



Indian and Northern
Affairs Canada

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et du Nord Canada

The NORTHERN CONTAMINANTS PROGRAM



Canada

NORTHERN CONTAMINANTS PROGRAM

Food from the land and the sea are important for the health and culture of Northern people.

The relationship between Northerners and their environment is closely linked to their cultures and the way they live. Many Northern traditions revolve around food gathering, sharing and eating. Traditional/country foods are particularly important because of their superior nutritional value, and their spiritual and cultural significance.



In the late 1980s, scientists discovered that the air, water, plants, animals and people in the North are exposed to contaminants that are released into the environment from industrial activities and agricultural practices, primarily occurring outside the North. The Northern Contaminants Program (NCP) was created through consultation with the scientific community, Northern Aboriginal organizations, Northern communities, and government departments to examine this issue.

Specifically, the Northern Contaminants Program resolves to:

- Measure contaminant levels in the environment and people in the Canadian North
- Assess effects of contaminants on the health of people, wildlife and the Northern environment
- Evaluate contaminant pathways to the North
- Pursue international agreements to control global release of contaminants
- Provide information that assists Northerners in making informed decisions about their food use.

The NCP is managed by the Department of Indian Affairs and Northern Development in partnership with other federal departments (Health, Environment, Fisheries and Oceans), the Yukon, Northwest Territories and Nunavut territorial governments, and five Northern Aboriginal organizations – Council of Yukon First Nations, Dene Nation, Inuit Circumpolar Conference, Inuit Tapirisat of Canada, and Métis Nation – Northwest Territories.

TYPES OF CONTAMINANTS

Many of the contaminants found in the North can persist in the environment, can accumulate in the food chain, and can be toxic to humans and animals.

What kinds of contaminants are found in the Canadian North?



- **Persistent Organic Pollutants (POPs)** are primarily human-made chemicals released from agricultural practices (i.e. pesticides such as toxaphene and DDT) and many industrial processes and products (e.g. PCBs).



- **Heavy metals**, such as mercury, cadmium and lead, are present naturally in rocks and soil. Human activities, such as mining, smelting and coal-burning power generation, may also release these metals to the environment.



- **Radionuclides** release radiation or energy. They can be naturally occurring (e.g. uranium) or result from human activities (e.g. atmospheric testing of nuclear weapons, and nuclear waste disposal in oceans).

Many contaminants of concern that are now found in the North have never been used in the North. Several of them have never been used in other parts of Canada, or have been banned or restricted since the 1970s.

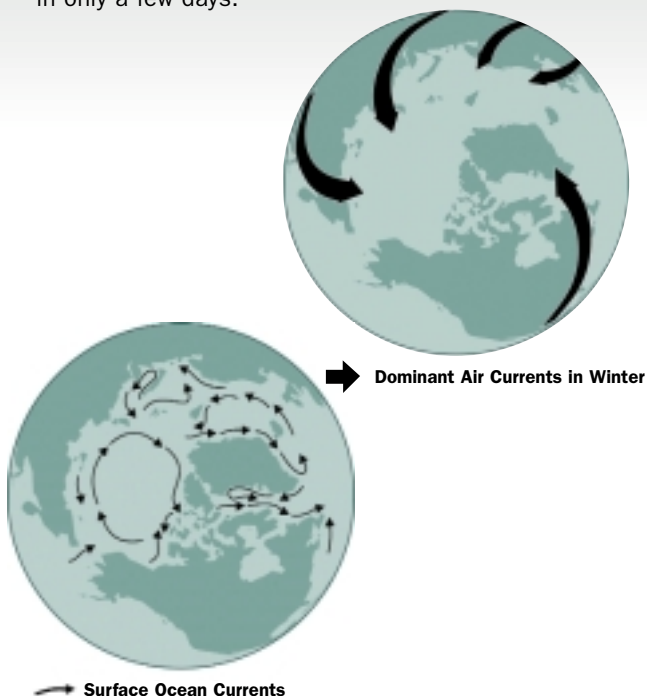


CONTAMINANT TRANSPORT

How do contaminants get to the North?

Most contaminants are transported to the North by air currents from sources outside Canada.

Contaminants travel to the North by air (wind), oceans, ice and rivers. Parts of Asia, Europe and North America are the main source regions for many of these contaminants. Transport by air currents is the most important pathway. Contaminants transported by air from these source regions reach the Canadian North in only a few days.



Tropical countries are major source regions for many POPs due to extensive use of pesticides to eliminate pests that destroy crops or carry diseases.

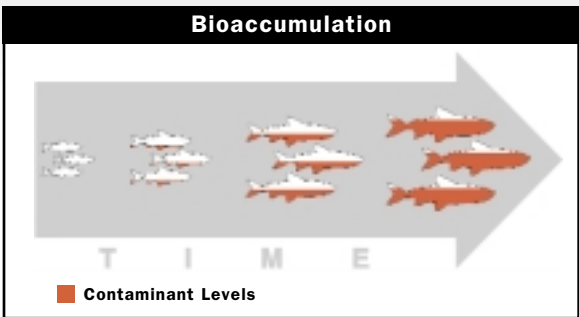
There are local sources of contaminants in the North, such as mines and former military sites. However, these sources cannot account for all the types of contaminants or the wide geographic distribution of contaminants found in the North.

CONTAMINANT LEVELS IN WILDLIFE

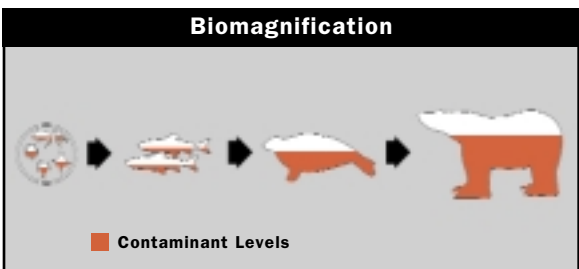
Once in the water or on plant surfaces, contaminants may enter the food chain.

How are wildlife exposed to contaminants?

Some contaminants do not break down in the environment or when eaten by animals or people. Instead, they stay in the body and are usually stored in fatty tissues or certain organs. As an animal continues to consume contaminants over its lifetime, the levels in its body will increase. Therefore, older animals tend to have higher contaminant levels. This is called bioaccumulation.



Animals that eat other animals can build up higher levels of contaminants because the concentration increases with each step along the food chain, from prey to predator. This is called biomagnification.



Contaminants can reach elevated levels in wildlife due to biomagnification, even if they are barely measurable in air, snow or water.



Studies on the levels of contaminants in wildlife have focused on the animals that are important in the diets of people. These animals include fish (e.g. Arctic char, burbot, lake trout, whitefish), caribou, seabirds, seals, whales and polar bears.

The most vulnerable animals are those higher in the food chain. Marine mammals, such as polar bears, whales and seals, usually have higher POPs levels than terrestrial animals, since they are part of longer food chains. These animals have high fat content and live long, so that contaminants can build up in their bodies.

Contaminant levels in polar bears may be producing harmful effects.



EFFECTS ON PEOPLE

What does this mean for the health of Northerners?

People who live off the land and sea can have a much healthier diet than people who do not. Traditional/country food, in many cases, is the primary source of many important nutrients, and is often more nutritious and less expensive than store-bought food. In addition, traditional/country food is strongly linked to the social, cultural and spiritual well-being of Aboriginal peoples.

However, Northerners who rely on some traditional/country foods as a main part of their diets may be exposed to levels of contaminants that are of concern to health authorities. For example, analyses of blood, milk and hair samples of Northerners who consume marine mammals have shown, in some cases, elevated levels of contaminants.

Research is being undertaken in Northern Canada and around the world on the possible health effects of exposure to contaminants. Infants and the unborn child are thought to be the most vulnerable to effects from contaminants.



Photo: H. Huntington

Northern people are at the top of the food chain. Exposures to some contaminants through the consumption of some traditional/country foods are high enough to cause health concerns.



Photo: T. MacIntosh/NWT Archives

Northerners need a clear understanding of the risk of contaminants in traditional/country foods in relation to the benefits of a traditional diet and the consequences of abandoning this diet.

COMMUNICATING TO NORTHERNERS

How is this information getting to Northerners?

Northerners must have access to relevant research results to make informed decisions about contaminants and the consumption of traditional/country foods. Education and communication are important components of the NCP. A partnership approach involving representatives from Northern Aboriginal organizations and the scientific community forms the basis for communicating these results. This approach includes the following components:

Aboriginal organizations – Aboriginal organizations have led in developing communication links with Northern communities.

Scientists – Scientists bring their knowledge of contaminants and results of recent studies to Northerners.

Photo: E. Loring/ITC



Photo: Denendeh National Office/Resource Centre



Communication with communities – The NCP uses several methods to exchange information and ideas between scientists and Northerners and to build awareness of contaminant issues. These include: contacts with individual community members, newsletters and general dissemination of reports containing research results. Also, the development of Northern school curriculum programs on contaminants, and the work of territorial contaminants committees and regional contaminants coordinators have assisted communication efforts.



Photo: Métis Nation – NWT



Community workshops – Workshops are held regularly to communicate information, to help integrate traditional knowledge and scientific information on contaminants, and to identify information gaps related to contaminant issues.

Traditional knowledge – Cooperation among communities and scientists in the planning and management of projects helps to integrate local concerns and traditional knowledge. It also builds local capacity to address common needs and to increase understanding of contaminants issues.

Communications about contaminants and NCP activities is an evolving process, as research results become available and as community needs, priorities and expectations change.



PROTECTING THE FUTURE

What is being done about this issue?

Reduction of contaminant levels in the North requires international action, because many of the contaminants entering Northern Canada come from other countries. Canada is participating in international action on contaminants through:

AMAP – Arctic Monitoring and Assessment Programme

- co-operating in scientific research and policy development with the seven other Arctic countries

UN-ECE – United Nations Economic Commission for Europe – Convention on Long-Range Transboundary Air Pollution

- developing agreements with other countries in the Northern hemisphere to control POPs and heavy metals of concern to the North

UNEP – United Nations Environment Programme – Global Agreement on POPs

- working to find safe alternatives for pest management, and negotiating an agreement on POPs control at the global level.

Work done under the NCP will continue to:

- (1) contribute to actions that will significantly reduce the amount of contaminants reaching the North*
- (2) provide information that assists Northerners in making informed decisions about their food use.*



HOW TO CONTACT US

How can I find out more about the NCP?

For more information about the NCP, please visit our website at www.inac.gc.ca/ncp, or contact the following Northern Aboriginal Organizations or government agencies.

ABORIGINAL ORGANIZATIONS:



Council of Yukon First Nations

Tel: (867) 667-7631 Fax: (867) 668-6577
E-mail: ncp.cyfn@yukon.net



Dene Nation

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