



In this Oct. 2005 file photo, a sign warns of toxic substances in Talfourd Creek on the Aamjiwnaang First Nation reserve near Sarnia, Ont. (Carlos Osorio/AP)

<http://www.cbc.ca/news/background/aboriginals/health.html>

In Depth

Aboriginal Canadians

Chemical valley

Aamjiwnaang First Nation in Sarnia sounds alarm over toxins

April 1, 2008

[By Mary Ann Colihan, CBC News](#)

Members of the Aamjiwnaang First Nation in Sarnia, Ont., think their reserve, which recorded the lowest rate of live male births in the world (two girls born for every boy) and high rates of death, miscarriage and disease, is beyond the saturation point for exposure to pollutants, and the community is making a public plea for action.

The First Nation held a symposium on the issue, funded in part by Health Canada, from March 25 to 27 in Sarnia. Leading scientists and environmental groups from across North America made presentations at the event, which highlighted the First Nation's concerns about the health of the Aamjiwnaang and their neighbours in an area known as "Chemical Valley."



A sign for the Aamjiwnaang First Nation Resource Centre is located across the road from a chemical plant near Sarnia, Ont. (Craig Glover/CP)

Data from Environment Canada's National Pollutant Release Inventory (NPRI) — the inventory of pollutants released, disposed of and sent for recycling by facilities across the country — show the reserve is ground zero for Ontario's heaviest load of air pollution. In 2005, 131 million kilograms of pollutants were released from 46 plants in Sarnia's Chemical Valley, the inventory says.

Chemical Valley plants also collectively emitted 16.5 million tonnes of greenhouse gases in 2005, according to NPRI figures. This represents 21 per cent of the total for Ontario, and more than the entire greenhouse gas emissions of British Columbia.

More worrisome for the Aamjiwnaang, exposure to toxic pollutants for people in the region is the highest in the province. The report says that 60 per cent of the 5.7 million kilograms of toxic air releases recorded in 2005 were within a five kilometre radius of the reserve. These pollutants are known to cause cancer or are associated with reproductive and developmental disorders among humans.

According to a [2007 report by Ecojustice](#) (formerly the Sierra Legal Defence Fund), *Exposing Canada's Chemical Valley: An Investigation of Cumulative Air Pollution Emissions in the Sarnia, Ontario Area*, some of the area's chemical, petrochemical and power plants pollute more than others.

"We see the same names over and over on the list of Top Five," says Elaine MacDonald, the senior scientist at Ecojustice, which is Canada's largest non-profit environmental law organization. The companies that lead in emissions of carbon dioxide, volatile organic

chemicals, hormone disruptors and heavy metals include Imperial Oil, Nova, Shell, Suncor and Cabot, MacDonald says.

Dean Edwardson, general manager of the Sarnia-Lambton Environmental Association, an industry group that represents 22 of the largest chemical and petrochemical companies in Chemical Valley, says the NPRI data has limitations.

"Some of the information that gets reported is estimated and may not be based in reality," says Edwardson. "It is industry's best attempt at getting data and I'm not sure there is a better way, but NPRI is a snapshot."

Nevertheless, when research about the skewed birth ratio was published in peer-reviewed journals in 2005, scientists from around the world started to call. The Aamjiwnaang pushed Health Canada to help fund the symposium on the issue that was held at the end of March.

Symposium

The Aamjiwnaangs' objective was to address the evidence of injury to health from exposures to chemical pollutants. They invited scientists from Canada and the U.S. and environmental activists from contaminated communities across the globe to the symposium to examine the data.

Ron Plain, the aboriginal program co-ordinator for Environmental Defence Canada and a founding member of the Aamjiwnaang environment group, says a mix of racism and poor municipal land use contributed to the reserve shrinking to live in industry's backyard. Another health survey pegged the band's miscarriage and stillborn rate at 39 per cent, he says.

The Aamjiwnaang also want to prove that the negative health effects are not just being felt on the 850-member reserve. Isaac Luginaah, an associate professor of geography at the University of Western Ontario whose studies focus on the environment and health, compared London and Sarnia hospital admissions data from 1996 to 2000. General hospital admissions were 47 per cent to 90 per cent higher for Sarnia residents. The difference in admission rates for cardiovascular and respiratory diseases in Sarnia were even more extreme — up to 300 per cent greater than in London.

Sarnia Mayor Mike Bradley is among those calling for action on the health problems, saying they are urgent and regional in nature. He has criticized Health Canada for trying to exclude the Aamjiwnaang and the local occupational health clinic from ongoing talks about developing a comprehensive health survey for Chemical Valley.

"There is a price to pay and we have to be realistic," Bradley says. "But when we talk about alliance, there should be no one missing in action."

Jim Brophy is the medical director of the Occupational Health Clinics for Ontario Workers in Sarnia, a Workplace Safety and Insurance Board-funded clinic that provides occupational health services and information. Brophy documented the high instance of asbestos-worker mortality in

Sarnia — the highest in Canada — and sees a parallel between the old denials that asbestos made people sick and the reluctance to face the mounting evidence of disease from pollution.

The industry Sarnia-Lambton Environmental Association also supports conducting a proper, comprehensive survey of the impact of industrial pollution on the health of residents. It recognizes the area was a hotbed of mesothelioma (cancer from exposure to asbestos), and says the concerns of workers and the public are of great importance.

"We want to see a health study that supports or refutes the link between chemical exposure and health," says Edwardson.

Looking for clues

Dr. Warren Foster, an expert in reproductive health at the Hamilton Health Sciences Centre, says Canadian researchers are not sure why the sex ratio of 106 boys to 100 girls in Canada is fairly consistent except in areas such as the Aamjiwnaang community. His research points to what he calls endocrine toxicants. These are endocrine disruptors — chemicals that mimic hormones like estrogen, and that are found in pesticides, organo-chlorides, heavy metals and plastics.



Children from the Aamjiwnaang First Nation near Sarnia, Ont., play basketball behind the Band Office, which is located across the road from a chemical plant. The people of the Aamjiwnaang First Nation have a birth ratio of girls to boys that is two-to-one, a scientific anomaly. (Craig Glover/CP)

Dr. Foster says in-vitro fertilization research at Hamilton's Centre for Reproductive Care at McMaster University raises another possibility.

"Maybe the male embryo develops at a faster rate than does the female embryo and, as a result, may be more sensitive to environmental insult," he says. "Thus we may be losing males before we move into a clinical pregnancy."

Dr. Ted Schettler, a physician with the Science and Environmental Health Network, a U.S. network of environmental groups, notes that children, from fetus onward, are disproportionately susceptible to contaminants. Early exposure for children, even in the womb, can be linked to diseases that show up later in life, and failure to conceive is part of this continuum, he says.

The birth ratio is a clear signal that something is very wrong in Sarnia, he says.

"I think there is an enormous problem with not considering the cumulative nature of the emissions," says Schettler. "Some contaminants released are known carcinogens. When you mix them together in this complex soup that people regularly breathe here, the toxicology of that mixture is far more complicated than if we think about these single chemicals by themselves."

Calls for action

Michael Gilbertson recently completed his PhD thesis, a forensic audit of the Great Lakes Water Quality Agreement, a 1972 agreement that commits Canada and the U.S. to restore and maintain the chemical, physical and biological integrity of the lakes. The thesis is based on his 34 years with the Canadian federal government, including 16 years with the International Joint Commission, which resolves disputes relating to the use and quality of Canada-U.S. boundary waters. He says we know enough about risk factors and now political activism is more important.

"We have to form a new social movement," Gilbertson says. "We heard the stories from other communities that have been highly exposed. Now we have to organize to bring about political change."

Getting polluters to cut emissions is a challenge. Ecojustice says only 11 per cent of Chemical Valley plants reported to the federal government that they planned to reduce emissions in the 2006 to 2008 period, and 30 per cent of plants that are listed in the NPRI said they would increase emissions.

But SLEA thinks these statistics may not tell the full story. Edwardson says improvements require capital, and companies can be leery of making promises to the government that might not be kept.

"The problem with those numbers is that they are projections," he says. "There may be a reluctance to make improvements if you don't have the money in-house. Companies are always looking to make process improvements here."

Dr. Devra Davis, author of *The Secret History of the War on Cancer*, spoke at the symposium of communities like Reveilletown and Mossport, La., that were contaminated by chemical industry and where people chose to move away en masse. "We lost the ability to document the nature of the problem," Davis said.

Ron Plain wants the Aamjiwnaang reserve to stay where it is.

"Aamjiwnaang could be a model for the world, where a community and industry can work and live together prosperously," says Plain. "But industry has to take that initiative to begin to implement the best available technologies and lose their excuse that it is not economically viable."