Great Lakes Binational Toxics Strategy Integration Workgroup Meeting

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Windsor, Ontario

Level 1 Pesticides: 2005 Management Assessment

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Challenge Goal Status

Have the challenge goals for the Level 1 pesticides been met?

Canada

- By 1997, report that there is no longer use, generation or release
- If ongoing, long-range sources outside of Canada are confirmed, work to reduce or phase out releases

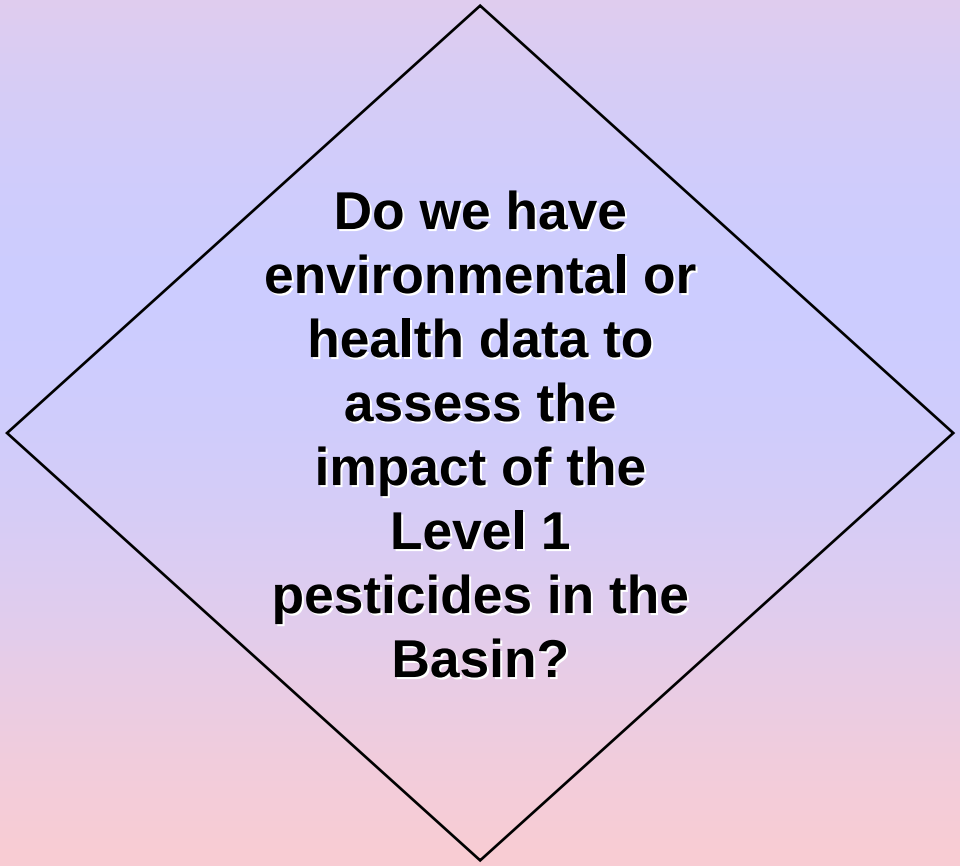
United States

- By 1998, confirm that there is no longer use or release
- If ongoing, long-range sources outside of the U.S. are confirmed, work to reduce or phase out releases

Conclusion: Canada and the U.S. have both met their challenge goals outlined in the Strategy

- Challenge reports completed and confirm no use, generation, or release:
  - U.S. (Draft 1998, Final 2000)
  - Canada (1996, with reconfirmation in 2000)
- Work continues within international frameworks to reduce or phase out releases.
  - The GLBTS Long-Range Transport workgroup also supports these efforts.

Environmental Analysis: Environmental and Human Health Data

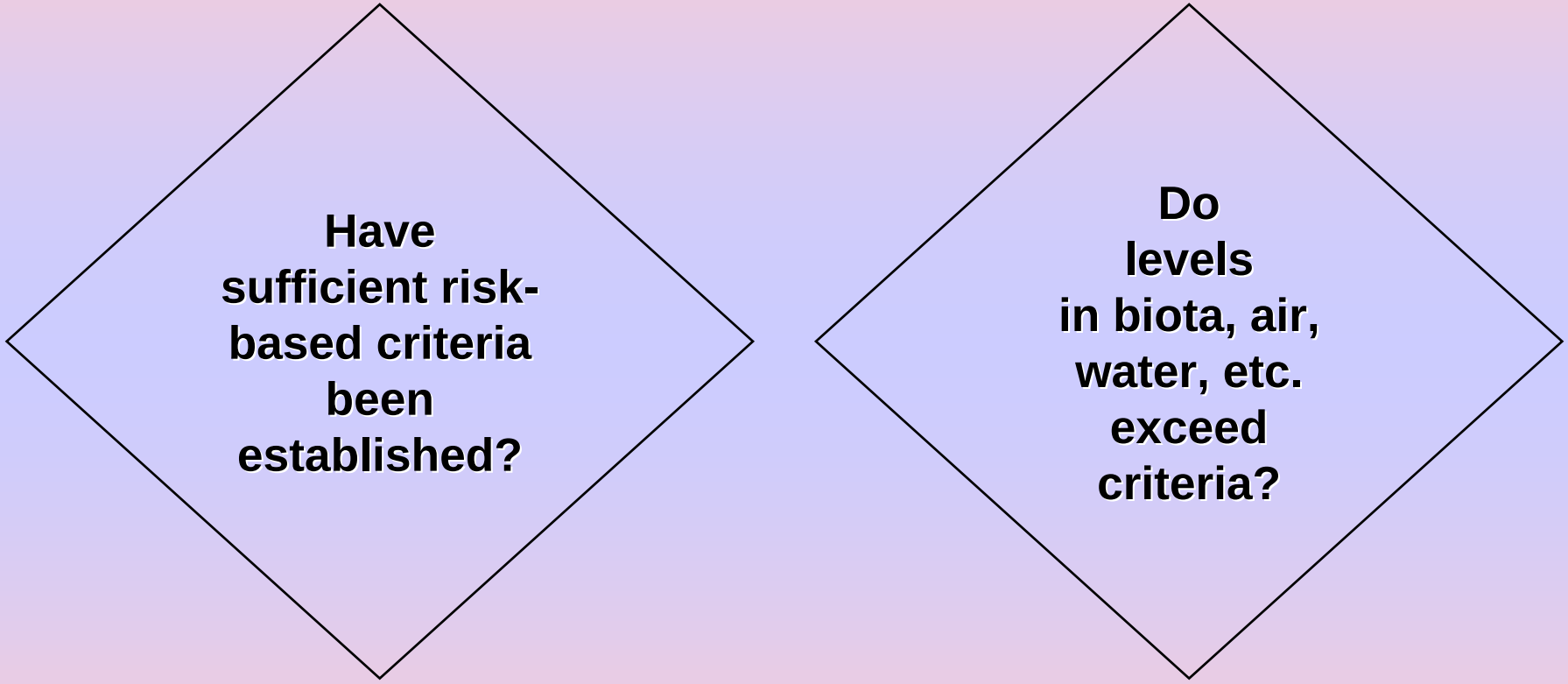


Environmental Analysis: Environmental and Human Health Data Available

- Fish
- Herring gull eggs
- Bivalves
- Water and Sediments
- Air
- Food
- Human Body Burdens

- **Conclusion: There are sufficient data on Level 1 pesticides in multiple media to assess the impact of the Level 1 pesticides in the Basin**

Environmental Analysis: Criteria

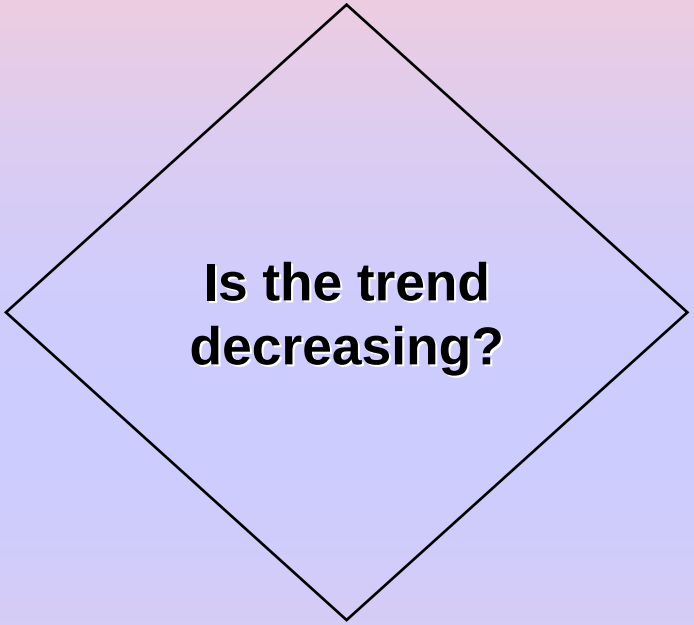


Environmental Analysis: Criteria

- Criteria not developed for all Level 1 pesticides in all media.
- In the 2000 Challenge Report, criteria comparisons showed:
  - fish tissue criteria exceedances (all except toxaphene);
  - gull eggs slightly below criteria for DDT;
  - water criteria exceedances (dieldrin, DDT, toxaphene);
  - surficial sediment criteria exceedances;
  - fish consumption advisories.
- Additional environmental data is still being evaluated.

- **Conclusion: Criteria information is sufficient to conclude that some of the Level 1 pesticides have a continued adverse impact on the Basin.**

Environmental Analysis: Trends



- **Conclusion: Level 1 pesticides are still present but have generally declined for the past twenty years in the Great Lakes Basin media.**

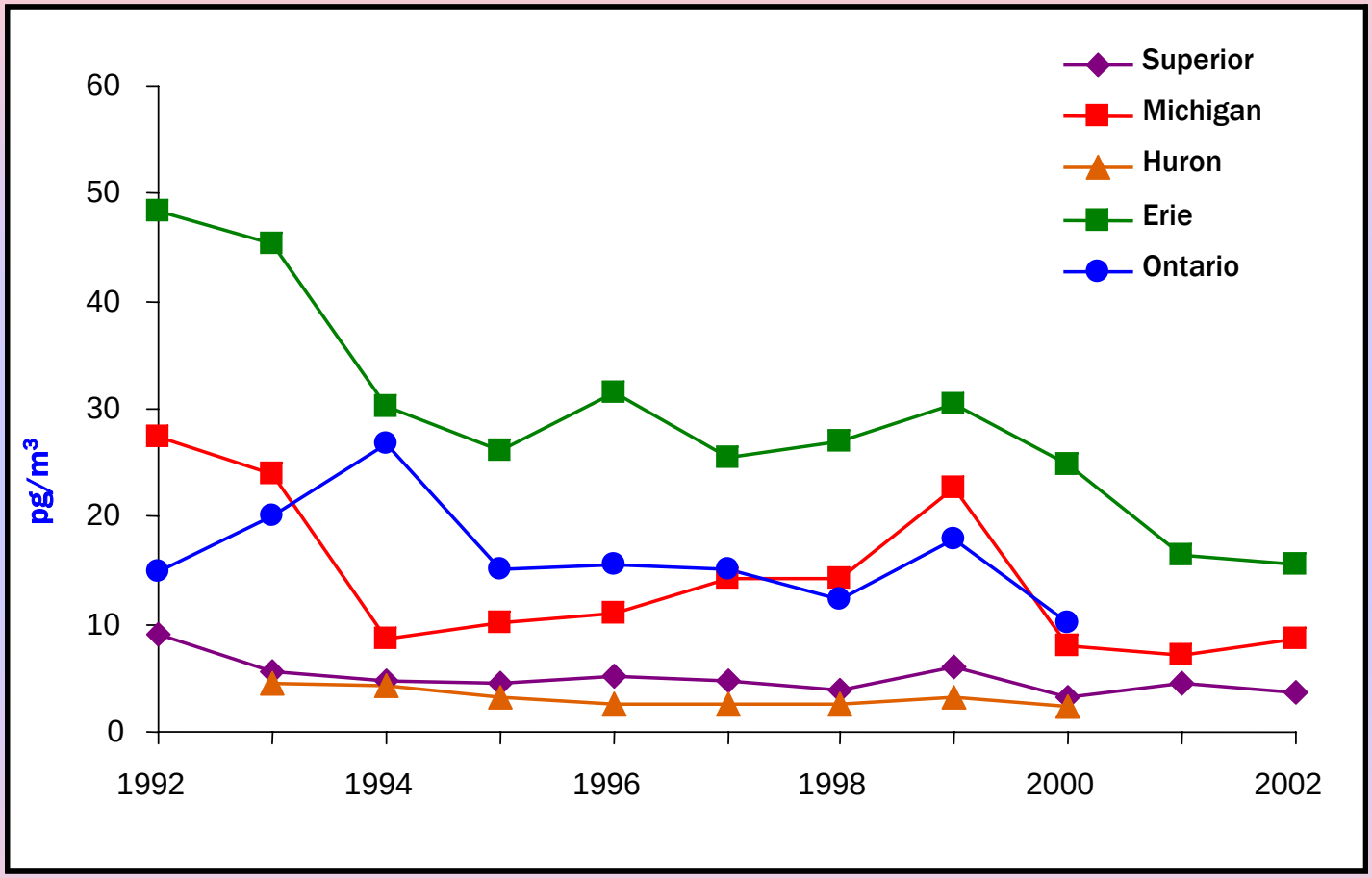
See examples following slides

Environmental Analysis: Trends in Herring Gull Eggs

Water Body	Year	DDE
Lake Superior	1974	16.7
n=2	2003	0.907
	% decline	**94.6%**
Lake Michigan	1976/77	29.2
n=2	2003	2.30
	% decline	**92.1%**
Lake Huron	1974	17.4
n=2	2003	0.791
	% decline	**95.5%**
Detroit River	1978	9.44
n=1	2003	0.798
	% decline	**91.5%**
Lake Erie	1974	7.13
n=2	2003	0.629
	% decline	**91.2%**
Niagara River	1979	4.01
n=1	2003	0.630
	% decline	**84.3%**
Lake Ontario	1974	22.3
n=2	2003	1.04
	% decline	**95.4%**
St. Lawrence R.	1986	3.59
n=1	2003	0.931
	% decline	**74.1%**

Percent Decline in Concentrations of DDE in Herring Gull Eggs from 1974 (or year of first analysis) to 2003^ [Source: CWS]

Environmental Analysis: Trends in Air



Annual Average Atmospheric Gas-phase Total DDT (p,p'-DDT+DDE+DDD) Concentrations (pg/m³) [Source: IADN]

Management Assessment: Sources

- Remaining stockpiles – Significant quantities of Level 1 pesticides continue to be collected every year in Clean Sweeps programs in the Great Lakes region.
- Reservoir sources – Sediments, soil, and localized contaminated industrial sites (NPL Superfund sites).
- International sources – Continued production and use internationally, long-range transport.

- **Conclusion: Stockpiles, reservoir sources, and long-range sources of Level 1 pesticides may all potentially impact the Basin.**

Remaining Stockpiles: Comparison of Post 1990 Great Lakes Water Column Loads of Level 1 Pesticides to Masses Collected in Clean Sweeps through 1998

Pesticides	Lake Superior	Lake Michigan	Lake Erie	Lake Huron	Lake Ontario	Estimated Total Pesticide Load in kgs	
Lake Volumes (Km^3)	12,100	4,920	484	3,540	1,640		
	Total Water Column Loading (kg)	Total Water Column Loading (kg)	Total Water Column Loading (kg)	Total Water Column Loading (kg)	Total Water Column Loading (kg)	Total Water Column Loading (kg)	Total Clean Sweep Collections in Great Lakes Basin (kg) [(a)]
Aldrin + Dieldrin	1,936	--	368	--	443	2,747	5,772
Chlordane	133	--	121	--	426	680	7,888
DDT+ Metabolites	363	25	145	7	410	950	26,047
Mirex	121	--	10	--	115	246	0
Toxaphene	13,552	1,870	111	1,664	279	17,476	1,540
Totals	16,105	1,895	755	1,671	1,673	22,099	41,247

[Source: USEPA, 2000]

Management Assessment: Current Regulations or Programs

- Activities to reduce remaining stockpiles – Clean Sweeps; US regulations (e.g., CERCLA, RCRA, TSCA, FIFRA); Household Hazardous Waste depots.

- Efforts targeting reservoir sources – Government remediation activities, e.g., in Great Lakes Areas of Concern.
  - Over 300,000 Kg of DDT + metabolites removed from the Pine River in Michigan.

- International programs – CEC North American Regional Action Plans for DDT and Chlordane; LRTAP POPs; NAFTA Technical Working Group on Pesticides; UNEP Global Treaty on POPs.

- **Conclusion: Programs exist to address remaining sources of Level 1 pesticides in the Basin.**

Overall Management Outcomes

- **Continue Monitoring:**
  - Herring Gull Eggs
  - Fish
  - Air via IADN
- **Continue Tracking:**
  - Clean Sweeps
  - Site Remediations

FINAL MANAGEMENT OUTCOME: TBD [e.g., Suspend GLBTS Workgroup Activities. Periodic Reassessment by GLBTS, until Parties determine substance has been virtually eliminated.]