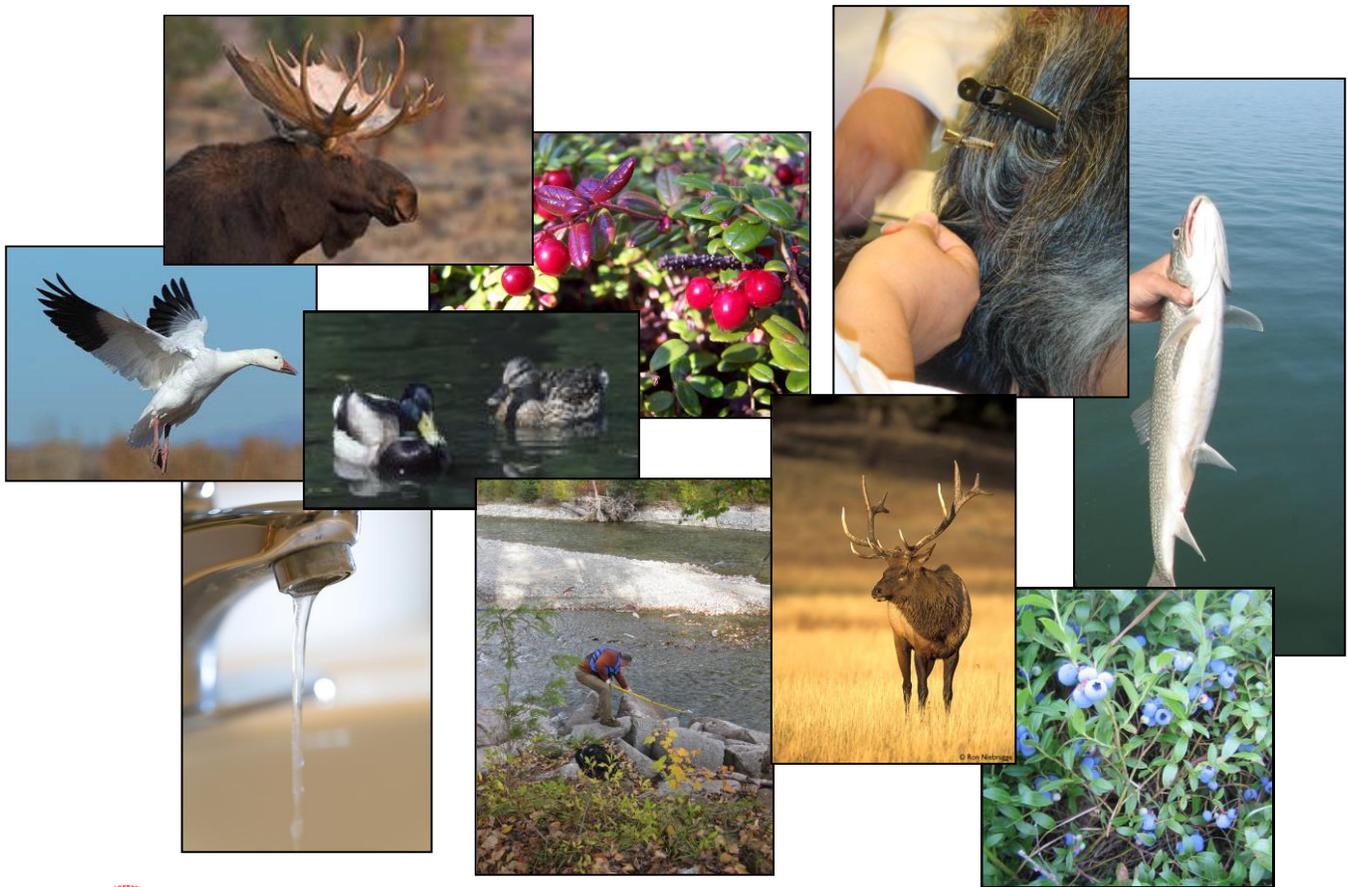




FIRST NATIONS FOOD, NUTRITION AND ENVIRONMENT STUDY: THE FIRST FIVE YEARS (2008-2013)



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BACKGROUND

Canada has been conducting total diet studies of the general Canadian population since the late 1960s to assess the safety of contaminant levels in store bought foods and has also done national surveys on nutritional value of the diet. First Nations people living on-reserve have not been included in these studies. To address this significant gap, the First Nations Food Nutrition and Environment Study (FNFNES) was designed to be regionally representative for First Nations communities. FNFNES is a 10-year research project on the benefits and risks of food and water consumed by up to 100 First Nations communities across Canada south of 60.

This study gathers information on current traditional and store-bought food use practices and tests traditional foods for nutrient content and hazardous environmental chemicals such as mercury, lead and persistent organic pollutants. The study also collects samples of drinking water to test for metals, surface water for pharmaceuticals and hair samples for mercury. The tests are done in order to assess whether these foods increase exposure to contaminants and contribute to health risks.

This study is jointly led by the Assembly of First Nations (AFN), the University of Ottawa, the Université de Montréal and the University of Northern British Columbia (2008-2013). Funding is provided from First Nations Inuit Health Branch, Health Canada. All aspects of this project are discussed and reported to First Nations leadership at the community, regional and national levels.

Information gathered to date is important for First Nations to conduct appropriate follow up in areas such as food security, environmental health and nutrition whether that is in the form of programs, policy changes or further research. The results establish baseline levels of environmental contaminants, enable the development of plans to protect traditional food systems and promote well-being and healthy lifestyles for First Nations.

Regional results are used to identify nutrition and chemical pollution issues in the diet. These results will be beneficial in developing guidelines for health promotion and disease prevention. Individual community results may be used by the community for to access resources for health promotion planning purposes and further study. At the end of the ten year project, a national level report will be published that will discuss national implications and regional variations.

FNFNES OBJECTIVES

Primary objectives

1. To determine consumption patterns of traditional and market foods on-reserve.
2. To collect traditional foods and drinking water to determine dietary exposure to environmental contaminants.
3. To determine diet nutritional value.
4. To document food security.



Secondary Objectives

1. To determine self-reported health status and selected lifestyle habits.
2. To identify factors which affect availability and accessibility of traditional and market foods.
3. To establish whether pharmaceutical products are found in the water bodies in First Nations territories.
4. To document levels of mercury exposure among First Nations people through hair analysis.

GENERAL STUDY DESIGN

From the start, the FNFNES recognized that First Nations need to have an equal and participatory role at all levels of the research. Support for the study was received through a resolution passed by the Chiefs-in-Assembly in 2007 at the AFN Annual General Assembly and the AFN is one of the investigating partners. The FNFNES follows both the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans and the principals of Ownership, Control, Access and Possession (OCAP™) and intends to attain OCAP™ certification once the process is available.

The FNFNES applies a single approach, with identical research tools and methodology within each region in Canada south of 60°. Up to 100 First Nations are randomly selected and invited to participate. Already 21 First Nations in British Columbia (2008-2009), 9 in Manitoba (2010), 18 in Ontario (2011-2012) and 10 in Alberta (2013) have successfully completed data collection. Random sampling is done by ecozone and in a way that ensures regional results can represent the region as a whole even though not all First Nations will have participated.

At the regional level prior to implementation, First Nations Provincial/Territorial Organizations are contacted to ask: 1) whether they would like the study to take place in their region, 2) if they agree that the randomized sample of communities is representative of the diversity of their region, and 3) information on logistics. In a few instances, Chiefs have indicated certain communities should be included in the study due to known specific local environmental issues or concerns. Such information has helped the study to ensure the best “snapshot” of regional representation at the time of data collection.

Each First Nation that participates in the FNFNES has up to 100 households randomly selected. Within each one of those households, a randomly selected adult who self-identifies as First Nation living on-reserve is invited to participate. Participation is entirely voluntary. A participant may choose to withdraw from the study at any time, or refuse complete components of the survey. To date, over 3,800 households have participated.

The FNFNES methodology is the same across all regions in order to ensure that results can be compared. At the beginning of each sampling year, the randomly selected First Nations are invited to attend a 2-day preparatory methodology workshop that introduces the project to the communities, identifies traditional foods that are consumed in the region to finalize the questionnaire, and discusses the research objectives, methodology and implementation. The



workshop is an important meeting where First Nations are able to provide input into the methodology and some changes can be made in order to ensure that the study will meet the communities' needs.

Following the methodology workshop, two members of the FNFNES team visits each invited First Nation to provide a presentation to Chief and Council. At this point the First Nation is asked to confirm their participation and to sign a Community Research Agreement, Funding Transfer Agreement and Band Council Resolution (if the First Nation deems it to be required). The Community Research Agreement is presented as a draft so that the First Nation may make changes to the wording as they may see fit.

Each First Nation is responsible for their data collection while funding, support and training is provided by the FNFNES. Professional nutritionists and dietitians are hired by the FNFNES as Nutrition Research Coordinators (NRCs) to provide local support and training throughout data collection. The NRCs play a coordination role to ensure that the First Nations meet their data collection goals and obtain useful results. Actual data collection occurs between the months of September and December in each region to ensure comparability of results. A Regional Coordinator is employed in order to liaise with the participating First Nations and to coordinate many aspects of the study. For example, this has included arranging for the surface water sampling to be done by the Environmental Health Officers once the communities have selected the sites that they would like tested.

RESULTS TO DATE

- **58** First Nations communities,
- **232** Community Research Assistants,
- **3,851** Household participants,
- **2,897** samples of traditional foods,
- **1,896** hair samples,
- **1,853** tap water samples, and
- **179** samples of surface water.

The First Nations themselves are the first to receive the results of the study in their community. Following an in-person presentation of these results to the community, the First Nations receive some time to review their reports and request additional information or changes.

A data training workshop is also provided to the participating First Nations where the data are officially transferred to the community via their representative(s). During this important workshop, participants are shown how their data are organized, how to access it how to conduct some basic statistical analysis using free software. The data training workshop also includes components on current funding sources for follow-up research or programming, proposal writing and mapping of the data. First Nation priorities for the data and their results are also discussed in order to set the direction for future research, support and advocacy from the FNFNES team.



Once all First Nations from a region have received their results, a presentation to an all-chief's meeting in the region is organized to release the regional report which contains the anonymous information from participating First Nations categorized by ecozone so that specific results cannot be traced back to a particular First Nation. The regional reports released to date are available online at www.fnfnes.ca.

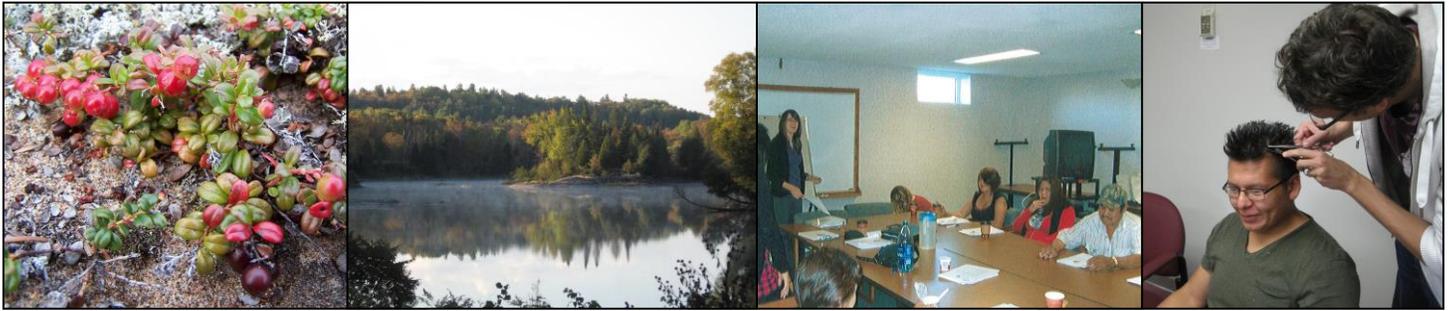
The Regional Report for BC was released at the First Nations Summit on March 3, 2011 and the Regional Report for MB was released at the Assembly of Manitoba Chiefs' Annual General Assembly on June 20, 2012. Currently, the Regional Report for Ontario is planned to be released during the summer of 2014.

Key results from the BC and Manitoba Regional Reports:

- Traditional food is safe and healthy for you.
- Food insecurity is a serious problem.
- Overall, the nutritional quality of the diet is below what is required for optimal health, but is improved when traditional foods are eaten.
- Overweight/obesity, smoking and diabetes are major health issues.
- Mercury exposure is higher than in the general population, but not a health concern for 90% of participants.
- Water quality as far as trace metals and pharmaceutical by-products are concerned, is overall satisfactory but close monitoring is recommended.
- Chemical contamination of traditional foods is not a health concern in most cases, but it is important to have the information that was collected for baseline levels.

Participants in FNFNES who have submitted a hair sample receive their individual mercury results along with any remaining hair that was not used in the analysis returned in a sealed envelope delivered to the participant by former Community Research Assistants. If the results indicate that the levels of mercury are above what is considered normal, a letter is sent with the results informing the participant what steps to take to reduce exposure.

If it is found that levels of trace metals are found to be higher than the Maximum Acceptable Concentration that is set by Health Canada, a letter is sent to the Chief and Council and the Environmental Health Officer is involved to resample the tap water of the household and to take corrective action to reduce the threat to human health.



THE NEXT FIVE YEARS

At the time of writing, the FNFNES was currently engaging with the Atlantic region where 12 First Nations have been invited to participate. In following years, 12 First Nations in Saskatchewan and 9 First Nations in Quebec and Labrador will be invited to participate.

Following the participation of these three remaining regions, a national level report will be released that will offer comparisons across the regions and discuss the significance of the research to First Nations and potential next steps for research, policy and advocacy. Following the end of this first cycle, it is hoped that a Cycle 2 will commence from 2019 to 2029 to develop trend analysis data.

The FNFNES is a valuable tool in addressing the current gaps in knowledge about the total diet, food security, traditional foods and levels of environmental contaminants to which First Nations are exposed. FNFNES is the first study of its kind to be done on a regional representative and cross-country scale.

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 concern and how diet quality will change over time. The baseline information will be useful to First Nations who would benefit from having established baseline levels to inform decision-making on natural resource or industrial projects in their territories. The results from FNFNES can be compared to those from other studies now and in the future.

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

<p>Judy Mitchell FNFNES National Coordinator University of Ottawa 30 Marie Curie, Ottawa ON K1N 6N5 613-562-5800 ext. 7214 fnfnes@uottawa.ca</p>	<p>Andrew Black Policy Analyst Assembly of First Nations 55 Metcalfe St. 16th Floor Ottawa, ON K1P 6L5 613-241-6789 ext. 231 Toll-Free: 1-866-869-6789 ablack@afn.ca</p>
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<p><u>Page 1 Photograph Credits</u> Community Research Assistant for Marten Falls First Nation: Josie Baxter FNFNES presentation to Swan Lake First Nation Bull Moose, Garden River First Nation Karen Fediuk, Andrew Black, Dr. Harold Schwartz, and Judy Mitchell at the Manitoba report release June 20 2012.</p>	<p><u>Page 3 Photograph Credits</u> Bone marrow on crackers, Garden River BC Field team: Amy Ing, Angela Grigg, Kally Cheung, Elizabeth Howard, Suzanne Johnson, Leanna Garraway; back Cynthia Fallu, Lise Luppens and Karen Fediuk Community Research Assistants: Bev Walker, Tasha Lalonde, Linda Watson and Deshana Garbitt</p>	<p><u>Page 5 Photograph Credits</u> Mountain Cranberry, BC Sagamok First Nation Community Research Assistant training in Fort St. John, BC 2009 (clockwise from bottom left) Bev Walker, Deshana Garbitt, Cynthia Fallu, Angela Grigg, Jodie Acko, Carrolyn Attachie and Maurice Wolf Allen Toulouse and Brendan Abitong, Sagamok First Nation</p>
<p><u>Page 2 Photograph Credits</u> Crystal-Lynn Copley with research supplies to be shipped in Ontario, 2012. Northlands First Nation Kiki fishing, Garden River 2012 Sunset at Fort William First Nation Mildred Young and Brigid King, Atkameksheng First Nation</p>	<p><u>Page 4 Photograph Credits</u> EHO collecting surface water in BC Webequie First Nation Community Research Assistants: Jessie Sofea, Lilian Spence, Jeffrey Whitehead, and Cindy Suganaqueb Sayisi Dene First Nation Drs Receveur, Sharp, Chan and Schwartz at the First Nations Summit for the release of the BC regional report March 3, 2011</p>	<p><u>Principal Investigators</u> Dr. Malek Batal (U de M) Dr. Laurie Chan (U of O) William David (AFN) Dr. Olivier Receveur (U de M)</p> <p><u>Co-Principal Investigators</u> Dr. Harold Schwartz (HC) Dr. Constantine Tikhonov (HC)</p>