

Health Consultation Summary

Northeast Cape, St. Lawrence Island, Alaska

Evaluation of potential health impacts of exposures to chemicals from the Formerly Used Defense Site (FUDS) at Northeast Cape

The Native Village of Savoonga asked the Agency for Toxic Substances and Disease Registry (ATSDR) to evaluate the possible health effects from potential exposure to chemicals found at two formerly used defense sites (FUDS) on St.

Lawrence Island. This summary focuses on ATSDR's findings of the former military surveillance and communication station at Northeast Cape. The military operated at Northeast Cape from the 1950s – 1970s. Currently, no one lives at Northeast Cape year-round. Seasonal dwellings are used for subsistence hunting, gathering, and fishing during the summer months (June, July, and August). People lived year-round in the Native Village of Northeast Cape in the past, and St. Lawrence Island residents would like to reestablish a year-round community at Northeast Cape in the future.

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What are the community concerns?

ATSDR staff started speaking with groups and individuals on St. Lawrence Island in 2010 to learn their concerns. ATSDR staff visited Northeast Cape once with Tribal Council members, and visited Savoonga six times to meet with Tribal Council members and village residents. The concerns raised guided our investigation.

We heard concerns about:

- cancer and birth defects
- eating fish from Northeast Cape
- eating greens and berries from Northeast Cape
- soil and surface water in Northeast Cape
- scientific research that shows that levels of contaminants in Tribal members' blood are higher than in other populations
- access to health care on St. Lawrence Island

What did ATSDR do?

In response to concerns raised by Tribal Council and village residents, ATSDR staff looked at reports and information including:

- Community participatory research reports
- Alaska Cancer Registry reports
- Alaska Birth Defects Registry report



- Scientific research on PCBs in people's bodies
- Contractor's remedial investigation reports
- US Army Corps of Engineers reports
- Bristol Environmental Remediation Services cleanup reports
- Data from the Native American Lands Environmental Mitigation Program (NALEMP)

From these reports, we reviewed data for chemicals in soil, surface water, plants, and fish. We screened data from the following chemicals: metals, polycyclic aromatic hydrocarbons (PAHs), pesticides, and polychlorinated biphenyls (PCBs); and reviewed health outcome data from the Registry reports.

What did ATSDR find?

Our investigation revealed five findings.

No apparent Health hazard

1. Eating fish from Northeast Cape in the summer (3 months) is not expected to harm people's health.

The amount of chemicals measured in egg, head, and fillet samples of Dolly Varden char and pink salmon are not high enough to be harmful. We did not consider blackfish samples here because Tribal members do not eat blackfish.

What can be done?

- ATSDR recommends Tribal members continue to eat fish from the traditional seasonal fishing grounds at Northeast Cape because subsistence fish have many health and cultural benefits.
- If Northeast Cape becomes a year-round community in the future, ATSDR recommends collecting and analyzing additional edible fish samples.

2. Eating greens and berries from Northeast Cape year-round is not expected to harm people's health.

The amount of chemicals in the plants was not high enough to cause risk for non-cancer health effects. Our calculations showed a low increased cancer risk over a lifetime of exposure of eating greens and berries from Northeast Cape. We emphasize that very few (7) edible plant samples were analyzed for PAHs and they may not represent all plants eaten from Northeast Cape. Based on the information available, the health and cultural benefits of a subsistence diet may likely outweigh a poorly characterized risk.

What can be done?

- ATSDR recommends Tribal members continue to eat greens and berries harvested from many areas. In addition, we recommend taking usual public health precautions when harvesting and processing wild or cultivated produce such as:
 - » Discarding outer leaves (if possible).
 - » Washing hands well after harvesting plants from the soil.
 - » Thoroughly rinsing plants or peeling before eating or processing them.
- If Northeast Cape becomes a year-round community in the future, we recommend collecting and analyzing additional edible plant samples.

3. Accidentally ingesting soil and drinking Suqitughneq (Suqi) River surface water are not expected to harm people's health.

There are not enough contaminants in soil or Suqi River surface water to be harmful if small amounts of water are swallowed while in or using the water.

What can be done?

- If Northeast Cape becomes a year-round community in the future, ATSDR recommends collecting Suqi River surface water samples before the river is used as a drinking water source.

4. There is not enough contact with site contaminants to suggest that exposures are contributing to cancer and birth defect rates.

ATSDR worked with the Alaska Department of Health and Social Services to review the cancer and birth defects registries data for Gambell and Savoonga. Cancer and birth defect rates are similar to rates in other Native Alaskan communities in the southwest region of Alaska (see call out boxes).

- The number and type of cancer cases in Savoonga are what we would expect to see in these communities.
- The types of cancers in Savoonga are not related to the types of contaminants found in the Northeast Cape environment.
- It is difficult to say if the numbers of birth defects seen in Gambell and Savoonga are what we would expect to see; the rates appear similar. However, the state is revising how birth defects rates are reported.

Box 1. General cancer information

Cancer is a general name for more than 100 diseases. All cancers start because abnormal cells grow out of control. But *why* they grow out of control is something we don't always know. Different cancer types have different causes.

One in two men will develop some type of cancer in their lifetime; one in three women will.

According to the [American Indian Cancer Foundation](#), people can do things like these to prevent cancer or find it early:

- Get recommended cancer screenings
- Get recommended vaccines to lower cancer risk
- Avoid tobacco, limit alcohol, eat fruits and vegetables, keep a healthy weight, be physically active

Box 2. General information on birth defects

About one in every 33 babies is born with a birth defect.

For most birth defects, we think they are caused by a mix of factors, but we don't fully understand how these factors might work together to cause birth defects.

These factors include our genes (biological traits from our parents), our behaviors, and things in the environment.

A woman can do things like these before and during pregnancy to increase her chance of having a healthy baby. She can

- See a health provider regularly
- Take a multi-vitamin every day
- Not drink alcohol, smoke, or use street drugs
- Talk with a health provider about any medications she is taking

ATSDR agrees with Alaska Department of Public Health's (ADPH) finding that the PCB concentrations in St. Lawrence Island residents are unlikely to cause adverse health effects. Following an analysis published in a [2003 Epidemiology Bulletin](#), ADPH found that PCB concentrations in residents' blood are in the expected range for a population with a healthy northern subsistence lifestyle centered on fish and marine mammal consumption.

PCB concentrations detected in St. Lawrence Island residents are similar to those of other Alaska Native populations that have been assessed, as well as to those measured in other arctic populations.

What can be done?

- ATSDR recommends Tribal members continue to eat fish and marine mammals from traditional seasonal fishing grounds at Northeast Cape and other fishing and hunting areas because of the health and cultural benefits.

For more information or copy of the full report contact

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What is ATSDR?

The Agency for Toxic Substances and Disease Registry (ATSDR) is a federal public health agency of the U.S. Department of Health and Human Services. ATSDR works with other agencies and tribal, state, and local governments to look at the way health may be affected in communities where chemicals have been released to the environment.