

Alaska Wild Foods Safety Program Budget

Title: Wild Foods: Monitoring and Education

Funding: \$6.0 Million per year over 5 years

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Background

It is becoming more apparent that federally funded research on contaminants in wild foods is not answering fundamental questions of public health and in some cases creating more questions such as:

- “Is our harvested food safe to eat?”
- “Are our children protected from environmental contaminants?”
- “Our international importers want to know if Alaska salmon is safe, what do we tell them?”
- “Are contaminants causing cancer and other diseases in rural Alaska?”
- “Do the benefits of eating wild food outweigh the potential risks of contaminants that may be found in harvested food?”

Scientists tell us that potentially harmful contaminants are being found in Alaska’s water, air, and wildlife. The most serious contaminants include manufactured chemicals such as pesticides, PCBs, and dioxins and furans (all known as persistent organic pollutants or POPs), and mercury. These reach Alaska primarily by travelling long distances from lower latitudes to be deposited in the U.S. Arctic. Alaskans increasingly voice concerns that these persistent pollutants are entering the food chain from both global and local sources. Observations from traditional knowledge confirm that unprecedented and unexplained changes are increasingly reported throughout the state.

We lack adequate information on the current levels or the adverse effects of these chemicals on Alaska’s fish and wildlife and the potential exposure and impact of these chemicals on Alaskans. We do, however, know that Native subsistence diets not only provide excellent nutrition but are also the basis for cultural traditions, values and beliefs. There is no western, scientific evidence to date that proves these contaminants are having any negative affect on people living in Alaska. However, data on human health and contaminants from Canada and other Arctic countries has fueled concerns by Alaskans about the health of their wild foods.

We also know that Alaskans are extraordinarily dependent upon the health of our resources. Alaska’s waters and resources are the backbone of Alaska’s economy from commercial and sport fisheries to tourism. These same resources are the heart of the subsistence lifestyle, and vitally important for nutrition, cultural integrity, spiritual well being, and the quality of life Alaskans treasure. Alaskans are passionately committed to maintaining these wild and abundant resources that the very word “Alaska” symbolizes. Like other Northern Countries, Alaska needs to have a coordinated approach to answer these pressing questions. We have a responsibility to help Alaskans make informed dietary choices.

Unfortunately, the diverse funding history of different federal agencies has resulted in uncoordinated studies about contaminants that do not answer basic questions about human health and children’s well being. These questions can be effectively addressed only by close collaborative partnership

among state, federal, native and other interests. There is broad agreement developing now in Alaska to forge a program like Canada's Northern Contaminants Program, in which these interests work together to identify, direct, and fund the priorities of Alaskan residents.

The partners involved in this funding proposal include: Alaska Native Science Commission, Alaska Native Health Board, Alaska Native Tribal Health Consortium, Alaska Federation of Natives, Alaska Tribes, Alaska Inter-Tribal Council, University of Alaska, Native American Fish and Wildlife Society, United Fisherman of Alaska, U.S. Departments of Health and Human Services, U.S. Environmental Protection Agency, Agency for Toxic Substances & Diseases Registry, Center for Disease Control, National Institute of Health, National Institute of Environmental Health, National Academy of Science, National Oceanic and Atmospheric Administration, U.S. Department of Interior, U.S. Department of State, Alaska Departments of Environmental Conservation, Health and Social Services, Fish and Game, and Education, Alaska Marine Mammal Commissions and affected communities.

Many organizations in Alaska including state agencies, regional representatives from federal agencies, private organizations and Alaska Native organizations are actively engaged in a process to establish an Alaska Wild Foods Safety Program. The program would be managed through a collaborative effort of representatives from state and federal agencies including universities, Native organizations, fishermen and others involved in contaminant issues and concerns. The program would coordinate efforts to determine what, if any, risks may be involved in consuming traditionally used resources, and to help protect the fish and wildlife, human health, and especially children's well being. Alaska Native groups are holding a workshop in May to make recommendations on the program and define their roles and level of involvement. Native organizations must be full partners in the research, monitoring and education efforts related to wild foods and their input and participation is critical to a successful program.

This proposal would help develop a highly collaborative program to conduct monitoring; research, education and other programs that would ensure that Alaskans could make informed health choices about wild food sources. Specifically, the projects outlined below would be a part of our developing program to:

- Find out which wild foods and amounts that people are eating from subsistence, commercial and recreational sources;
- Evaluate comparative risks and benefits of specific Alaskan wild foods;
- Build community educational capacity;
- Detect and track changes over time;
- Identify any actions needed to reduce unacceptable risks and sources of contaminants; and
- Build community and tribal capacity to participate in research and other programs.

Traditional knowledge will be integrated with western science.

There are three main components essential to the success of this proposal:

1. Developing the Alaska Wild Foods Safety Program Partnership

- Identifying research methodologies and monitoring priorities
- Providing an information clearinghouse and database
- Determining Nutritional Benefits of wild foods
- Communicating comparative risks and benefits of Wild foods
- Reducing risks: action plans, and response strategies for community problem-solving

- Developing training programs for communities, and other organizations to enhance the capacity to participate in research and other programs.
- Work with industry to help design programs that ensure their product is not at risk.

2. Tracking Human Health Exposures, Effects, and Comparative Risks and Benefits

- Determine type and quantities of Wild foods eaten
- Establish current levels of contaminants in the environment, food chain, and humans, and monitoring over time for trends
- Improve disease surveillance for birth defects, cancer, and other conditions that may be related to environmental exposure
- Create in-state capacity for analyzing fish safety and work with FDA federal advisory program to tailor advisories to Alaska conditions

3. Strengthening education for environmental health

- Develop science curriculum on environmental health, cancer, and risks and benefits
- Participate in national Arctic research and international initiatives

Developing the Alaska Wild Food Safety Program Partnership

There are many organizations interested in forging an Alaskan coordinated program for human health and environmental monitoring of Wild foods. State, federal, native, fishing and other organizations are involved in a process that needs adequate support to build a strong collaborative effort. Funds for a centralized program are necessary to ensure coordination. This program would be modeled after the Alaska Telehealth Project so that we can ensure all research, monitoring, and risk communication efforts are using consistent goals, objectives, methodologies and core principles. The State of Alaska will establish a board to direct the Wild Food Safety Program. The program will be managed by a board of directors that will include representatives from state and federal agencies, Native and fishing organizations and others with a vested interest such as the University of Alaska. Representatives from agencies, Native organizations, and communities will act as a partnership to guide the program.

Alaskans need clear, practical information that answers questions such as “Should I be concerned about health risks to my children, my family, and me?” Historically, few communities have gotten feedback or results from scientists working nearby, or the reported results are rife with jargon and do not answer community questions. At present there is no one place to find out what has been done to assess contaminants in fish, wildlife and humans, what research and monitoring projects are ongoing, what are the remaining data gaps, and how to understand and manage any potential risks.

Information on the safety and benefits of subsistence foods is a vital component of the program. In addition, questions are starting to be raised about the safety of sport and commercially caught seafood. This statewide program would be a collaborative effort that ensures a one stop shopping capability for people concerned about the health of wild foods.

A statewide native meeting will be held this spring to provide recommendations from the Native community on the program. The items listed below are a placeholder for a program that has enough flexibility built in to incorporate ideas and approaches that emerge from that meeting as well as ideas from other interest groups and health and research organizations.

- **Identifying Research and Monitoring Priorities and Methodologies**

The Alaska Wild Food Safety Program will set research and monitoring priorities and methodologies through a collaborative process with all of the partners involved.

- **Providing an information clearinghouse and data base**

Establish a clearinghouse for easy public use including Internet access to serve as a focal point for those proposing to carry out research and those who are interested in results of research and monitoring. This would complement existing data centers being developed at UAF for the international Arctic Monitoring Assessment Program.

- **Determining nutritional benefits of Wild foods, including commercial seafood, marine and terrestrial mammals, and birds**

Alaskans need more specific information about the health benefits of subsistence food consumption in order to make informed choices. Long considered essential to cultural and economic benefits, the unique nutritional constituents of wild-harvested foods are vital to healthy lifestyles.

Any potential health risks posed by consuming trace contaminants in subsistence foods must be balanced against nutritional food benefits. Alaskan fish and marine mammals are valuable sources of vitamins, protein, energy, and other important nutritional compounds as well as the cultural and spiritual well being of Alaska Native People. Health risks increase if subsistence foods are replaced by market foods that are often higher in saturated fats, vegetable oils and carbohydrates, with less nutrient value. Dietary changes are complex, often coinciding with lifestyle changes contributing to increased chronic diseases such as heart disease, diabetes, and cancer.

These studies would be based on the Canadian Northern Contaminants Program, carried out at the Center for Indigenous People's Nutrition and Environment, at McGill University.

- **Developing education and training programs to build capacity in Alaska organizations and rural communities**

Health, environmental professionals and others who could serve as research partners, managers and educators in contaminant research and programs must develop knowledge and skills before they can serve as program resources.

Education and training programs on planning, implementing research and conducting research, partnering with universities and agencies on research, incorporating traditional knowledge, working with researchers and communicating information on research and contaminants would be established.

- **Communicating comparative risks and benefits of Wild foods**

Develop a program of public information sharing and risk communication. Address community concerns, incorporate community knowledge in decision-making processes, and provide information about the health risks associated with hazardous substances and the basis behind risk management decisions.

- **Reducing risks: Action plans and response strategies for community problem-solving**

Using the results of the monitoring program and results from other ongoing studies by partners (such as the maternal and infant "cord" blood monitoring program of ANTHC/EPA/CDC) the overall program would develop action plans to reduce risks, and help strengthen local community capacity to manage risks. In some cases, the action plans may need to address geographic sources including international locations.

Human and environmental health protection would include:

- Develop intervention strategies to reduce or eliminate exposures of humans in order to promote the health and welfare of the residents of and visitors to Alaska.
- Provide expertise and resources to respond rapidly to local site concerns by having capacity to perform limited and preliminary exposure assessments, including testing critical species and environmental samples as well as human tissue analyses.
- Develop source reduction programs for contaminants affecting fish and wildlife, to sustain wild resources.

Budget

\$2.25 million annually will provide funds for administration of the Alaska Wild Food Safety Program that would include but not be limited to: identification of research and monitoring priorities and methodologies, conducting dietary surveys; development of an information clearinghouse; communication of comparative risks and benefits of wild foods; and development of response strategies to reduce risks. Details on the budget and the program elements for the Alaska Wild Food Safety Program will be fleshed out after the Native Community meets this spring and makes recommendations on how we should proceed as a partnership.

Tracking Human Health Exposures, Effects, and Comparative Risks and Benefits

- **Determine current levels of contaminants in the environment, food chain, and humans, monitoring them over time for trends and share the results**

There is no statewide coordinated program in Alaska to monitor contaminants and their effects in soil, air, water, fish and wildlife including wild food species and humans. Persistent, toxic contaminants accumulate and increase in each level of the food chain, which leads to higher concentrations at the top levels such as fish, marine mammals and humans. Of particular concern are heavy metals such as mercury, cadmium and arsenic, organochlorine compounds such as PCBs and pesticides, radioactive elements and contamination at military and other local sites that enter and biomagnify up the food chain. The developing young of many species, including humans, are especially vulnerable to subtle, variable and potentially damaging effects of contaminants. There are substantial gaps in research and monitoring related to amounts of contaminants in animals, people and food, and whether these levels are changing.

We propose a comprehensive, collaborative program that will provide accurate information on contaminant levels in the Alaska environment, food chain and humans. The program will also assess and provide information on the nutritional benefits of Wild foods. Each component is needed and complementary to understanding the potential effects on Alaska and Alaskans. The program we propose involves interdisciplinary partnerships that build on existing efforts and expertise.

The proposed project will enable us to provide clearer public health advice about potential risks from exposures, by interrelating; levels of contaminants in the food chain and environment; dietary survey data of the amounts and kinds of foods being consumed; actual levels of contaminants in humans; and nutritional, social and cultural benefits of subsistence foods. Many essential nutrients occur at high levels in subsistence foods and must be major considerations in developing consumption recommendations. In crafting public health recommendations for consumption, benefits as well as risks must be considered.

We propose both a short-term and long-term approach. With immediate funding, the human exposure assessment can provide results to communities within a year. Then, ongoing monitoring

can provide data on trends. A longer-term effort can draw upon existing expertise to develop a comprehensive program that combines the results of data on environmental levels of contaminants, dietary consumption amounts, and levels of contaminants in the different foods being consumed. Because of the complexity of the effort, we propose using funds to carefully plan, with our partners, this larger and broader effort during the first year, and then implement the expanded monitoring and dietary survey activities in subsequent years. These efforts will be a part of the developing Alaska Wild Foods Program also described in this document.

- **Improving disease surveillance for birth defects, cancer, and other conditions related to environmental exposure**

Understanding trends in the incidence of disease that may be related to environmental exposures is fundamental to protecting public health. Alaska has only rudimentary systems in place to provide information on diseases that may be linked to the environment. By building new tracking systems such as a statewide hospital discharge survey, we will be able to describe environmentally related health outcomes to provide warning signals on the prevalence and trends of health outcomes in need of closer study.

Alaskans are also concerned by the striking increase in cancer. We need to be able to track cancer cases through the Alaska Cancer Registry, Alaska Division of Public Health, and more importantly, we need to be able to provide understandable information about cancer to the public. We must be able to educate the public about what cancer is and what causes cancer. We need to provide accurate and believable information about the relationship between exposure to contaminants and cancer. And, we need to be able to help communities deal with perceived clusters of cancer cases that occur.

We will strengthen the current registries for cancer and birth defects to collect additional information to link health outcomes to environmental exposures.

A number of state and federal agencies and Native organizations currently maintain registries. Efforts to improving surveillance will be managed through a partnership of agencies and organizations conducting current epidemiology programs.

- **Ensure federal fish advisories consider Alaska concerns**

Federal agencies such as the FDA and EPA have recently issued National Fish Consumption Advisories initially without considering regional scientific or health information. Both EPA and FDA are planning a major, national education campaign to increase public knowledge of their recently announced fish advisory. National advisories must be more fully coordinated and regionally adapted before national release. We need to create in-state capacity for analyzing fish safety and work with FDA federal advisory program to tailor advisories to Alaska conditions. Accurate national and international communication about the relative health of Alaska fish is critical to protecting Alaska's commercial fisheries and tourism industries as well as to ensure Alaskans don't turn away from Wild foods.

Assessing Alaska's world-renowned seafood for nutrients and health benefits and monitoring for contaminants will provide a starting point to promote the Alaska seafood industry and continued use as an important Wild food. It will also help identify contaminant sources and solutions. Accurate information will serve as the basis for communicating the risks and benefits of traditional diets. This will be a collaborative effort of government agencies, Universities, and Native organizations.

Budget:

\$1.0 million for laboratory testing for contaminants and nutrients.

\$250,000 annually to develop the in-state capacity to monitor POPs and heavy metal hair analyses.

\$250,000 annually to support collection and interpretation of data from human blood and hair specimens.

\$250,000 annually to the Alaska Division of Public Health and partners to support outreach to strengthen the ascertainment of birth defects and cancer and other conditions related to environmental exposures among Alaskans.

\$950,000 annually to support sampling of targeted wildlife, fish and shellfish species to evaluate and monitor contaminants levels found in natural resources used as subsistence, commercial and recreational foods.

\$450,000 annually for data analysis and interpretation for contaminants including persistent, bioaccumulative pollutants such as pesticides, heavy metals, PCBs, dioxin, and other known hazards to wildlife, fish and human health with partners such as the marine mammal commissions and other local, state and federal sampling projects.

Strengthening education for environmental health

• **Develop science curriculum on environmental health, cancer, and risks and benefits**

Rural educators need curriculum materials on environmental health topics that relate to practical questions and issues in the community. Young Alaskans need useful information to help understand the many science and health issues facing rural communities, and how to integrate traditional knowledge. They also need career pathways that can be relevant and valued in their regions. A key goal is to ensure that every individual can get useful information and confidently make an informed decision regarding the foods consumed.

With local communities, school districts, and Native educational leaders, develop a pilot program to enhance curriculum materials K-12 to help young Alaskans better understand environmental health issues such as risks/benefits of diets, and related sciences. As part of this effort, funds can be used to coordinate with the GLOBE program, which is an international program that works with local school districts to educate students about contaminants and monitor chemicals in their community. We will start in rural areas where subsistence remains a way of life and gradually to expand to urban districts.

• **National Arctic Research and International Initiatives**

National northern and Arctic research initiatives, largely determined outside Alaska, have not fully engaged Alaskans to help develop key questions and priorities for our state. Alaska needs to recommend and help direct research funding to the most pressing questions, as well as be directly included in setting strategic direction for U.S. northern and arctic research. National research priorities must address Alaska's needs. Alaskans must participate fully in federal programs that fund northern and U.S. Arctic research, including:

- Dietary surveys and traditional dietary decision-making
- Wild food preparation and risk management
- Nutritional analyses
- Contaminant levels in wildlife, plants, air, water, subsistence food resources

- Contaminant levels in humans
- Contaminant sources and transport to Alaska

Budget:

\$500,000 annually to support development of educational curriculum, public health information messages, and outreach regarding cancer incidence and causes, the relationship of cancer to exposure to environmental contaminants from the food chain and from site-specific exposures and the health benefits of wild foods (DHSS with partners).

\$100,000 annually to fund participation in policy and decision-making national forums such as the Polar Research Board, Arctic Council, International Union for Circumpolar Health and other human environmental health and contaminants-related work sessions and meetings outside of Alaska.