

## **Alaska Wild Food Safety Program Budget**

**Title:** Wild Foods: Monitoring and Education

**Funding:** \$3.9 Million per year over 5 years

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### **Background**

It is becoming more apparent that the limited amount of 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. Communities are concerned about local sources of contaminants, such as dumpsites and formerly used defense sites. Observations from traditional knowledge confirm that unprecedented and unexplained changes are increasingly reported throughout the state.

Alaskans 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 traditional diets not only provide excellent nutrition but are also the basis for cultural traditions, values and beliefs. There is not enough western, scientific evidence to date that proves or disproves 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.

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 traditional way of life, 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 must have a coordinated approach that involves a partnership of agencies, tribes and organizations to answer these pressing questions.

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 a close collaborative partnership among state, federal, native, tribal 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 Canadian communities. Like the Canadian program, this collaborative partnership will be formalized through establishment of a management committee that will establish policy, research priorities and allocation of funds.

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.

The program will coordinate efforts to resolve issues and concerns over persistent environmental contaminants. These issues and concerns include what, if any, risks may be involved in consuming traditionally used resources, and what can be done to help protect the fish and wildlife, human health, and especially children's well being. While these issues are of concern to many Alaskans, they are of vital importance to Alaska Natives because of their high reliance on traditional foods and the importance of traditional foods and way of living to Native culture. Tribal governments and 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 establishes the collaborative program to conduct monitoring; research, education and other programs that will help Alaskans make informed health choices about wild food sources. The program will help set priorities to direct programs that answer the most important questions first, set realistic expectations of what can be done with a limited budget, and help to secure additional funds. An evaluation process will also be established to evaluate each component of the program. Specifically, the projects outlined below will 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. The traditional knowledge of peoples who have had sustained and intimate contact with their immediate environment is an invaluable source of information that can aid in many aspects of research and management. It can provide extremely useful, qualitative information to scientists attempting to place their research in the context of time and space. Traditional knowledge can provide an early warning system of emergent biological or environmental trends and "anomalies" in local, regional or ecosystem-wide geographical areas. It can indicate the possible causes for biological changes, anomalous behavior of wildlife, and/or wildlife declines. Traditional knowledge can provide

scientists with new, timely and more accurate hypotheses to pursue in their search for causes for wildlife declines, saving time, money, effort and undue delay in action.

Traditional knowledge can have a significant impact on many aspects of research; however, a systematic process for use and access of this information is required. This systematic process must deal with, among other things: issues of communication protocols, dispute resolution, information exchange protocols, appropriate use of information, protocols for attribution of information sources, compensation for research collaborators, community relations, cross-cultural communications and cultural awareness training.

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

**1. Developing the Alaska Wild Foods Safety Program Partnership**

- Identify research methodologies and protocols and monitor priorities
- Administer a grant program for contaminant research and establish other contaminant programs including sources and pathways
- Provide an information clearinghouse and database including existing information
- Determine Nutritional Benefits of wild foods
- Communicate comparative risks and benefits of Wild foods
- Reduce risks: action plans, and response strategies for community problem-solving
- Develop training programs for communities and other organizations to enhance the capacity to participate in research and other programs
- Work with industry (e.g. fisheries, tourism) to help design programs that ensure their product is not at risk
- Compare existing standards for measurement of levels of acceptable risk and establish standards where none exist
- Assess community needs

**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 and others 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, tribal, 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 will 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. A

collaborative governing board will be established to direct the Wild Food Safety Program. The board of directors will include representatives from state and federal agencies, tribal governments, Native organizations, fishing organizations and others with a vested interest such as the University of Alaska. These representatives will act as partners to guide the program.

A key element of the program is providing grant money for research and other programs dealing with contaminants. A grant program will be established and administered by the governing board and will be patterned after the Canadian program. Grant money will be directed to fund research on contaminant levels in the environment including wildlife and traditional foods, effects of contaminants on human health, risks and benefits associated with traditional foods, education and training programs to enhance capacity within Alaska to conduct research and develop and manage contaminant programs. The grant program will be structured to foster partnerships between Native organizations, tribes, government agencies and universities.

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 traditional 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 will be a collaborative effort that ensures a one stop shopping capability for people concerned about the health of wild foods.

A statewide native meeting was held to provide recommendations from the Native community on the program. The items listed below incorporate ideas and approaches that emerged from the meeting as well as ideas from other interest groups and health and research organizations.

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

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

- **Providing grant money to fund research and other programs focused on resolving contaminant issues and concerns**

The governing board of the Alaska Wild Food Safety Program will develop a grant program to provide research funding.

- **Providing an information clearinghouse, data base and traditional knowledge documentation**

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. Also included would be protocols for use of data. This would complement existing data centers such as at UAF for the international Arctic Monitoring Assessment Program, the Northern Contaminants Program and the Alaska Native Science Commission.

- **Determining nutritional benefits of Wild foods, including traditional foods (greens, berries, plants, etc.) commercial seafood, marine and terrestrial mammals, and birds**

Alaskans need more specific information about the health benefits of traditional 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 traditional 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. Certain health risks increase if traditional foods are replaced by market foods that are often higher in saturated fats, vegetable oils and carbohydrates, with less nutrient value. There is also a limited availability of market foods in many villages. 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 (NCP) and the Center for Indigenous People's Nutrition and Environment (CINE), at McGill University. The NCP was established to determine the types and levels of contaminants in the Canadian Arctic, the extent to which people are exposed, the effects of such exposure, and development of strategies to reduce or eliminate contamination and human exposure. It also provides information that assists informed decision-making by individuals and communities in their food use. CINE was founded to address concerns about nutrition and the environment in response to the need expressed by Canadian First Nation peoples, for participatory research and education about the integrity of their traditional food systems.

- **Perpetuating and sustaining Alaska Native values**

Indigenous people of the world have lived in close contact with nature for thousands of years. Through continuous interaction with the land, they have developed an enormous body of knowledge about their environment. Spiritual and ethical values have been woven into this knowledge, creating a system that has guided the people and helped them to survive.

Indigenous people are integral components of the ecosystem and work to maintain traditional relations with the natural environment. Their indigenous beliefs are that they are part of the land, and that all elements of the land are connected; that everything created on this earth was put in its natural place – people, plants and animals included. The physical, emotional, spiritual and mental environments must all be in balance in order to have health and balance in their lives. Indigenous people recognize and respect the delicate balance of nature for the total existence of all living things, including those we see physically and those we don't.

The word “respect” is key to understanding people, wildlife and the environment. Indigenous people have been taught by their ancestors that the land, animals and environment must be treated with respect. When something in the environment changes, Native people look at the whole area where the change is occurring, because when one thing changes, everything around it changes, including the people. Respect for the environment therefore, is critical to the Native people.

Alaska Native elders and ancestors taught ways to survive in co-existence with the environment and to continue as responsible caretakers of the land. Once these natural processes are disturbed and denied their natural flow, the indigenous people are adversely affected. In a very real sense, the cultural, economic and physical health of indigenous people reflects the health of their natural environment – an environment subject to change from both natural forces and human activities.

Any action threatening the integrity of traditional values demands careful assessment of the risk it adds to a community's ability to cope with and adjust to change. It is clear that indigenous people of Alaska need a sense of renewed ecological security. Specifically, they seek assurance that there will always be a healthy environment and land for future generations.

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

Health and 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 will 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 understandable 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 and protect public health.

### **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. A grant program will be established and administered by the governing board. Grant money will be directed to fund research on contaminant levels in the environment including wildlife and traditional foods and effects of contaminants on human health. 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 understandable 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 traditional foods. This will include existing data available. 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 and assist with uniformity of data.

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 information to assist the Alaska seafood industry and other organizations to promote the continued use of 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 tribes and organizations.

### **Strengthening education for environmental health**

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

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.

- **Center for Indigenous Nutrition and Environment**

A Center similar to the Canadian CINE program will be developed to address concerns about nutrition and the environment. CINE serves as an independent, multi-disciplinary research and education resource for indigenous peoples, located in a university setting.



- **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

The Alaska Wild Food Safety Program will be established through a phased approach. The first phase, year one, of the program, will include three primary tasks:

- **Develop the organization and structure**

A governing board will be established to determine the structure and foundation of the organization. The 24 member board will meet at least six times during the first year to plan, staff, educate, administer and establish the program. This collaborative board will determine the direction, goals and priorities of the Alaska Wild Food Safety Program.

- **Conduct assessments**

The governing board will oversee the assessment of available data, on-going projects and gaps related to wild food issues. A statewide community needs assessment and priorities will also be conducted.

- **Begin Testing**

The governing board will develop a program for testing the safety of foods based on the needs assessment and gaps identified. Testing will be primarily to begin to answer the question "Are our wild foods safe to eat?".

Years two and three will continue the goals outlined in the main components of the program. This program will provide funding to collaborating partners 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, providing grant monies; 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.
- Laboratory testing for contaminants and nutrients
- Developing the in-state capacity to monitor POPs and heavy metal hair analyses
- Supporting collection and interpretation of data from human blood and hair specimens

- Supporting outreach to strengthen the ascertainment of birth defects and cancer and other conditions related to environmental exposures among Alaskans.
- Supporting 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
- 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
- Supporting development of the Center for Indigenous Nutrition and Environment
- Supporting 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
- Participating 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.

## Alaska Wild Food Safety Program Budget – Year 1

### Organization and Structure

		Total
Board		
24 members, 6 meetings/year, 3 day meetings @ 2,000 per person per meeting (travel & per diem)	\$ 288,000	
Meeting Space @ 500/meeting	3,000	
Meeting expenses @ 500/meeting	3,000	
		\$ 294,000
<b>Staff</b>		
Scientist @ 80,000/year		
Administrator @ 80,000/year		
Research Associates (3) @ 40,000/year		
Technical Support @ 35,000/year		
Administrative Support @ 35,000/year		
Outreach/Education Support @ 35,000/year		
Accounting @ 150,000/year		
Legal @ 50,000/year		
Total	585,000	
Benefits @ 25%	146,250	
		731,250
<b>Administration</b>		
Space @ 6,000/month	72,000	
Utilities @ 2,000/month	24,000	
Communication network @ 3,000/month	36,000	
		132,000
<b>Equipment &amp; Supplies</b>		
Computers/printers @ 2000	20,000	
Fax/Copier	21,000	
Office furnishings	20,000	
Supplies	10,000	
		71,000
<b>Outreach</b>		
Travel/collaboration	100,000	
Publications/media	50,000	
		150,000
<b>Consultation</b>		
Planning, protocols, process	121,750	
		121,750
<b>Assessments</b>		
Data gathering - existing, on-going, gaps	100,000	
Community meetings – needs/priorities	500,000	
		600,000
<b>Testing</b>		
As identified by Assessments	1,800,000	
Continuing research		
Testing for human health effects		
Testing of traditional foods		
<b>TOTAL BUDGET</b>		<b>\$3,900,000</b>