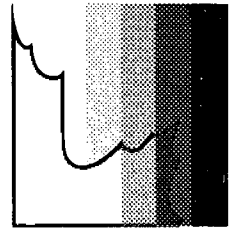


Canadian Environmental Law Research Foundation

La Fondation canadienne de recherche du droit de l'environnement



TOXIC AND OXIDANT AIR POLLUTION IN
NORTH AMERICA

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and the Environment, hosted by the Federation of Associations on the
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TRANSPORT AND DEPOSITION OF TOXIC AIR POLLUTANTS

1. Important Factors:

- . Local and long-range transport
- . Toxic pollutants move freely between air, water and land
- . Toxic pollutants move freely between Canada and USA through air and water

2. Toxic Substances of Concern Share Characteristics:

- . Toxic in trace quantities
- . Extremely persistent
- . Ability to bioaccumulate
- . Sources numerous and diverse
 - power plants
 - motor vehicles
 - petrochemical plants
 - incineration

3. Great Lakes are Particularly Susceptible to Toxic Contamination From Atmospheric Deposition for These Reasons:

- . Location
- . Vast surface areas
- . Depth
- . Slow turnover
- . Low sediment load

Data are incomplete but problem is indicated by 1980 studies for IJC Science Advisory Board:

- . 80% of PCBs to Upper Great Lakes from air
- . 10 Tonnes/year to Lake Superior
- . 7 Tonnes/year to Lakes Michigan & Huron
- . "The most serious known toxic organic problem affecting Great Lakes Water Quality"
- . Also important:
 - . DDT
 - . Other pesticides
 - . PAH
 - . Metals - eg, 87% of lead

PHOTOCHEMICAL OXIDANTS

1. Characteristics

- Includes several chemicals, but ozone (O_3) predominates
- Secondary pollutants - formed in the air from nitrogen oxides (NO_x) and volatile hydrocarbons (VOCs) in the presence of sunlight

2. Sources

NO_x - Combustion

- motor vehicles
- fossil fuel power plants
- industrial processing

- #### VOCs -
- motor vehicles (fuel combustion)
 - fuel evaporation
 - petroleum refining
 - solvent use

3. Transport

- #### Rural "episodes" - Areas of Canada at risk:
- Southern Ontario
 - Fraser River Valley
 - St. Lawrence River Valley
 - New Brunswick/Nova Scotia

Transboundary movement

4. Effects

- #### Crop damage -
- 90% of crop damage due to all air pollutants
 - \$200 million in California
 - \$200 million eastern Ontario
 - \$20 million Ontario

- #### Forest damage -
- widespread in eastern U.S. and Europe
 - probable link with ozone

- #### Health effects -
- respiratory effects

CANADIAN LAWS APPLICABLE

TO AIR POLLUTION

FEDERAL

Clean Air Act

Ambient Objectives - Advisory

National Emission Standards - Binding

National Emission Guidelines - Advisory

Fuel Content Regulations - Binding

Environmental Contaminants Act

Motor Vehicle Safety Act

Emission Standards

PROVINCIAL (Ontario)

Environmental Protection Act

Ambient Objectives (Reg. 296)

Emission Standards (Point of impingement) (Reg. 308)

Motor Vehicle Regulation

Ontario Hydro Regulation

SHORTCOMINGS OF DOMESTIC LAW

Most present laws are not able to adequately control air pollutants with these characteristics:

Main Problems

- . Many substances not regulated at all
- . Standards set to protect against adverse effects in air. Impact of fall-out on water pollution not addressed by control mechanisms
- . Focus on primary pollutants, not substances which are formed in the air such as oxidants and acid rain
- . Focus on local air quality - not long-range; dispersion does not work for these pollutants
- . Extra-jurisdictional effects not included

NEED FOR BILATERAL ACTION

Possible approaches

- . Expand role and function of IJC
- . Include toxics in air pollution treaty presently under negotiation
- . Include toxics in next renegotiation of Great Lakes Water Quality Agreement

POINTS FOR DISCUSSION

1. Clearly there is a need for more monitoring and research in this area - but in the face of fiscal restraint and government cut-backs, particularly in the federal Department of the Environment, how can those concerned with the problem of toxic and oxidant air pollution ensure that this essential work is done?

2. How can the standard-setting process be reformed to ensure political accountability so that legislation and regulations clearly set forth objectives and procedures to achieve those objectives rather than leaving them largely in the hands of the civil service as at present?

How can the process provide opportunities for greater public participation than at present?

How can the process deal with questions of risk?

3. Should the federal government assume responsibility for directly regulating toxic and oxidant air pollution on a national basis?

4. What is the best strategy for ensuring that Canadian-U.S. air pollution agreements address the problem of toxic and oxidant air pollution as well as acid rain - through the IJC, through the next Great Lakes Water Quality Agreement, through the Memorandum of Intent negotiations or by working for a whole new process devoted to these issues alone?