

**NOTE:** The community-based research and advocacy of Alaska Community Action on Toxics on St. Lawrence Island is featured in this August 3, 2015 article in the New York Times.

<http://www.nytimes.com/2015/08/04/us/native-alaskans-study-and-clean-up-a-legacy-of-pollution.html?hp&action=click&pgtype=Homepage&module=second-column-region&region=top-news&WT.nav=top-news&r=0#story-continues-1>

## The New York Times

### Native Alaskans Study and Clean Up a Legacy of Pollution

By KIRK JOHNSON | AUG. 3, 2015

[The article begins with a five-minute video. Here is the caption for the video and a link.]:

#### Science at the End of the Earth

A team of scientists spent five days collecting and dissecting fish on remote St. Lawrence Island in Alaska to study the effects of pollution from old military installations on the habitat.

By JIM WILSON, KIRK JOHNSON and CHANNON HODGE on Publish Date August 3, 2015.

Photo by Jim Wilson/The New York Times. [Watch in Times Video »](#)

ST. LAWRENCE ISLAND, Alaska — America's Far North cherishes its image of wild purity in a landscape so vast it can sometimes seem barely touched by people. But the roughly 600 military installations across Alaska — some dating from World War II, others built during the Cold War — tell a different story, in polluted sites that were never fully cleaned up, and the related health problems that have lingered and festered.

Bases and listening posts scattered from the far northern tundra to remotest atolls of the Aleutian Islands used or stockpiled cleaning solvents and [pesticides](#), chemical warfare agents and unexploded ordnance. Some was left behind in remote or unpopulated areas when geopolitical tensions eased and bases were abandoned, others were merely fenced off with signs and warnings.

One of the biggest and most polluted military sites is here on St. Lawrence Island in Alaska's farthest western reaches close to the former Soviet Union. Here, a 4,800-acre radar station, Northeast Cape, bristled with electrical components containing polychlorinated biphenyls, better known as PCBs, that were later linked to [cancer](#) and banned in many countries. Tiny fish living downstream from the site, eaten by birds and larger fish that islanders harvest for food, are loaded with PCBs, scientific tests have found. And PCB levels in residents are multiple times higher than in most other places in the nation, studies show.

[Here the article offers a slide show with ten photos.]

### Searching for Signs of Lingering Pollution in Alaska

What happened here back then was secret. But in places, like this island in the Bering Sea with a population of just 1,500, the plight of residents like Vi Waghiyi and her family is in many ways just as hidden now as it was when the troops of the old Air Defense Command first came ashore in the early 1950s.

“We were the eyes and ears of the world, and we’re proud of that, but now we have a crisis,” said Ms. Waghiyi (pronounced WAH-guh-ye), 56, a thin, soft-spoken woman who lives in Savoonga, a village of mostly Yupik Alaska Natives on St. Lawrence’s north coast. Five people in Ms. Waghiyi’s extended family have received diagnoses of various forms of cancer in a community of about 720 people.



Medical researchers and residents do not blame the military for everything. As in other Native American communities, alcohol and [tobacco use](#), and limited access to medical care — the nearest doctor is a 45-minute plane ride away on the mainland — complicate the picture. Traditional foods like walrus and whale also expose residents in Savoonga and the island’s other village, Gambell, to toxic substances because those animals eat fish and plants contaminated with pollutants that drift north from elsewhere on the planet.

Over the last few years, the United States Army Corps of Engineers has spent more than \$110 million cleaning up Northeast Cape. But the legacy of its impact lives on.

Annie Alowa, who lived in Savoonga and died of cancer in 1999, led a one-woman crusade to clean up Northeast Cape, mainly by refusing to be quiet about it. When newer technology made the old listening devices obsolete and the base closed in 1972, barrels of chemicals sat in the elements for decades or were simply plowed under.

Ms. Alowa's rallying cry helped spur the creation in 1997 of Alaska Community Action on Toxics, which works to clean up of military sites by involving residents like Ms. Waghiyi, the group's environmental health and justice program director.

St. Lawrence Island residents like Eugene Toolie, 77, who was hired as a young man in the 1970s during the base's decommissioning, are now speaking out about what they saw. "They took all those barrels and just buried them," Mr. Toolie said on a recent afternoon, gesturing up toward the mountain where the radar panels once stood.



A ninespine stickleback fish is seen through a magnifying lens on a dissection table. Scientists found elevated levels of PCBs, which have been linked to cancer, in fish on St. Lawrence Island, the site of military installations dating from World War II and the Cold War.

Credit Jim Wilson/The New York Times

The group of scientists who came to the island in June to study the pollution said they were also listening to the islanders' stories. Past research in indigenous communities, the researchers said, was at times another kind of exploitation, which only advanced scientists' careers or boosted grant-funding, sometimes without really helping native people.

The tribal president in Savoonga, Paul Rookok, phrased it even more bluntly: "They used our people to get more money," he said.

The research now underway at Northeast Cape, however, includes community information sessions about what the research is for, what it might turn up and whether it should be shared with the world.

"They are involved every step of the way, from deciding what are the most critical issues to investigate, to data collection, to reporting results back to the communities and getting their

permission to share those results via presentations and publications,” said Frank von Hippel, a professor of biology at the University of Alaska who was part of the research team.

Tiffany Immingan, a 20-year-old Savoonga resident who trained with Professor von Hippel as a lab technician in a course he taught in Nome, said the scientific help and the new approach were both welcome.

“There’s a burden here we don’t know how to deal with,” she said as she walked across the tundra near Northeast Cape on a recent morning. “We need closure,” she added.

In some ways, Ms. Immingan and the other scientists were investigating secrets hidden in plain sight: the fish that abound in the streams near the old base. If the fish had genetically adapted to the toxic runoff they had been living and reproducing in for decades, might there be a lesson for the human population? Was there a kind of defense mechanism at work on the island?



Tiffany Immingan, 20, an island resident, welcomed the scientific help to explain longtime health problems. "There's a burden here we don't know how to deal with," she said. Credit Jim Wilson/The New York Times

“An individual fish is responding to the contamination, and the organism is responding over generational time,” said John H. Postlethwait, a professor of biology at the University of Oregon and one of the team’s three principal investigators. “I want to see if genes can be expressed to protect the people, too — that’s my dream,” he added.

So Professor Postlethwait and the other members of the team — three biologists and three technicians — flew in June from Nome, 45 minutes away, in a small chartered plane filled with their fish traps, lab equipment, water tanks and boxes of macaroni and cheese.

They watched as the charter crew dumped their equipment on the old military airstrip and flew away. Then they pitched their tents and went to work, through five days of 20-hour sunshine, bone-chilling wind, clouds of mosquitoes and mornings spent drinking coffee huddled in the lab tent around a two-burner [propane](#) stove.

They trapped blackfish and another species, the ninespine stickleback, and dissected their catches on the tundra — sometimes lying belly down to seek shelter from the wind — parceling out tiny tissue samples and organs to take back for study. Their project, which began here a few years ago, is funded by a grant from the National Institutes of Health and was expanded this year to take in a larger sampling of fish.

“I’ve worked in harsher conditions, but I’ve never done a tedious task in such conditions,” said Lauren Smayda, 32, a research technician from the University of Alaska, after a day on the tundra. “You have to get creative,” she said.

But the toxic chemicals keep coming.

Through a perverse trick of the global jet stream, places across the Far North like St. Lawrence are also dumping grounds for airborne pollutants from industrial sites around the world. Those atmospheric pollutants distill out as particles, falling to the ground or into the sea. And because the winds here mostly blow from the west, the pollution probably originated in Asia, where regulation is in many places weak and pollution is poorly studied.

“There’s really not a clear picture,” said Dr. David O. Carpenter, the director of the Institute for Health and the Environment at the State University of New York at Albany, who is conducting a health research project on St. Lawrence but who was not on the trip here in June. “And the even more difficult task is figuring out what you can do about it.”

The only certainty, Ms. Waghiyi said, is that hard choices will have to be faced, sooner or later. If cancer-causing toxic chemicals are indeed coming in from the sea, she said, then the natural diet that has sustained people here for thousands of years is no longer viable.

“Our traditional foods are killing our people,” she said. “But without our traditional foods, we die as a culture.”