



Data Source: D.Muir, Environment Canada

#### What is happening?

- The graph shows the changes in the levels of three types of organochlorine pesticides in beluga sampled in the Mackenzie Delta between 1982 and 1995.
- Despite major restrictions on the use of the pesticides in North America, the concentrations in the fat of beluga, ringed seals and polar bears are staying the same as in previous years.

#### Why is it happening?

- These organochlorine pesticides enter the Arctic through the atmosphere and in ocean currents. They enter the atmosphere as they are used on crops and for insect control in the south because of the warmer temperatures. They settle out in northern Canada because of the colder temperatures.
- Recent scientific studies show that some of the chemicals entering the Arctic are left over from heavy use in southern Canada and the U.S. The chemicals are released from soils and landfills when the farmers till the soil. This indicates that the input of many of these chemicals will continue for some time.

## Why is it important?

- High levels of the contaminants in beluga and polar bear can cause major effects in the animals and may effect reproduction if they reach very high levels. The chemicals can also cause illness in humans who eat very large amounts of the compounds.
- Recent studies by The Centre for Nutrition and the Environment of Indigenous Peoples (CINE) show that the amount of organochlorines consumed in the Inuvialuit region is low compared to coastal communities in Nunavut because the amount of beluga eaten is lower.
- Terrestrial animals, such as caribou, moose and muskox, have very low levels of organochlorine contaminants. The higher levels in the marine system are due to the longer food chain, which allows for biomagnification of the chemicals from phytoplankton to the top of the food chain, and the high levels of fat in the animals.

## Technical Notes

- These data are from Dr. Derek Muir, Environment Canada in Burlington, Ontario. He is conducting a study on contaminants in ringed seals in 2001 with the coastal communities in the Inuvialuit to see if the levels have changed in the last twenty years.
- The data on the graph are based on the analysis of fat samples from 5 to 35 beluga collected in the Mackenzie Delta.
- Indicator text prepared by Colin Macdonald for the Co-op.

## See also:

- Peregrine Falcons
- Mercury and Marine Mammals
- Cesium in Caribou

Off-site: Status of Contaminants in the Arctic Borderlands

---

**Data added:** n/a