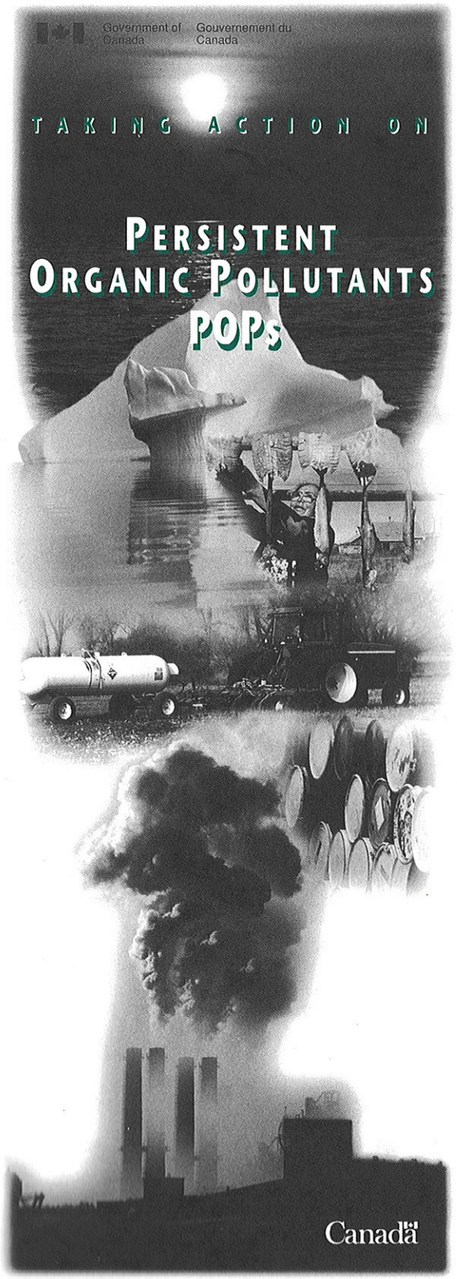
Government of Canada / Gouvernement du Canada

TAKING ACTION ON

PERSISTENT ORGANIC POLLUTANTS POPs



Canada

WHAT ARE POPs?

Persistent Organic Pollutants, or POPs, include industrial chemicals such as PCBs, pesticides such as DDT, chlordane and toxaphene, and contaminants and by-products such as dioxins and furans. POPs bioaccumulate in living organisms, persist in the environment and have long-term toxic effects. They enter the environment as a result of human activity.

WHY ARE POPs A PROBLEM?

The weight of scientific evidence strongly suggests that POPs cause significant adverse effects to human health and wildlife. A unique feature of POPs is that they move through the food chain to humans. They are passed on from mother to child across the placenta, and through breast milk.

WHERE DO POPs COME FROM?

While most POPs have been banned or severely restricted in Canada for years, they are still produced, used and released in a number of other countries. Most of the POPs currently entering the Canadian environment come from foreign sources in North and Central America, Eastern Europe and Southeast Asia.

THE SCIENCE OF POPs

- POPs are semi-volatile chemicals. After their release into the environment, they travel in multiple cycles of evaporation, transport by air and condensation. Called the grasshopper effect, this process allows POPs to travel great distances quickly. In the cold climate of the Arctic, low evaporation rates trap POPs, and so they enter the food chain. In Canada, the highest concentrations of POPs are found in the Arctic, Great Lakes and St. Lawrence basin.

- POPs tend to concentrate in colder climates such as Canada's north. Scientific evidence shows levels of PCBs in the blood of some Inuit women are higher than Health Canada guidelines, and levels of certain POPs in breast milk have been found up to nine times higher than in women who live in southern Canada.

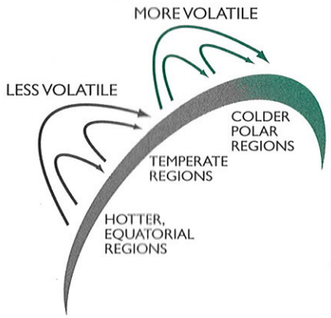
- The geographic location and socio-economic activities of Aboriginal Northerners make them particularly susceptible as they eat country food that has been contaminated. Country food is economically essential for most Aboriginal Northerners.

- Data from sediment samples in the Great Lakes and other regions reveal that the concentrations of dioxins and furans have increased steadily since the 1940s, indicating that these substances are generated and released through industrial activities.

- DDT in the environment causes the eggshells of gulls and eagles to become so thin they break during incubation. Registration of all uses of DDT was discontinued in 1985. Over 10 years, DDT levels around the Great Lakes in gulls and their eggs decreased by up to 10 times, and the health and size of fish-eating bird populations increased.

- At the Airborne Toxic Substances Measurement Station in Villeroy, Quebec, scientists are furthering the knowledge of how pollutants move and dissipate within the atmosphere. The Integrated Atmospheric Deposition Network, established by the United States and Canada for air monitoring and research, can help pinpoint the sources of pesticides reaching Canada.

THE GRASSHOPPER EFFECT OR GLOBAL DISTILLATION



- Sophisticated technology enables the Canadian Global Emissions Interpretation Centre to determine pesticide applications by region, time and mode of application, properties, and soil and meteorological conditions.

CANADIAN ACTION ON POPs

- PCBs have never been manufactured in Canada. Commercial, manufacturing and processing uses of PCBs were restricted in Canada in 1977, bringing to an end the manufacture and import of new PCB equipment and the refilling of existing equipment. As a result of this and the management controls that followed in the 1980s, the overall level of PCBs in the Canadian environment has declined.

- Dioxins and furans, released into the environment as by-products from various manufacturing and industrial processes, were declared toxic under the *Canadian Environmental Protection Act* in 1990. As a result of industry response to regulations passed in 1992 and 1994, releases of dioxins and furans from the pulp and paper industry have decreased by almost 100% since 1988.

- In 1995, the federal government adopted the Toxic Substances Management Policy. The policy provides a science-based framework to identify toxic substances that are bioaccumulative, persistent and predominantly released as a result of human activity. The policy calls for the virtual elimination of these substances from the environment.

- Through the Northern Contaminants Program, sources and pathways of contaminants reaching the Canadian north have been identified, and levels of POPs measured in air, snow, water, soil, plants, fish, wildlife and the people living there. This program also provides information and promotes cooperation with the eight countries in the circumpolar community.

- The Canadian International Development Agency has funded over $8 million in projects for the Russian Arctic to introduce sound environmental management and encourage more sustainable practices.

INTERNATIONAL ACTION ON POPs

A protocol on POPs has been negotiated under the United Nations Economic Commission for Europe Convention on Long-range Transboundary Air Pollution. With the signing of this regional Protocol, the stage has been set for the next step: a global agreement on POPs under the United Nations Environment Programme (UNEP).

Other examples of international action on POPs:

- UNEP is sponsoring the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities.

- The Arctic, one of the world's most sensitive ecosystems, is being further protected by projects under the Arctic Council fostered by Canada, Denmark/Greenland, Finland, Iceland, Norway, Russia, Sweden and the United States. Results of the Arctic Monitoring and Assessment Program help form a data source for those involved in Arctic contaminants research.

- Canada, the United States and Mexico have developed joint regional action plans on PCBs, DDT and chlordane.

- POPs are included in the Great Lakes Binational Toxics Strategy (Canada/U.S.) and other complementary agreements.

PROTECTING THE FUTURE

There is evidence that steps taken to reduce or eliminate the use or release of POPs in the environment can lead to measurable environmental improvements. The negotiation of a global and legally binding instrument will contribute to the protection of the world's environment and human health.

For more information:

Environment Canada Inquiry Centre: 1-800-668-6767
The Green Lane: www.ec.gc.ca