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**Canada - United States**

**Great Lakes Binational Toxics Strategy**

**Perspective on Emerging Chemicals**

**Canadian P2 Roundtable**

**Ottawa, Ontario**

**April 30, 2004**



# The Great Lakes: A Precious Resource

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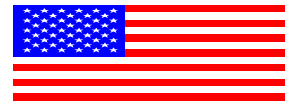
- 20% of world fresh surface water supply
- 22 million US; 9 million Canadians
- 45% of Canadian industry
- 33% of US Manufacturing
- 25% of Canadian agriculture
- \$180 billion in Canada-U.S. trade
- \$450 million fishery industry
- 1.5 million recreational boaters

# The Great Lakes Binational Toxics Strategy



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- Signed in 1997, the Great Lakes Binational Toxics Strategy implements the Great Lakes Water Quality Agreement Article II(a):
  - *The discharge of toxic substances in toxic amounts (shall) be prohibited and the discharge of any or all persistent toxic substances (shall) be virtually eliminated.*





# Strategy Substances

Level I - for Immediate Action

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## **Active**

- **Mercury**
- **PCBs**
- **Dioxins/Furans**
- **Hexachlorobenzene**
- **Benzo(a)pyrene**

## Inactive

- Alkyl-Lead
- Chlordane,
- Toxaphene
- Aldrin/dieldrin
- DDT &  
Metabolites
- OCS



# Strategy Substances

## Level II – Pollution Prevention

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### CEPA-Toxic

**Cadmium**

**3,3'-dichlorobenzidine**

**PAHs**

***Tetrachlorobenzene*** \*

Hexachlorocyclohexane

4,4'-methylenebis  
(2-chloroaniline),

Pentachlorobenzene

Pentachlorophenol

Tributyl tin

Dinitropyrene

Endrin

Heptachlor

1,4-dichlorobenzene

***\*proposed***



# Strategy Language

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*...EC and USEPA in cooperation with their partners will periodically examine the substances addressed by the strategy to determine whether any level II substances should be elevated to the level I list, whether new substances which present threats to the great lakes ecosystem should be considered for inclusion on the level I or II lists, and whether any other changes should be made.*



# Strategy Language

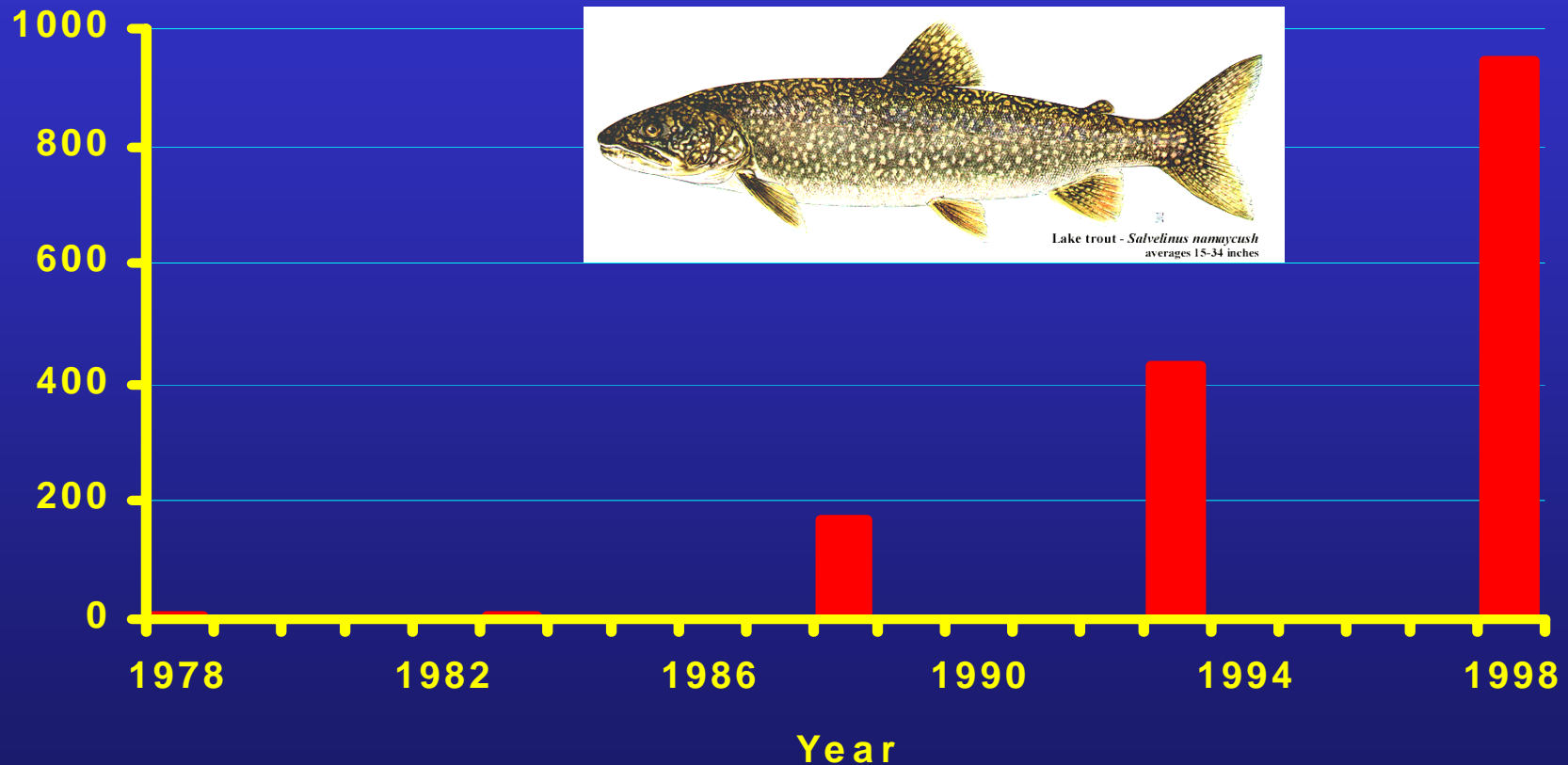
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*Existing processes for nominating or elevating substances will be used, e.g., bioaccumulative chemicals of concern (BCCs) in the U.S., TSMP, and COA in Canada, or lamp critical pollutants. It is not the intent of the strategy to initiate a new nominating process. Existing nominating and chemical screening processes already include a strong public participation component*

# PBDE in Trends in Lake Ontario Lake Trout

Dept. of Fisheries & Oceans, Canadian Centre for Inland Waters

Ng/g Lipid



Adapted From: <sup>2</sup>Luross, J.M.; Alae, M.; Sergeant, D.; Whittle, D.M. Solomon, K.R, *2<sup>ND</sup> Annual Workshop on Brominated Flame Retardants in the Environment*, 2000, Burlington, Ontario, Canada, June 2000.



# Emerging Chemicals of Concern

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- PBDEs
- PFOS/PFOA
- Bisphenol A and Pthalate Esters
- Pharmaceuticals and Personal Care Products
- AP/APEs



# International/National Initiatives

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- Globally - UNEP POPs
- Europe/NA - LRTAP POPs
- Europe - REACH
- North America - CEC SMOC
- Canada - CEPA-Toxics Reviews
- US – Proposed Legislative Amendments/Updates (TSCA/FIFRA)



# National Monitoring

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- 4-year Fish Tissue Survey (1999-2003)
  - 268 analytes
- USGS Emerging Contaminants Survey (1999-2001)
  - Streams, Groundwater, Drinking Water
  - 95 chemicals targeted



# Activity in the Basin

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- Fish Monitoring Workshop - 2001
- Emerging Pollutants Workshop – 2003
- Additional Analytes to Standard Monitoring Programs on both sides of the border



# Great Lakes Monitoring

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- Canadian Open Water - PBDEs, Pharmaceuticals, PFOS/PFOA.
- Canadian Aquatic Biota – PBDEs, HBCD, PFOS
- US Fish – PBDEs, PBB-153, PCNs, PFOS, TBBPA, APEs, *Scan for Organics*
- IADN - PBDEs



# More Recent Findings – Lake Ontario Trout, 2000

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- BDE 47, 66, 99, 100, 153, 154 28/33, 37, 49, 119, 116, 85, and 126/155
- ***No HBCD or TBBPA***
- PBB 153
- PCN 42 and PCN 66/67
- Dacthal
- NP
- PFOS



# GLNPO Funded Research in the Great Lakes

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- Western Lake Superior – PBDEs in Sediments and Water Column
- Cormorant Eggs in Lake Michigan - PBDEs
- C Dubia Study in Wisconsin – PBDEs
- SE Chicago POTW Study



# Other Recent Developments

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- PBDE Phase-Outs
- PFOS SNUR (US)
- APEs
- HCB



# Role of the GLBTS?

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- GLWQA – Article 2, Annex 12 – Review Coming Up
- Great Lakes as Global Sentinel
- GLBTS as Living Laboratory for Beyond Compliance Pollution Prevention Pilot Projects



# Next Steps

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- GLBTS Beyond 2006
  - New List of Toxics?
  - Shift in paradigm – general P2?
  - What about non-persistent toxics (e.g. pharmaceuticals)?