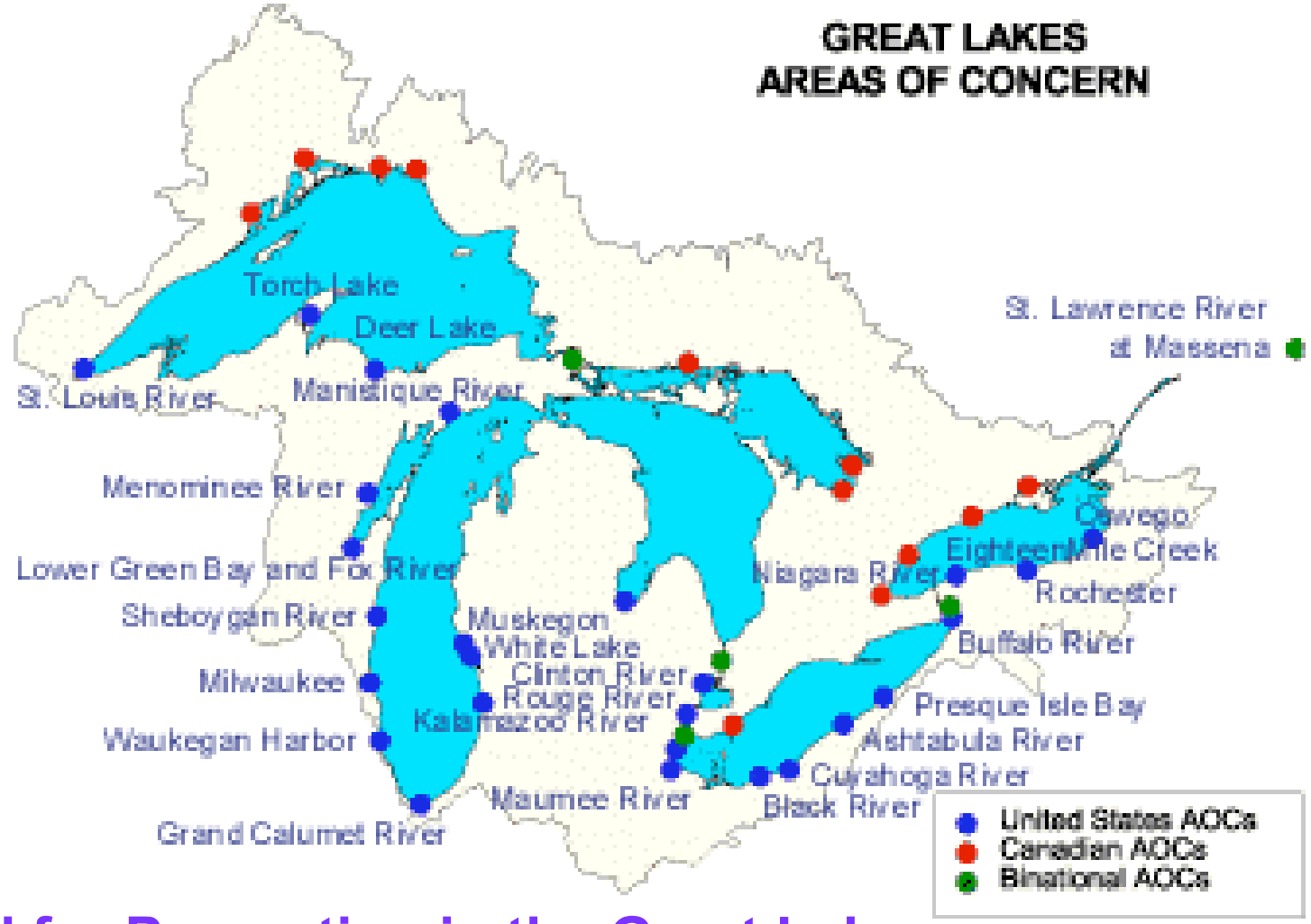
Identifying Needs: Policy and Management

"7 elements to a sustainable chemicals management system:

- promotion of innovation, green chemistry, alternative materials
- Defining and obtaining good quality information for decision making
- Improving information flows in supply chains and beyond
- Integration of US and Global Chemical Initiatives
- Promotion and Development of substitution and alternatives assessment
- Integrating improved chemicals management into business processes, including product design
- Improving our understanding of substance flows through the economy"

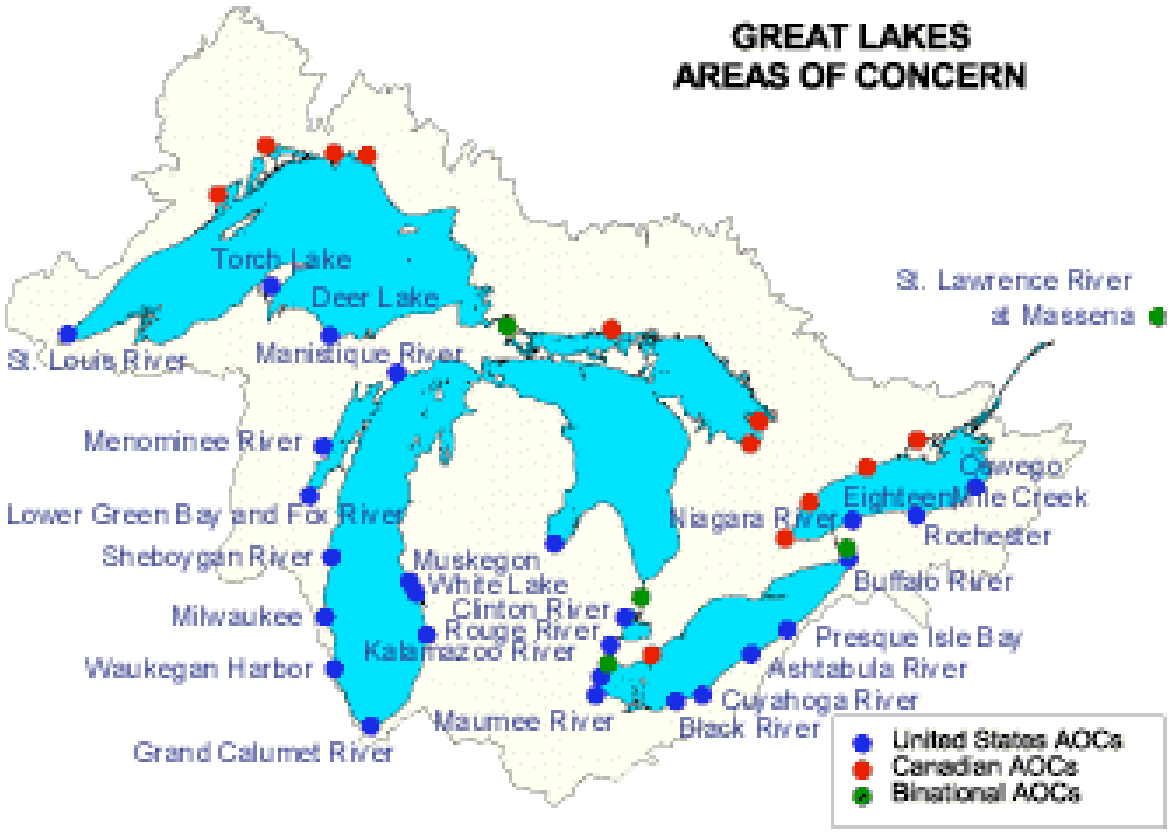
-Overview Paper "Framing a Future Chemicals Policy" Boston, MA (www.chemicalspolicy.org)

"Late Lessons from Early Warnings..", "Ecosystem Stressors": PBTs, PPCPs/Non-persistent chemical threats



The Need for Precaution in the Great Lakes

Problems with the lakes…



Chemical integrity compromised by:

Aquatic Invasive Species

Persistent Bio-accumulative Toxic Chemicals

Potential Non-Persistence Threats

Urban run-off

Air deposition of toxics

Toxic Waste disposal

Industrial releases
Plant emissions

- **Legacy contaminants remain, issues of long range transport from global sources**

S. Venkatesh and J. Ma, Air Quality Research Branch, Toronto Canada

"Tracking Toxaphene in the North American Great Lakes Basin" [1,858kb, 26pps]

- **Climate "destabilization" effects on quantity**
- **Additional contaminants increasing exponentially PBDEs, PFOS/PFOA**

Derek Muir, National Water Research Institute, Environmental Canada, *"Identifying New Persistent Chemicals in the Great Lakes Basin"* [611kb, 14pps]

- **"Deja PCBs?"**

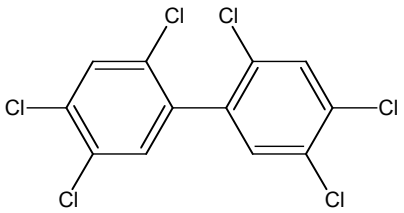
GLU & NW Indiana Toxics Action Project "Deja in the Great Lakes"

- **PPCPs: Estrogenic effects on fish study in Hamilton Harbor ON feminization of Oocytes in male White Perch Gonads**

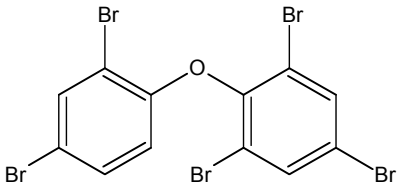
Great Lakes Science Advisory Board presentations at IJC Biennial 2005

The above presentations and reports presented at GLBTS Integration group meeting 2005 and/or IJC Biennial meeting 2005 for more information visit www.binational.net or www.ijc.org/2005biennial

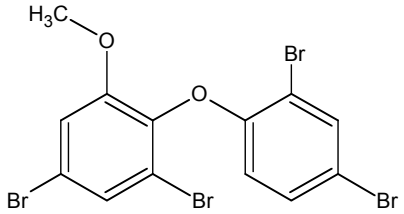
Structural Similarity of PBDEs, Their Metabolites and Environmental Derivatives to T4 and PCBs



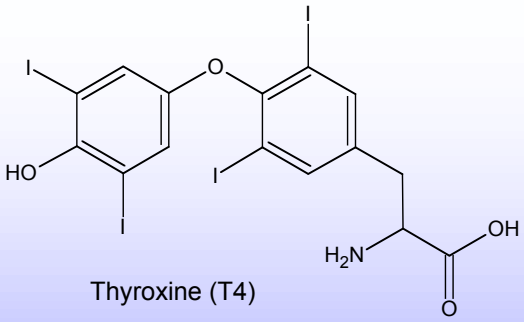
2,2',4,4',5,5'-hexachlorobiphenyl
(PCB-153)



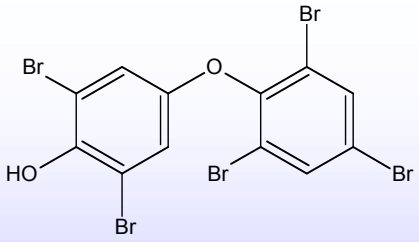
2,2',4,4',6-pentabromodiphenylether
(PBDE-100)



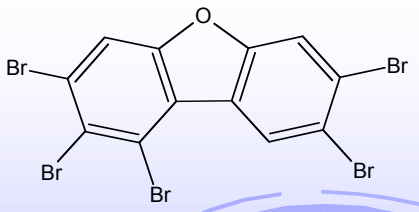
2-(2',4'-dibromophenoxy)-4,6-dibromoanisol
(methoxy-PBDE)



Thyroxine (T4)



4-(2',4',6'-tribromophenoxy)-2,6-dibromophenol
(hydroxy-PBDE)



2,3,4,7,8-pentabromodibenzofuran
(PBDF)

Tom A. McDonald, M.P.H., Ph.D.
OEHHA, California EPA

Slide from GLU/NW ITAP presentation at IJC Biennial 2005

PBDEs, PFOS/PFOAs and PPCPs Relate to Many Great Lakes Concerns Addressed by the Great Lakes Water Quality Agreement

PBDEs/PFOS/PFOA

- Persistent Organic Pollutants (POP)/Persistent Bio-accumulative Toxicants (PBT)
- Human Health - Endocrine Disruption
- Emerging Environmental Challenges
- High Production Volume (HPV) Chemical

PPCPs

- Essentially high production volume chemicals
- Some found in treated water as well as raw lake water
- Emerging Environmental Challenges

Slides from GLU/NW ITAP presentation at IJC Biennial 2005

Great Lakes Action Agenda

- *In 2001 members of Congress challenged the Great Lakes states to come together and propose a comprehensive plan to clean up and restore the basin ecosystem*
- *To influence this effort, GLU coordinated a collective document on restoring the region*
- *The Green Book is a summary of "A Citizens' Action Agenda for Restoring the Great Lakes – St. Lawrence River Ecosystem"*
- *Three dozen ENGO authors*
- ***Binational**, comprehensive set of recommendations to all levels of government*
- *Investments and policy changes citizens believe are necessary to restore and protect the Great Lakes*
- *On the Web: www.glu.org:*
  "Citizens' Action Agenda" under "What's New"

Great Lakes Action Agenda

- *Focus on product design for manufactured products*
  Clean Production design, EPR, PBT-Free Procurement, Technical assistance, Just Transition***
- *Phase out of PBTs like BFRs*
- *Mercury Bill ME legislative model*
- *Resource extraction*
- *Manufacturing*
- *Construction*
- *Food Production and Agriculture*

*Clean Car Campaign www.cleancarcampaign.org/modellegislation.shtml

**Just Transition http://www.cfe.cornell.edu/wei/justtrans.pdf

Solutions

- **Clean production** aims to minimize a product's cumulative harmful impact on the environment by considering all stages of its life cycle - - from raw material extraction through manufacturing, use and disposal*
- **Green chemistry** is the design of chemical products and processes that reduce or eliminate the use and generation of hazardous substances (Anastas et al. 2000). "**As a catalyst for corporate innovation, a strategic response to regulation, reduce liability and risk, enhance competition eg. Pfizer, Nike, BASF, Toyota"****
- Substitution of Materials with **Safer Alternatives**

* more on this www.glu.org and in *Green Book* available on website

**See "Green Chemistry.." workshop background paper from "Framing a Future Chemicals Policy" www.chemicalspolicy.org

Important Models

- EU REACH WEEE, RoHS, Cosmetics Directives
- Louisville Charter Platform

State/City

- NY Phthalates bill
- NY Lindane Ban
- Safe and Sustainable Purchasing NY
- City of Buffalo PBT Free Purchasing Resolution

essential to their success:

- Implementation

- Enforcement

- Political Will

- Means, Efficacy

Important Projects and Campaigns a few examples…

- Safer Cosmetics Campaign*
- Safer Products Project**
- Computer Take Back***

Source:www.safercosmetics.org

- Consumer education
- Highlighting safer alternatives
- Raising awareness about chemicals in commerce
- Educating on disposal recycling for goods with toxic components

Source: www.computertakeback.com

Source: :www.epa.gov

* http://www.safecosmetics.org/

** www.safer-products.org

*** www.computertakeback.com

Next Steps

- Meet research funding and program funding needs for effective and ecologically sound treatment of WWTP effluent of pharmaceuticals
- Focus on children's health and breadth of research available that could fill in critical data gaps relating to low-dose impact of unregulated chemicals to humans and wildlife
- Align Government incentives and disincentives to create market forces to drive change towards green chemistry, bio-based materials, other innovations
- Engage Great Lakes Governors and Mayors initiatives

Next Steps

- Continue networking, raising awareness, fostering partnerships with businesses, promote progressive businesses bringing safer products into market
- Focus on models of change Informing the public
- States such as NY could be model for change with procurement policies in place
- Ensure a better flow of good information between

producers, downstream users workers, consumers

- Form alliances with non-traditional groups to identify common goals and cooperate for the protection of children's health and sustainable development with direct ecological benefits
- Ensure forums for public participation in earlier stages of policy development

Next Steps continued

Next Generation *GL Binational Toxic Strategy**:

A possible forum for addressing PBDEs/PPCPs?

BTS reauthorization in 2006 -What is future role?

The future role of GLBTS could enhance implementation of Toxics Use Reduction Strategies in jurisdictions of US and CA, continued research and integration with global efforts especially for LRT issues and increased information exchange on preventative approaches, material substitution, product design stage considerations

*Find out more about GL BTS at www.binational.net

Next Steps continued

- Continue promoting Green Chemistry* principles
- Encourage businesses to utilize available:

Forums of information exchange,

Technical assistance provided by EPA and business to business info exchange;

*www.epa.gov/**greenchemistry**/

Next Steps continued

- Louisville *Charter A Platform for Creating a Safe and Healthy Environment through Innovation*
  www.louisvillecharter.org

- Substitution to safer materials: already practiced by progressive industries must be encouraged through incentives and mandate

Next Steps continued

Great Lakes and beyond…

- For Great Lakes, harmonized/binational international pollution prevention efforts between CA,US, Tribes, First Nations remains vital

- Important reports* by CELA, ED comparing TRI and NPRI data also CELA report on CEPA's Toxic Substance Management Policy (TSMP)

Possible model for TSCA in ranking of chemicals

*www.cela.ca

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