

# Aleut communities in charge of environmental health monitoring

Over half of the Aleut households in the Aleutians and Pribilofs eat marine mammals and selected sampling has shown higher than normal levels of contaminants in their blood. More cooperative efforts are needed, as well as continued monitoring. **BY VICTORIA GOFMAN**



**ABOVE** Seal and pup sleeping on St. Paul Island, one of the two Pribilof islands.  
**LEFT** Subsistence fisher and life-long resident from the village of Nikolski in the Aleutians.

For thousands of years Aleuts have relied on marine resources for their survival. Traditional foods continue to be critical for individual and community health. Over 90 percent of the households of the western Aleutian village of Atka consume marine mammals, mostly sea lions and harbor seals. Over 70 percent of the households of St. Paul in the Pribilofs consume marine mammals, predominantly northern fur seals. Because of this dependence on sea mammals, Aleut communities have become a driving force behind efforts to better understand the risks associated with environmental contaminants and the potential effects on public health.

In the year 2000, the State of Alaska conducted testing for Persistent Organic Pollutants (POPs) in blood samples from human subjects in five Aleutian and Pribilof Island villages. The results showed higher than normal levels of some contaminants, including Polychlorinated Biphenyls (PCBs) and Dichloro-Diphenyl-Trichloroethane (DDE). These findings have raised new questions about the fate and transport of POPs and the need to study the exposure level and impacts.

Another study from this area is focusing on the most sensitive members of the population: mothers and newborn infants. Ten Aleut tribes are enrolled in the Alaska Native Traditional Food Safety Monitoring Program, which monitors contaminant levels in blood, hair and urine. Health care providers obtain dietary data from the mothers and follow the health of children for several years. In September 2003, the project was extended to include Russia's Aleuts and other indigenous peoples from the Kamchatka Peninsula and Commander Islands. The expansion of this program is the first step in creating an international environmental health-monitoring network in the Bering Sea region.

## More cooperation needed

One of the challenges with contaminants in indigenous peoples food is the lack of collaboration between communities, scientists and healthcare providers on studies about contaminants pathways in

order to improve public health. The rise of cardiovascular diseases, diabetes, and obesity makes it necessary to reassess not only the risks but also the benefits of a traditional diet.

## New projects happening

St. Paul and Atka are currently working with regional and tribal agencies on a four-year contaminants study: Dietary Benefits and Risks in Rural Villages. This study provides a model for village specific assessments of contaminant concerns and the broader implications of diet from a public health perspective. The project addresses several issues: levels of pollutants, nutritional value in traditional vs. available commercial foods and health consequences of dietary change based on epidemiological data about diabetes, heart disease and other emerging village health problems.

The process includes dietary surveys to determine types and quantities of foods consumed, testing of traditional food samples for contaminants (PCBs, pesticides, radionuclides, and heavy metals) and nutrients, as well as community education. Hiring village-based coordinators and research assistants enhances the effectiveness of two-way communication and makes local residents active participants in the research and remediation of the impacts.

A video documentary about the project features Aleuts speaking about the significance of traditional food. This film provides an opportunity for the non-indigenous audiences to acquire insight into native lifestyles and to understand the interconnection between the native people, diet, environment and health. The Aleut community strongly believes that an understanding of the importance of diet to native culture is critical to the successful collaborative research.

Aleut tribes and organizations are actively engaged in finding ways to ensure a healthy environment and lifestyle for their people. They have established partnerships with scientists, government authorities and policy makers, and have begun developing local capacity to perform on-going research and monitoring. The growing understanding of the transboundary nature of the environmental impacts calls for international collabora-

tion where the Aleut organizations could become valuable partners.

**VICTORIA GOFMAN** is the executive director of the Aleut International Association (AIA), an Alaskan Native non-profit formed by the Aleutian/Pribilof Islands Association (regional consortium of 13 Aleut tribes in the United States) and the Association of Indigenous People of the Aleut District of the Kamchatka Region of the Russian Federation. AIA is a Permanent Participant in the Arctic Council. The organization's mission is to facilitate international cooperation aimed at protection of the environment, health and sustainable development of the Bering Sea region and to rebuild ties between the American and Russia's Aleut people.

The Dietary Benefits and Risks in Rural Villages is administered by the Aleutian/Pribilof Islands Association (A/PIA). Principal researcher is Michael Brubaker, A/PIA Community services director. For more information go to [www.apiai.com](http://www.apiai.com).

The Traditional Native Food Program in Kamchatka is administered by the Alaska Native Tribal Health Consortium and the Aleut International Association. Principal researcher is Dr. James Berner, ANTHC. For more info e-mail [victoriag@api.ai.com](mailto:victoriag@api.ai.com).

## FAST FACTS

### Health and environment

The highest Arctic exposures to Persistent Organic Pollutants (POPs) and mercury are faced by Inuit populations in Greenland and Canada. These exposures are linked mainly to consumption of marine species as part of traditional diets.

Exposure to mercury has increased in many Arctic regions while exposure to lead has declined.

Subtle health effects are occurring in certain areas of the Arctic due to exposure to contaminants in traditional food, particularly for mercury and Polychlorinated Biphenyls (PCBs). The evidence suggests that the greatest concern is for fetal and neonatal development.

Increasing human exposure to current-use chemicals has been documented, for example for brominated flame retardants.

In the Arctic, diet is the main source of exposure to most contaminants. Dietary intake of mercury and PCBs exceeds established national guidelines in a number of communities in some areas of the Arctic, and there is evidence of neurobehavioral effects in children in some areas.

In the Arctic region, a local public health intervention has successfully achieved a reduction of exposure to mercury by providing advice on the mercury content of available traditional foods.

Overall, a traditional/country food diet is healthier than a typical northern market food diet.

People over 40 years old tend to eat more traditional/country foods than younger people and men consume more than women.

More aboriginal northerners than before are becoming overweight and developing western style problems such as diabetes and heart disease.

Sources: AMAP human health report, Canadian Arctic Contaminants Assessment II report.

# Health & Environment Linkages Initiative

There is a growing appreciation of the linkages between environmental conditions and human health. Up to one quarter of the global burden of disease may be associated with environmental factors. **BY GEOFF BARRETT**

Inadequate sanitation, lack of access to safe water, poor air quality and toxic substances are major causes of ill health and death. Vulnerable populations, including the poor and children, share a disproportionate burden of disease from environmental sources.

Although a wide body of knowledge on the linkages between environmental hazards and threats to human health exists, that knowledge base is not systematically harnessed to influence decision-making. It is necessary to develop mechanisms and tools to provide access to relevant knowledge and experiences in a logical framework that facilitates the identification and solution of connected environment and health problems. There is also a need to build capacity for implementing policy change and taking action to protect the environment and human health at local, national and regional levels, in ways that are appropriate to social, cultural and economic contexts.

## A Global Initiative

At the 2002 World Summit on Sustainable Development (WSSD) held in Johannesburg in South Africa, Canada launched a global initiative called Strengthening Health and Environment Linkages: From Knowledge to Action (Health and Environment Linkages Initiative). Canada has been working since then in partnership with the World Health Organization (WHO), the United Na-

tions Environment Programme (UNEP) and the United States Environmental Protection Agency (US EPA), to develop a plan of action for the Initiative.

The aim of the Initiative is to facilitate and enhance effective actions to reduce adverse environmental impacts on human health. The Linkages Initiative hopes to accomplish this by assembling scientific, technical and socio-economic information on environment and health linkages, and transferring the knowledge gained to inform decision-making and enhance capacity at the local, regional and national levels. In practical terms, this will happen through the application of assessment methodologies, sharing experiences on policy interventions and the strengthening capacities to consider environment and health in decision-making.

A work plan that lays out all of the key aspects associated with the HELI, including objectives, scope, budget, deliverables and governance has been developed. The work plan was informed by an international needs assessment workshop in Cuernavaca, Mexico, April 2003. The workshop brought together 28 representatives from 14 developing and developed nation governments, non-governmental organisations and other international organisations that work in both the health and environment sectors.

The workshop produced a number of recommendations, one of which emphasized that the Initiative's efforts should focus on the decision-making process, and not on the generation of scientific knowledge. The information and tools to be produced by the Initiative should therefore be demand-driven (i.e. designed to fill specific requirements of policy makers, in order to improve the quality of their decisions). This is in contrast to a supply-driven approach that starts with an existing body of scientific knowledge (which is partly determined by academic interest and feasibility of investigation) and attempts to integrate it into the decision-making process.

The Initiative will provide policy makers with comprehensive and accessible guidelines on how to reach an evidence-based decision on issues with a potential health and environment linkage, and how to evaluate relevant outcomes. While these are the major goals of the Linkages Initiative, its success will depend on a global partnership of governments, non-governmental bodies and international organizations.

**GEOFF BARRETT** is a Policy Analyst at the Environment and Human Health Policy Division of Environment Canada, and is a Member of the International Steering Committee for the Health & Environment Linkages Initiative.

The Linkages Initiative has just established an operational secretariat in Geneva that can be contacted for more information on the Linkages Initiative. Please contact Mr. Diarmid Campbell-Lendrum ([cambellendrum@who.int](mailto:cambellendrum@who.int)) or Pierre Quiblier ([quiblier@un.org](mailto:quiblier@un.org)).