




Indian and Northern  
Affairs Canada

Affaires indiennes  
et du Nord Canada

# What is the Northern Contaminants Program?



Canada 



**Quick Fact:** Pesticides banned in Canada can be found in the Yukon just five days after being emitted in Asia.

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en français.*

# What is the Northern Contaminants Program?

**The Northern Contaminants Program (NCP) works to reduce or eliminate contaminants in traditional foods, and to provide information on contaminants to individuals and communities.**

Indian and Northern Affairs Canada started the Northern Contaminants Program (NCP) in 1991 due to concerns that Aboriginal people and Northerners in general were being exposed to high levels of contaminants through animals important to the traditional diets of Aboriginals. It was also determined that many of the substances and pollutants discovered weren't originating in the North, or even in Canada.

As a result, the program's key objective was determined:

*To work towards reducing and, where possible, eliminating contaminants in traditional/country foods, while providing information that assists individuals and communities in making informed decisions about their food use.*

The NCP provides funds for research and related activities through four main areas of focus that contribute to addressing health and safety issues arising from contaminants in traditionally harvested foods. They are:

- ▶ Human Health Research
- ▶ Environmental Monitoring and Research
- ▶ Education and Communications
- ▶ National/Regional Coordination and Aboriginal Partnerships



## What are contaminants?

Contaminants are something found in a place that it should not be, or in greater amounts than it should be found. It can be natural or man-made, and may be local, or may come from another part of the world.

## What are traditional foods?

Traditional foods are food sources obtained from our local area, and may include fish, caribou, moose, and plants or berries that are grown in the Yukon. The term “traditional food” originates from the traditional sources of food used by Aboriginals in the North.

## Who is involved in NCP?

The NCP is led by Indian and Northern Affairs Canada. The program is run in cooperation with a number of partners including:

<b>Federal departments:</b>	<b>Territorial governments:</b>	<b>Northern Aboriginal organizations:</b>
Health Canada	Yukon	Council of Yukon First Nations
Environment Canada	Northwest Territories	Dene Nation
Fisheries and Oceans Canada	Nunavut	Inuit Tapiriit Kanatami
Indian and Northern Affairs Canada	Nunavik	Inuit Circumpolar Conference — Canada
	Nunatsiavut	

## NCP Yukon Region

Yukoners enjoy many benefits from the NCP program. There have been many Yukon projects funded through NCP, and the projects have provided valuable information about the safety of our food sources and have also contributed to skill development for Northerners and First Nations who play active roles in the completion of these research projects.

# Yukon's focus

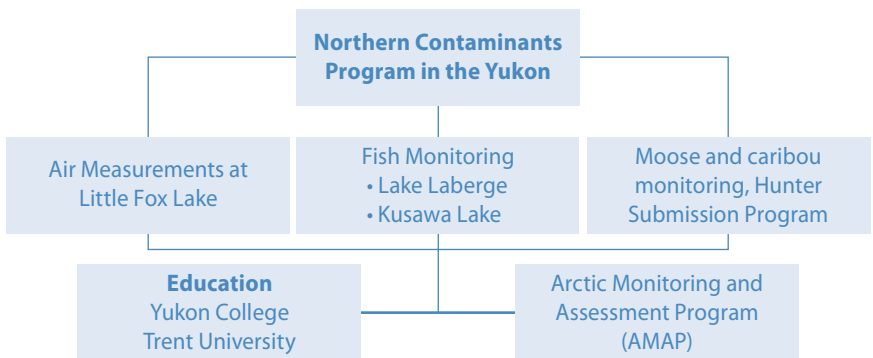
NCP Yukon is focused in three main areas:

- ▶ *Air* — including monitoring of mercury and other emissions in the Yukon's air;
- ▶ *Animals and plants* — researching food chains from water and the land; and
- ▶ *Education* — developing programs to raise awareness of contaminants in our environment, and to raise interest and participation in research in the North.

## What are we doing?

There are a number of research projects and initiatives of great importance to the Yukon. From in-depth research studies to new educational programs, the Yukon is leading the way in contaminants research and development in many areas.

## At a glance



Information from the NCP research is taught at the Yukon College's Northern Contaminants and Wildlife course. The course increases awareness of the Yukon's contaminant issues and provides a local context from which students can pursue their studies.

After NCP research projects are completed, the information gathered is used in research across the world through publications developed by the Arctic Monitoring and Assessment Program (AMAP).

# Selected Yukon Projects At A Glance

## Air

### **Air Measurements at Little Fox Lake**

The Yukon is proud of being the only Air Monitoring Intake station in the Western Canadian Arctic. Beginning in 2007, a station built at Little Fox Lake, north of Whitehorse, keeps track of the mercury levels found in the Yukon air.

Monitoring of mercury is new to the Yukon. The monitoring will be an ongoing project and will help to determine how levels change over time, the role of the atmospheres in transporting mercury to the North and the amount of mercury being deposited into our environment.

Little Fox Lake is contributing valuable data to the development and evaluation of international protocols for mercury emissions and Persistent Organic Pollutants (POP). In particular, this site helps to evaluate whether or not the United Nations (UN) Protocols on mercury emissions are effective.

Mercury exists naturally in our environment, and is released naturally by organic processes. However, the North is extremely susceptible to air contamination due to air patterns that carry pollutants from southern latitudes. As a result, the Little Fox Lake monitoring site is an important tool in ensuring our air and environment is safe for all Yukoners.

## The Big Picture

The monitoring site at **Little Fox Lake** is one of many stations across the globe. The data gathered from these international stations contribute to UN Protocol on emissions and global research and knowledge of airborne contaminants and their long-range transport.



### Legend:

IADN — Integrated Atmospheric Deposition Network

CFL — IPY Circumpolar Flow Lead (CFL) System Study

## Animals and plants

### **Arctic Caribou and Moose Contaminant Monitoring Program**

Caribou and moose are important sources of food in the North. Through the NCP Program, scientists are monitoring these animals to find out whether they remain safe and healthy food choices for Northerners.

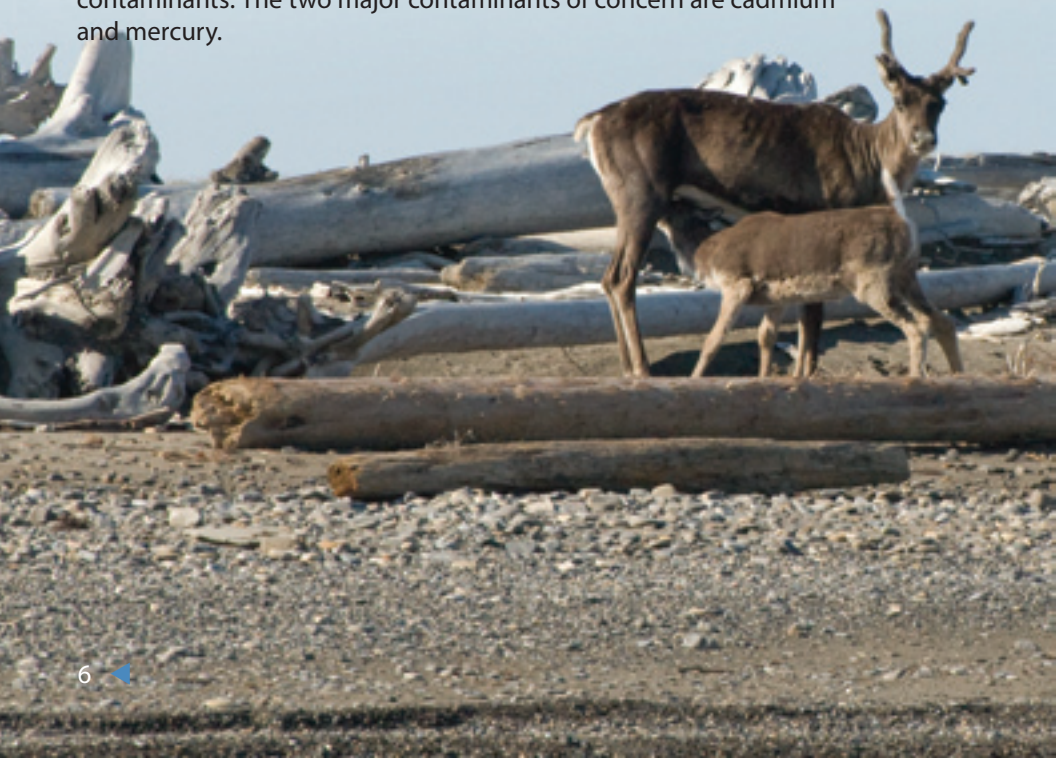
By monitoring contaminant levels found in these animals, we can determine if contaminant levels are changing over time. This research program also helps us to understand how contaminants make their way to the North and how they function here — important pieces of the puzzle to help ensure the safety of our food sources.

### **What Have We Learned?**

Studies have concluded that Yukon traditional foods are safe to eat. The Northern Contaminants Program continues to monitor contaminants in moose and caribou across the Canadian Arctic.

### **What Are We Monitoring?**

The moose and caribou monitoring program looks at a number of contaminants. The two major contaminants of concern are cadmium and mercury.





## **How Do We Measure Contaminants in Animals?**

Tissue samples from moose and caribou are analyzed for a variety of contaminants. The Hunter Submission Program offers incentives to hunters to submit kidney, liver, muscle and incisor samples from their successful moose and caribou hunts.

The Moose and Caribou monitoring program is quite successful in the Yukon. After 15 years, this program has received samples from more than 1,700 animals, providing a great opportunity to look at contaminant levels and trends over time.

## **Future Plans**

The Northern Contaminants Program is continuing to monitor cadmium and mercury (among other contaminants) in caribou and moose across the Canadian Arctic and provides updates to local stakeholders. There are similar studies being conducted, including studies comparing mercury in caribou forage at various latitudes in order to learn more about the presence of mercury in the environment and the food chain. In addition, various education and communication projects focus on providing this information to Northerners in an effective and understandable way.



## Fish

### Fish Monitoring in the Yukon

The third ongoing NCP project in the Yukon is titled “**Long-term Trends of Halogenated Organic Contaminants and Metals in Lake Trout**” This means that lake trout from two Yukon Lakes, Kusawa and Laberge are being tested for their levels of a number of substances that build up in the food chain, including:

- ▶ metals (e.g. mercury, selenium, arsenic);
- ▶ organochlorine contaminants (e.g. PCBs, DDT); and
- ▶ a number of other chemicals and fluorinated organic compounds.

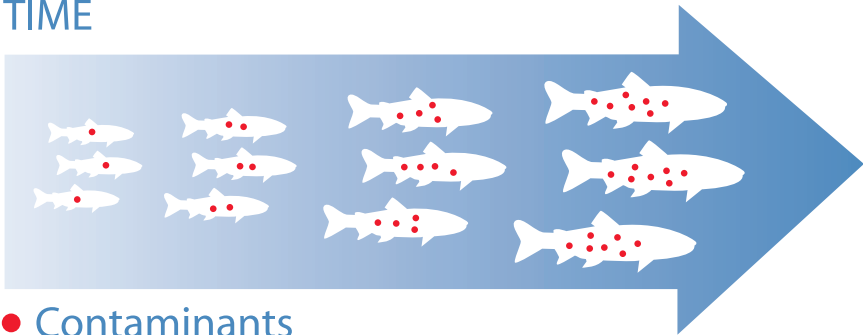
### Why Fish?

Fish are vital to the subsistence diet of Northerners. We want to know if contaminants in fish are increasing or decreasing with time. By watching contaminant trends in lake trout and burbot, we can gain a greater understanding of the potential health impacts of eating fish as part of a northern diet.

### Learning from Food Chains

Lakes are an excellent source to learn more about the build-up of contaminants in the food chain.

## TIME



Since many contaminants are very small, they can easily become attached to fine sediment or nutrients. Most contaminants are stored in the fatty tissue of fish — a process called bioaccumulation.

Recent studies have shown that fish from local lakes are as safe as fish we buy in our grocery stores. Mercury levels are within the guidelines for consumption as set by Health Canada.



## Education

### **Building Capacity Through Education:**

Another major development of the Northern Contaminants Program is the partnership with Yukon College. Data from the NCP has been integrated into courses at the college, offering a local perspective on contaminants, wildlife, and human health. In addition, two new projects are currently being developed.

#### **1) Paraprofessional Courses**

Two paraprofessional level courses offer information on northern contaminants for people living in rural Yukon who are in the health or environment fields. The paraprofessional courses provide valuable knowledge and experience to students without requiring them to complete a certificate program or degree. The first course, Contaminants and Wildlife, was offered in the fall/winter 2008 term. The Northern Contaminants and Community Health course is being offered in 2009.

#### **Partners in Learning**

The partnership is critical to provide the foundation for course development and to ensure it is delivered with the highest of standards. The courses will teach relevant information that applies directly to the Yukon, the North, and the people who live here.

The Yukon is a pilot test for the paraprofessional courses, and if successful, the materials developed may be adapted to be used in the other Territories.

#### **What These Courses Can Offer You!**

The two paraprofessional courses will offer training to front line workers in areas such as wildlife management, lands, environment, and other fields that require a basic knowledge of northern contaminants, including northern environmental and scientific projects. These courses are open to the public, no prerequisites are required, and thanks to Yukon College's technologies in distance learning, this course can be taken in twelve communities in the Yukon.

## **2) Renewable Resource Program**

Yukon College and Trent University are partnering to establish course materials/modules for the existing Renewable Resource Program at Yukon College. This new course material will be developed with current information from the Northern Contaminants Program, and will be offered as a college/University level credit.

The course/module is expected to be tested in the fall of 2009, and will be followed up with a review by Trent University to evaluate whether or not the module will become a full-credit course.

## NCP Across The World

The NCP also provides research and findings to the **Arctic Monitoring and Assessment Programme (AMAP)**, a program that examines contaminant issues across the full Arctic region (Canada, Denmark, Greenland, Finland, Iceland, Norway, Russia, Sweden, and the United States). In order to help ensure the health and safety of Northern Canada, the Government of Canada has become a key participant in this program.

AMAP advises the governments of the eight Arctic countries on matters relating to threats to the Arctic region from pollution, and associated issues.

AMAP was originally established in 1991, and was requested by Ministers of the eight Arctic countries to *“provide reliable and sufficient information on the status of, and threats to, the Arctic environment, and to provide scientific advice on actions to be taken in order to support Arctic governments in their efforts to take remedial and preventive actions relating to contaminants.”*

The eight Arctic countries all design National Implementation Plans. These are plans that outline how each respective country will provide research and information to AMAP.

Leading the way with 51 projects for 2008–2009, the NCP program will provide the majority of the research and results to Canada’s National Implementation Plan. Other Canadian programs conducting research relevant to AMAP in 2008–2009 include ArcticNet and a national research program under International Polar Year (IPY).



## For more information on the NCP, please contact:

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**Quick Fact:** Tobacco contains much higher levels of cadmium than animal sources. Reducing or eliminating smoking is the most effective way of limiting cadmium intake.



