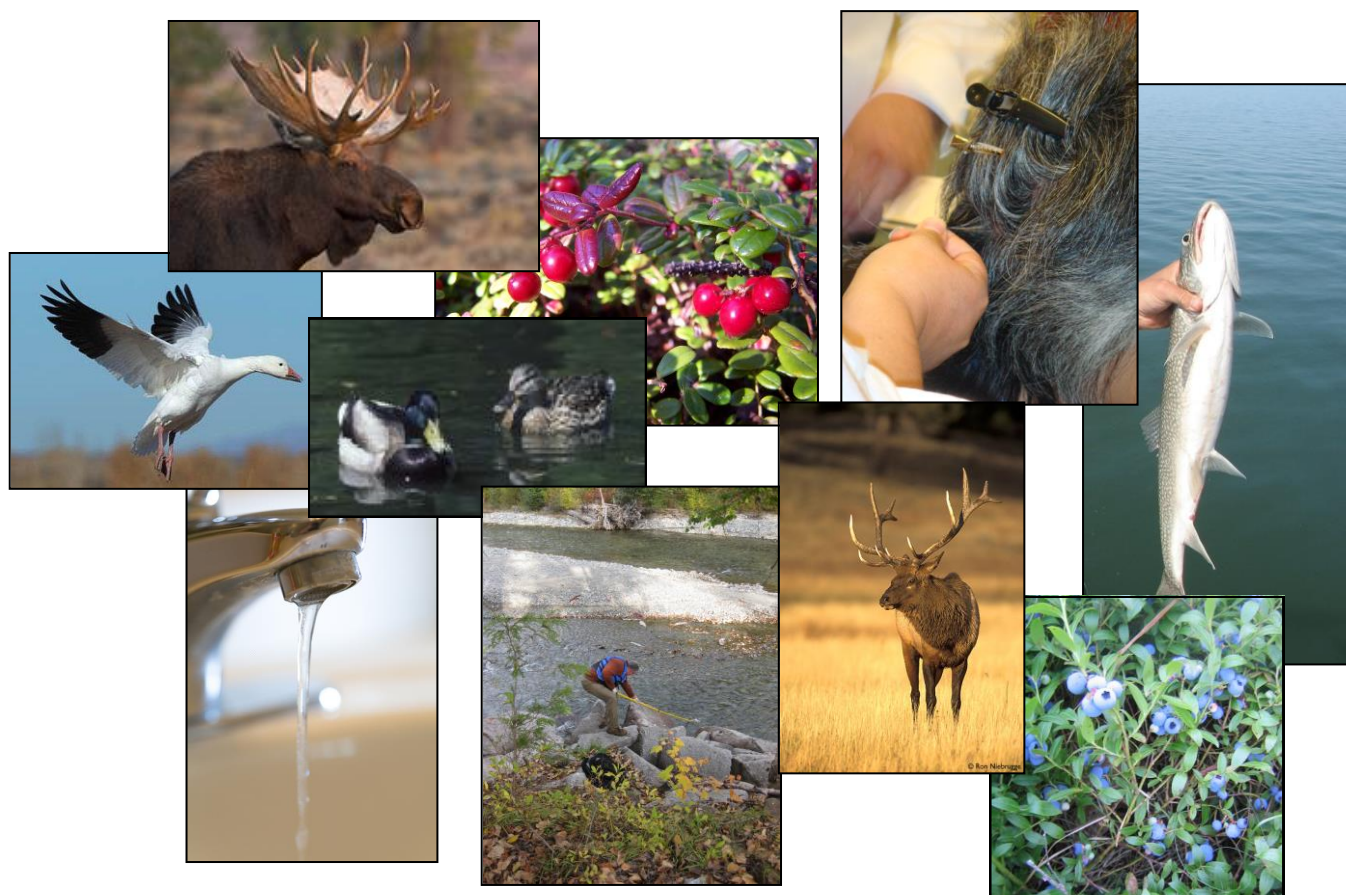




FIRST NATIONS FOOD, NUTRITION AND ENVIRONMENT STUDY:

ONTARIO REPORT EXECUTIVE SUMMARY (2011-2012)



Université 
de Montréal


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First Nations have expressed concerns about the impacts of environmental pollution on the quality and safety of traditionally-harvested foods. However, very little is known about the composition of First Nations' diets, or about the level of contaminants in traditional foods. The goal of this study is to fill this gap in knowledge about the diet of First Nations peoples living on-reserve, south of the 60th parallel. In addition, baseline information on human and veterinary pharmaceuticals in surface waters are being collected, especially where fish are being harvested or where water is being taken for drinking purposes.

This study, called the First Nations Food, Nutrition and Environment Study (FNFNES) is being implemented region by region across Canada over a 10-year period. Data collection started in 21 on-reserve First Nations communities in British Columbia in 2008-2009 followed by 9 First Nations communities in Manitoba in 2010. Reports of both studies are available on the FNFNES website (www.fnfnes.ca). Data collection was conducted in 18 First Nations communities in Ontario during the fall of 2011 and 2012. This report presents the aggregated results from these 18 First Nations communities in Ontario.

The FNFNES includes five components:

- 1) Household interviews to collect information on dietary patterns, lifestyle and general health status, environmental concerns and food security;
- 2) Drinking water sampling for trace metals;
- 3) Hair sampling for exposure to mercury;
- 4) Surface water sampling for pharmaceuticals; and
- 5) Traditional food sampling for chemical contaminant content.

This study was guided by "The Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans" and in particular Chapter 9 research involving the First Nations, Inuit and Métis Peoples of Canada (2010) and the First Nations principles of Ownership, Control, Access and Possession (OCAP™) of data (Schnarch 2004). Ethical approval has been granted by the Research Ethics Boards of Health Canada, the University of Northern British Columbia, the University of Ottawa and the Université de Montréal.

Results

Data were collected in 18 First Nations communities in Ontario. In each community, households were randomly selected; one participant per household, nineteen years and older, living on-reserve and who self-identified as a First Nation person was invited to participate. There were a total of 1,429 participants (896 women and 533 men). The overall participation rate was 79% for questionnaires and 52% for sampling of mercury in hair. The average age of the participants was 38 years for both women and men. The median number of people reported to usually live in First Nations households in Ontario was four: 71% were between the ages of 15 and 65, 19% were children less than 15 years of age and 10% were elders (over 65 years of age).

Based on measured and/or self-reported height and weight data, 34% of adults were overweight (29% of women and 42% of men) and 49% were obese (53% of women and 43% of men). Thirty percent of adults reported that they had diabetes and almost half of all adults (49%) were smokers.

Traditional food appeared in the diet of almost all First Nations adults (93%). Over 100 different traditional foods were harvested during the year, with the types varying across communities. Most adults reported eating fish (73% of participants), game (68%), and wild berries or nuts (60%). One out of three people reported eating wild birds (39%) and wild plants (32%) while one in five First Nation adults (21%) reported using foods from trees (such as cedar tea and maple syrup). Only one percent of adults reported eating wild mushrooms. The most frequently eaten traditional foods were walleye, moose and blueberries.



At the regional level, First Nations adults in Ontario consume on average 43 grams of traditional food a day while heavy consumers have up to 205 grams/day. On a daily basis, traditional food was consumed in greater amounts by adults in northern communities. Almost three-quarters of participants reported that they would like to have more traditional food. However, the key barriers to increased use included a lack of: time for harvesting; a hunter; and equipment or transportation. External factors that inhibited access to traditional food included forestry operations and government restrictions. Climate change was also perceived by 79% of participants to affect the availability of traditional food.

In terms of overall diet quality, First Nations adults in Ontario do not meet the amounts and types of food recommended in Canada's Food Guide. The number of food guide servings for the Meat and Alternatives group is higher than recommended. For the other three food groups (Milk and Alternatives, Vegetables and Fruit, and Grain Products), intakes are lower than recommended, particularly among women. Many nutrients that are needed for good health and prevention of disease, including fibre, vitamin A, vitamin D, vitamin C, calcium, and magnesium, are at risk of insufficient intake.

Dietary quality was much improved on days when traditional foods were consumed, as traditional foods are important contributors of protein, iron, zinc, vitamin D, and other essential nutrients. When only market food was consumed, intakes of saturated fat (the type of fat associated with heart disease), sugar, and sodium were significantly higher than when traditional food was included in the diet.

Twenty-nine percent of households reported experiencing food insecurity; 21% of the households are moderately food insecure and 8% are severely food insecure. Household food insecurity varied by ecozone, ranging from 18% in the southern communities of ecozone 2 (Boreal Shield/Northeast) to 52% in northern communities within ecozone 1 (Boreal Shield/Subarctic). The high price of food is a contributing factor to high food insecurity and the subsequent inability to eat a 'balanced meal'. The cost of groceries per week for a family of four ranged from \$175 in southern First Nations communities to \$344 in northern First Nations communities, compared to \$205 in Ottawa. When asked about traditional food security, 32% of participants said that they worried that their household traditional food supplies would run out before they could get more.

In terms of water treatment systems, thirteen of the eighteen communities had their own water treatment plant. Four communities received treated water from neighbouring municipalities and one community received treated water from a nearby First Nation. All communities reported that they had a piped water distribution system that supplied the majority of homes. In five communities, there were also households that received trucked in water. Seven communities also reported that private wells supplied drinking water for some homes. In the twelve months preceding this study, seven of the communities had issued boil-water advisories; four communities issued more than one advisory within the year. The reasons for the boil-water advisories included exceedance of bacteria counts and reduced quality as a result of construction and maintenance of the water treatment system.

Almost all participants (99%) reported that their households have tap water; 16% of households reported having water storage tanks. Sixty-five percent of participants reported that they use the tap water for drinking while 87% use it for cooking. One quarter of participants said that the smell of chlorine sometimes prevented them from drinking tap water. In the 334 homes that had their tap water tested for metals, there were exceedances for lead in one (0.3%) house and uranium in eighteen houses (5%). Uranium is naturally occurring in the bedrock of the Canadian Shield and, as a result, some wells in a few communities in Ontario also had elevated uranium levels. The FNFNES uranium findings have resulted in increased monitoring of the affected wells by Health Canada.

Testing for the presence of pharmaceuticals in surface water was undertaken in seventeen communities: quantifiable pharmaceuticals were found in fourteen communities. Thirty-one pharmaceuticals were found in one or more communities. The FNFNES results are generally lower than those found in other wastewater and surface waters reported in Canada, the United States, Europe, Asia and Central America. However, the health effects of the mixtures of multiple pharmaceuticals in the surface water are unknown at this time.



Slightly over half of all participants (53%) provided hair samples for mercury testing. The average mercury concentration among adults was 0.64 µg/g (geometric mean was at 0.27 µg/g). Only 8 adult males (1%) and 9 women of child-bearing age (3%) had mercury concentrations exceeding the Health Canada guidelines. The overall results indicate that the body burden of mercury is generally low and the perceived risk of mercury exposure from fish consumption is not warranted. However, almost 30% of First Nations women of childbearing age living in the Boreal Shield/Subarctic area (ecozone 1) exceeded the Health Canada hair mercury guideline. Risk communication is needed to advise women of child bearing age in the region to choose fish that are lower position (trophic level) on the food chain and are likely to contain lower levels of contaminants (e.g. whitefish) more often and eat less predatory fish (such as walleye) to lower their mercury intake.

A total of 1241 food samples representing 115 different types of traditional foods were collected for contaminant analysis. Most of the contaminant concentrations found in the traditional foods are within the normal ranges that are typically found in Canada with no health concern associated with consumption. However, higher concentrations of mercury (> 0.5 µg/g) were found in predatory fish (fish of higher trophic level) such as walleye, pike, and trout. Therefore, women of childbearing age as well as teenagers and children may want to limit consumption of predatory fish to no more than 1 cup per week in order to limit mercury exposure. Some game samples such as deer had higher concentrations of lead likely as a result of contamination from lead containing ammunition. It is recommended to use steel shot instead of lead shot when hunting and to cut away the portion of meat surrounding the bullet entry area to decrease the risk of lead exposure.

Thus far, this study has been a valuable tool in addressing the gaps in knowledge about the total diet, traditional food and levels of environmental contaminants to which First Nations in Ontario are exposed. It should be noted that this is the first study of this type to be conducted on a regional level across the country. The data collected will serve as a benchmark for future studies to determine if changes in the environment are resulting in an increase or decrease in concentrations of chemicals of concerns and how diet quality will change over time.

For copies of the reports released to date and information on current research activities, please visit www.fnfnesc.ca or contact:

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Page 1 Photographs • Webequie First Nation Community Research Assistants: Jessie Sofea, Lilian Spence, Jeffrey Whitehead, and Cindy Suganaqueb • Bone marrow on crackers, Garden River • Allen Toulouse and Brendan Abitong, Sagamok First Nation Community Research Assistants • Community Research Assistant for Marten Falls First Nation: Josie Baxter	Page 2 Photographs • Sagamok First Nation • Three Sisters – corn, beans and squash • Atkameksheng First Nation Community Research Assistants Mildred Young and Brigid King • Webeque boat launch	Page 3 Photographs • Walleye • Bull moose • Canada Goose • Blueberries
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