



Embattled Arctic Ecosystems

By [Paul Webster](#) Mar. 12, 2003 , 12:00 AM

The biggest ever study of Arctic pollutants paints a picture of an ecosystem under siege--with potentially grave consequences for denizens of Earth's northernmost reaches. For the first time, long-standing villains such as pesticides, polychlorinated biphenyls (PCBs), and mercury have been linked to weakened immune systems and developmental deficits in Inuit children.

The findings, presented at a symposium on the second Canadian Arctic Contaminants Assessment Report (CACAR II) last week in Ottawa, are the latest fruits of Canada's 10-year, \$38 million Northern Contaminants Program (NCP). In 1997, CACAR I found that a bevy of pollutants--including the pesticides DDT and chlordane, as well as PCBs and other industrial chemicals--are building up in the Arctic. Because these compounds degrade less readily in frigid conditions, levels in the Arctic are among the highest in the world.

CACAR II ratchets up the concern. Particularly disturbing are early findings from a study in Nunavik, Quebec, funded by NCP and the U.S. National Institutes of Health. Toxicologist Éric Dewailly of the University of Quebec Medical Center tracked infections in 199 infants from birth to 12 months. His team found that the risks of two infections--upper respiratory and gastrointestinal--were significantly elevated in babies whose mothers had the highest blood levels of DDE, a pesticide.

Another study led by colleague Gina Muckle found subtle deficits in memory in infants whose mothers had higher levels of PCBs; heavy metals such as lead and mercury appeared to lengthen the amount of time the babies needed to remember information and to reduce their ability to remember while distracted.

Although CACAR II notes that the levels of certain pollutants, including DDT and chlordane, are waning in parts of the Arctic, previously unidentified compounds are on the rise. The study has revealed "a huge sweep of new contaminants" entering Arctic ecosystems, says Lars Otto Reiersen, Oslo-based director of the Arctic Monitoring and Assessment Program. Of greatest concern, perhaps, is a rapid rise in polybrominated diphenyl ethers, a group of chemicals used as fire retardants in electronics that have been linked to thyroid defects in lab rats.

Despite the emergence of new threats, it appears unlikely that Canada will extend NCP, which is set to expire at the end of this month. "The government is walking away from its key environmental and health research program in northern Canada," asserts Terry Fenge, research director for the Inuit Circumpolar Conference, which promotes indigenous interests.

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