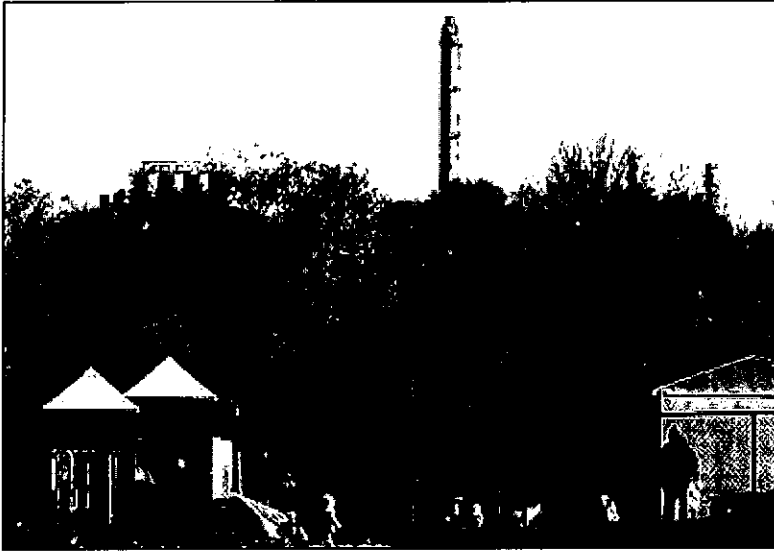


Canadian natives blame toxins for fewer s

Tribal reserve is next to country's largest petrochemical region



Carlos Osorio / AP

Children play outside t
First Nation Reserve so
across the border from
Mich. For nearly half a
reserve's land has bee
completely surrounded
largest concentration o
manufacturing.

By Matt Crenson

AP Associated Press

Updated: 11:18 a.m. ET Dec. 19, 2005

AAMJIWNAANG FIRST NATION, Canada -
Growing up with smokestacks on the horizon,
Ada Lockridge never thought much about the
pollution that came out of them.

She never worried about the oil slicks in Talfourd
Creek, the acrid odors that wafted in on the
shifting winds or even the air-raid siren behind
her house whose shrill wail meant "go inside and

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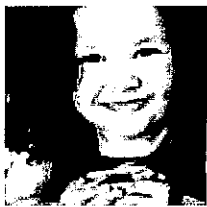
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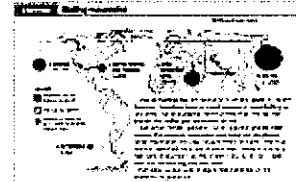
Now Lockridge worries all the time.

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A budding environmental activist, she recently made a simple but shocking discovery: There are two girls born in her small community for every boy. A sex ratio so out of whack, say scientific experts who helped her reveal the imbalance, almost certainly indicates serious environmental contamination by one or more harmful chemicals.

The question: Which ones? And another, even more pressing question: What else are these pollutants doing to the 850 members of this Chippewa community?

Lockridge and her neighbors live just across the U.S.-Canada border from Port Huron, Mich., on the Aamjiwnaang First Nation Reserve. For nearly half a century, their land has been almost completely surrounded by Canada's largest concentration of petrochemical manufacturing.

Much of their original reserve, founded in 1827, was sold out from under them via questionable land deals in the 1960s. It is now occupied by pipelines, factories and row upon row of petroleum storage tanks.

The area is so dominated by the industry that it is referred to on maps

and in local parlance as "Chemical Valley."

About two years ago, Suncor Energy — which already operates a refinery and petrochemical plant next to the Aamjiwnaang reserve — proposed adding another factory to the mix, an ethanol plant to be built on one of the few undeveloped parcels adjoining the community's property.

Biologist asks about boys

Lockridge and other members of the band joined to oppose the plant. They asked biologist Michael Gilbertson to look at a binder full of technical information about air, water and soil contamination on the reserve.

In a conference call, he reported that the data showed elevated levels of dioxin, PCBs, pesticides and heavy metals including arsenic, cadmium, lead and mercury.



Carlos Osorio / AP

Ada Lockridge greets Shyanna Joseph, left, and her sister Joselyn Joseph as they arrive home from school on the Aamjiwnaang First Nation Reserve last October.

Almost as an afterthought, he asked a question: Had anybody noticed a difference in the number of girls and boys in the community?

At the other end of the line, the Aamjiwnaang and their allies were suddenly abuzz.

"All of a sudden everybody in that room started talking," said Margaret Keith, a staffer for the Occupational Health Clinic for Ontario Workers, a public health agency.

Somebody pointed out that the reserve had fielded three girls' baseball teams in a recent year and only one boys' team. Lockridge thought about herself and her two sisters, with eight daughters among them and only one son.

Sex ratio as chemical indicator

The question was not as offhand as it seemed. "I had been interested in sex ratio as an indicator — a very sensitive indicator of effects going on as a result of exposure to chemicals," Gilbertson said in a recent interview.

Gilbertson explained that certain pollutants, including many found on the Aamjiwnaang reserve, could interfere with the sex ratio of newborns in a population. Heavy metals have been shown to affect sex ratio by causing the miscarriage of male fetuses. Other pollutants known as endocrine disrupters — including dioxin and PCBs — can wreak all sorts of havoc by interfering with the hormones that determine whether a couple will have a boy or a girl.

If some pollutant was skewing the distribution of girls and boys in her family and her community, Ada Lockridge thought, what else could it be doing?

Statistics indicate that one in four Aamjiwnaang children has behavioral or learning disabilities, and that they suffer from asthma at nearly three times the national rate. Four of 10 women on the reserve have had at least one miscarriage or stillbirth.

"I was throwing up thinking about what was in me," said Lockridge, who is 42. "I cried. And then I got angry."

She got a copy of the band membership list, and tallied the number of boys and girls born in each year since 1984. Sure enough, the percentage of boys started dropping below 50 percent around 1993. It is now approaching 30 percent, with no sign of leveling off.

The finding was significant enough to warrant a paper in Environmental Health Perspectives, a well-regarded scientific journal. Lockridge, who has worked as a home health aide and carpenter's assistant, was listed as an author.

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