

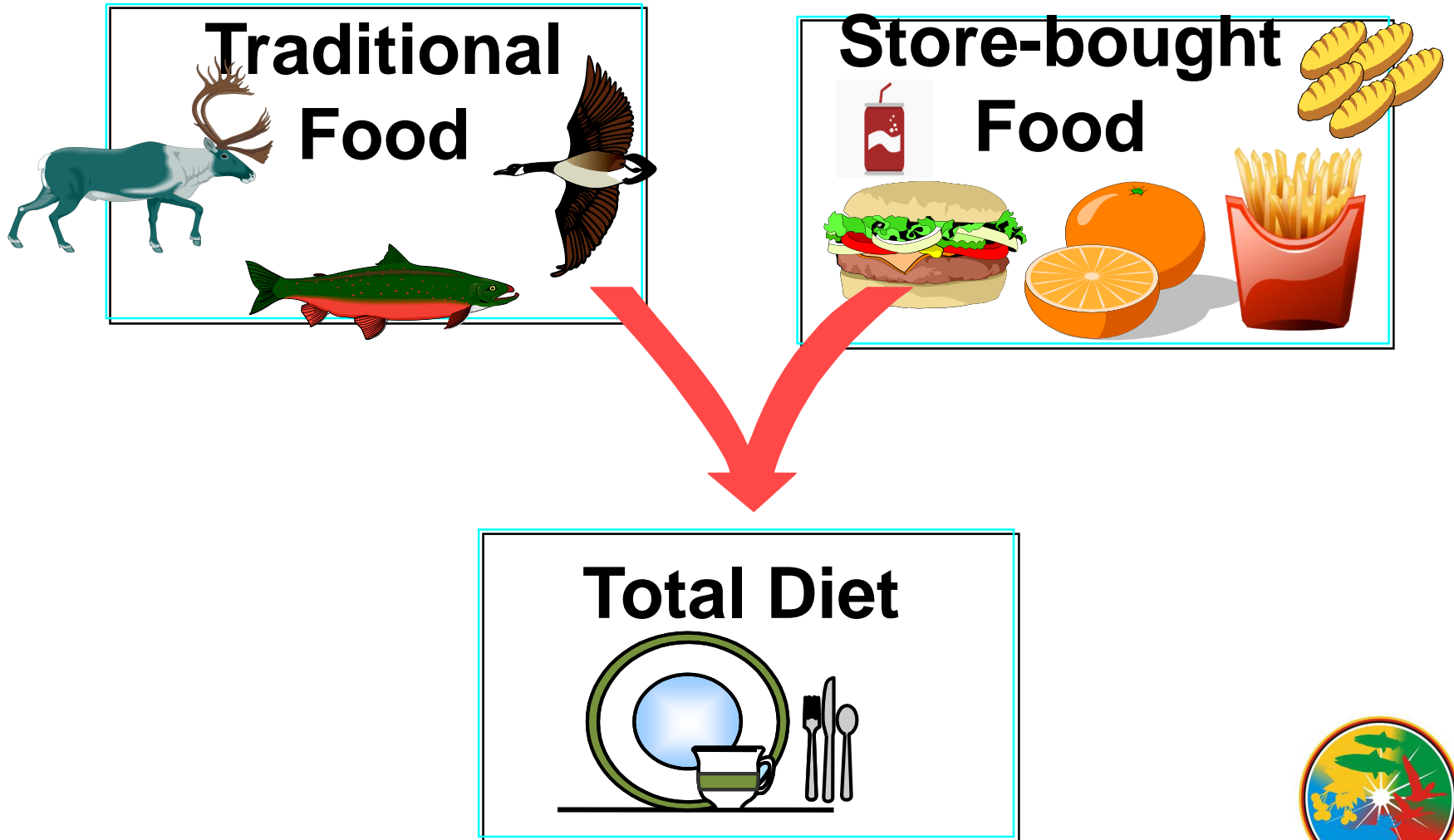
First Nations Food, Nutrition and Environment Study

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The information and opinions expressed in this presentation are those of the authors/researchers and do not necessarily reflect the official views of Health Canada.



First Nations Unique Food System



Many sources of pollution threaten traditional food systems



Traditional Food

- Traditional food is an important source of many nutrients that are not consumed in sufficient amounts
- Diets are healthier when traditional food is eaten than if just market foods are eaten



Current Nutrition Issues



- Nutrients of concern
 - Vitamin A, calcium
- Food security
- Safety of water
- Safety of food
- Diet related concerns
 - Obesity
 - Diabetes
 - Heart disease
 - Poor dental health



How much of an issue is chemical contamination of traditional food?

What traditional foods are eaten and how much?

What level of contaminants are present in traditional food?



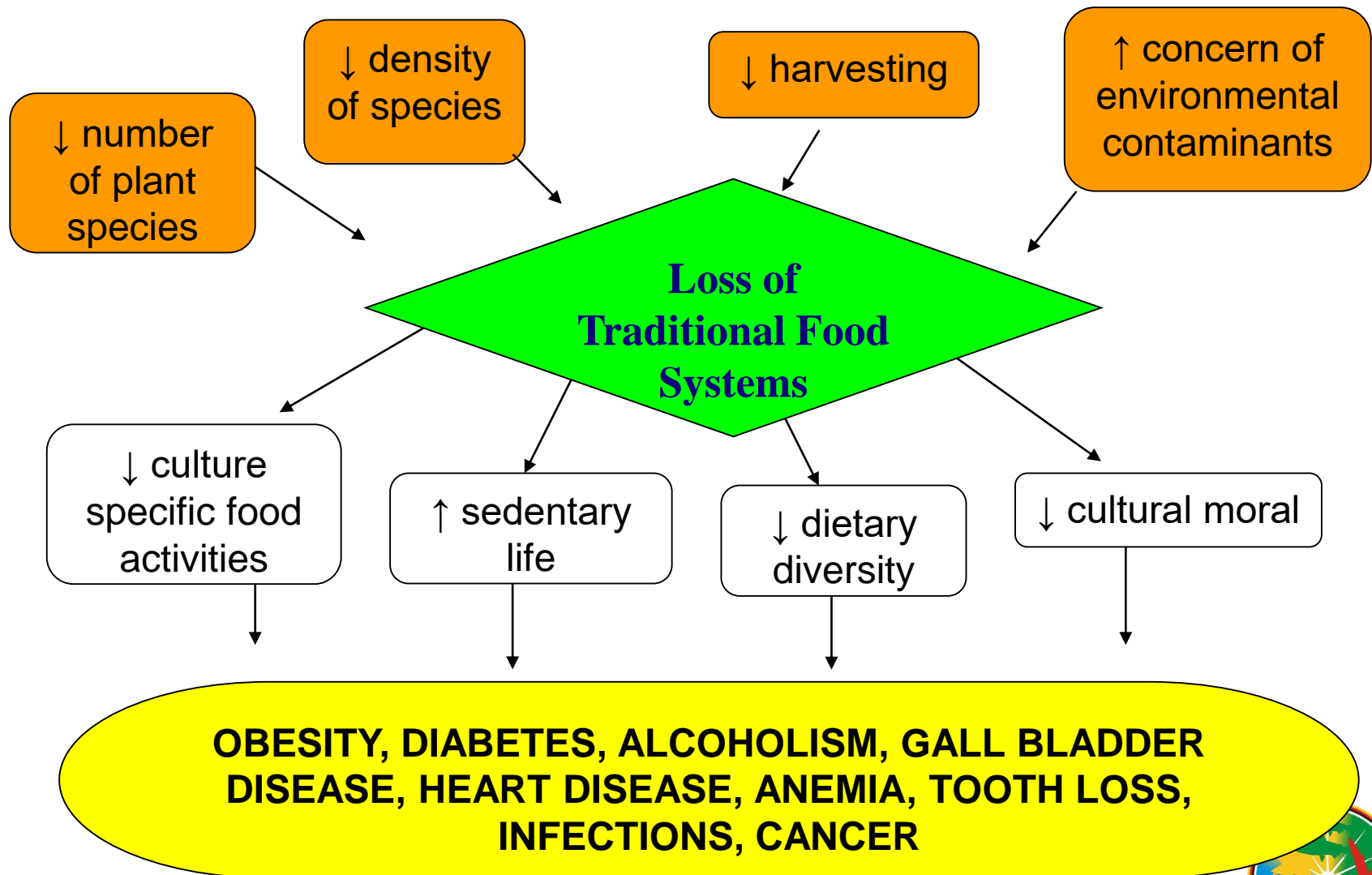
What is known about contemporary food use in First Nation communities?

There are a variety of traditional food systems but a limited number of nutrition studies that have provided a quantitative assessment of the **total diet**:

- what foods are consumed,
- how much,
- and what nutrients are in short and adequate supply.



What We Know



EXISTING QUEBEC & LABRADOR FIRST NATION NUTRITION-RELATED STUDIES

Institut National de Santé Publique du Québec (INSPQ) Reference Document 2015

- Document on 'The Diet of Québec First Nations and Inuit Peoples' in collaboration with FNQLHSSC, the Nunavik Regional Board of Health and Social Services, and the CBHSSJB. Summary report highlighting health and nutritional challenges. Includes data on rates of obesity, diabetes and CVD. Details on nutritional challenges including decreased consumption of traditional food, contaminant risks/benefits, food supply issues (cost, access and nutritional quality) and rates of food insecurity.
- **First Nations Regional Health Survey (RHS) 2002/2003, 2008/2010**
First Nations of Quebec and Labrador Health and Social Services Commission (FNQLHSSC), 2013
 - Population survey focuses on the health of First Nations of Quebec (Kahnawake opted out). The Survey has 4 phases: phase 1 (2002), phase 2 (2008), phase 3 (2013), phase 4 (2016). Results available from the 2008/2010 RHS for on-reserve population (n=2,691: 0-11, 12-17 & 18+). Results include socio-demographics, personal and community wellness, behaviours and lifestyle, food and nutrition, physical health and health services.

EXISTING QUEBEC & LABRADOR FIRST NATION NUTRITION-RELATED STUDIES (cont'd)

Nituuchischaayihitaa Aschii: Multi-Community Environment and Health Longitudinal Study in Eeyou Istchee, 2005-2009: Final Technical Report 2013

Cree Board of Health and Social Services of James Bay (CBHSSJB) & Partners

- Study conducted in 7 Cree communities (n=1,405 all ages). Results available on dietary assessment & physical activity, exposure to environmental contaminants (lead, mercury, cadmium, selenium, arsenic, POPs & other), heart disease risk factors, diabetes, bone health, thyroid disorders, zoonosis and drinking water.

Cross-sectional Study in an Innu community, Atikessé et al., 2010

- Study assessed energy and nutrient intakes from traditional food and store-bought food (n=118, adults 18+). Results available for traditional food consumption, BMI and dietary reference intakes.

Kahnawake Schools Diabetes Prevention Project (KSDPP) 1994 – Present

- Program continues to design and implement school-based & community-based interventions. Long-term goal is to decrease the incidence of Type 2 diabetes through the short-term goals of increasing physical activity and healthy eating. On-going evaluation of the project is done by KSDPP Center for Research & Training.

EXISTING QUEBEC & LABRADOR FIRST NATION NUTRITION-RELATED STUDIES (cont'd)

- 2014 PAPER on concentrations of persistent organic pollutants (POPs) in the Cree of northern Quebec. Results from the Nituuchischaayihitau Aschii: Multi-Community Environment and Health Longitudinal Study in Eeyou Istchee. Results available for plasma concentrations of 17 POPs for 9 Cree communities (n=1776). (Liberda et al.)
- 2011 STUDY on dietary exposure of PBDEs in 3 First Nation communities in the James Bay Region. Tissues from wild game and fish were analyzed for PBDE content (n=147) and dietary exposure assessed (n=54, adults 18+). Results available for animal tissues (wild meat and fish) and human blood plasma. (Liberda et al.)
- 2005 REPORT that provides a summary of studies measuring the levels of mercury exposure among Cree of Eeyou Istchee, and the investigations into possible health effects. Studies date back to 1970s and were initiated as a result of the high levels of mercury in fish first documented in the 1960's in some rivers and lakes in Canada affected by local sources of mercury-containing industrial effluent. (Schoen & Robinson)
- 2005 STUDY in Ouje-Bougoumou (n=225 all ages) & Nemaska as control community (n=100 all ages) in 2002. Study looked at the health impacts of mine tailings on the environment and human health. This study led to the multi-community environment and health study in Cree communities. (Dewailly & Nieboer)

Introduction to the First Nations Food, Nutrition and Environment Study

WHY THIS STUDY?

- There remains a gap in knowledge at the national and regional level on nutritional composition and the environmental safety of foods consumed by First Nations peoples living on reserve lands south of 60th parallel across Canada.
- There is a lack of knowledge on the baseline levels of environmental pollutants in the traditional foods across Canada
- There remains a gap in knowledge on the total diet of First Nations across Canada



First Nations Food, Nutrition and Environment Study

Assembly of First Nations

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ANNUAL GENERAL ASSEMBLY
July 10, 11, & 12, 2007, Halifax, NS

Resolution no. 30 / 2007

SUBJECT: First Nations Food Safety Research Study

MOVED BY: Chief Isadore Day, Serpent River First Nation, ON

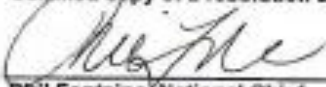
SECONDED BY: Doug Kelly, Proxy Kwaw-Kwaw-Apilt First Nation, BC

DECISION: Carried by consensus.

WHEREAS:

- A. Many First Nations Peoples continue to rely heavily on their traditional food systems for their socio-cultural, economic, physical and spiritual well-being; and
- B. First Nations traditional food systems are being threatened by environmental contaminants; and
- C. There is a growing concern among First Nations people regarding the presence of environmental contaminants, including heavy metals, in their traditional foods and the health implications of consuming such foods; and
- D. The AFN has recently completed a review of literature on this subject (2006-2007 Fiscal) and has determined that a research gap exists on the full health implications of consuming traditional foods which have been exposed to environmental contaminants; and
- E. The AFN has partnered with the University of British Columbia, the University of Montreal, FNIHB - Health Canada, and the Public Health Agency of Canada to collaborate, as full partners, on a research study related to traditional food safety and First Nations health; and

Certified copy of a resolution adopted on the 12th day of July, 2007 in Halifax, NS.


Phil Fontaine, National Chief

Head Office/Siège Social

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30 - 2007
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Resolution no.30 at the
AFN Annual General
Assembly
June 12,2007
Halifax, Nova Scotia

Study Collaborators

- **Participating First Nations communities**
- **University of Ottawa** (Dr. Laurie Chan, Toxicologist and Professor)
- **Université de Montréal** (Dr. Olivier Receveur and Dr. Malek Batal, Professors of Human Nutrition)
- **Assembly of First Nations** (William David)
- **Health Canada, First Nations and Inuit Health Branch** (Dr. Constantine Tikhonov, Dr. Harold Schwartz)



Objectives

- Document traditional and market food consumption
- Document food security
- Measure certain aspects of water quality
- Estimate exposure to contaminants and intake of nutrients of concern
- Document self-reported health status and lifestyle habits



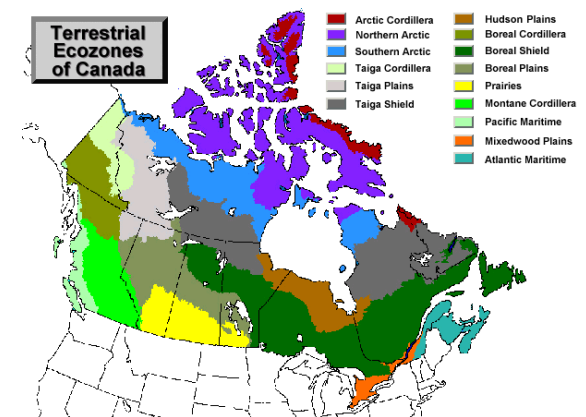
Partnership and Community Participation

- Participating communities are involved at all stages of the project.
- Canadian Institute of Health Research (CIHR) guidelines are followed.
- The principles of Ownership, Control Access and Possession (OCAP™) are observed.
- Data are confidential.
- Each community owns its community data and receives a full dataset following completion of the study.
- Community data is given to the community for safekeeping and AFN securely stores a copy solely as a backup

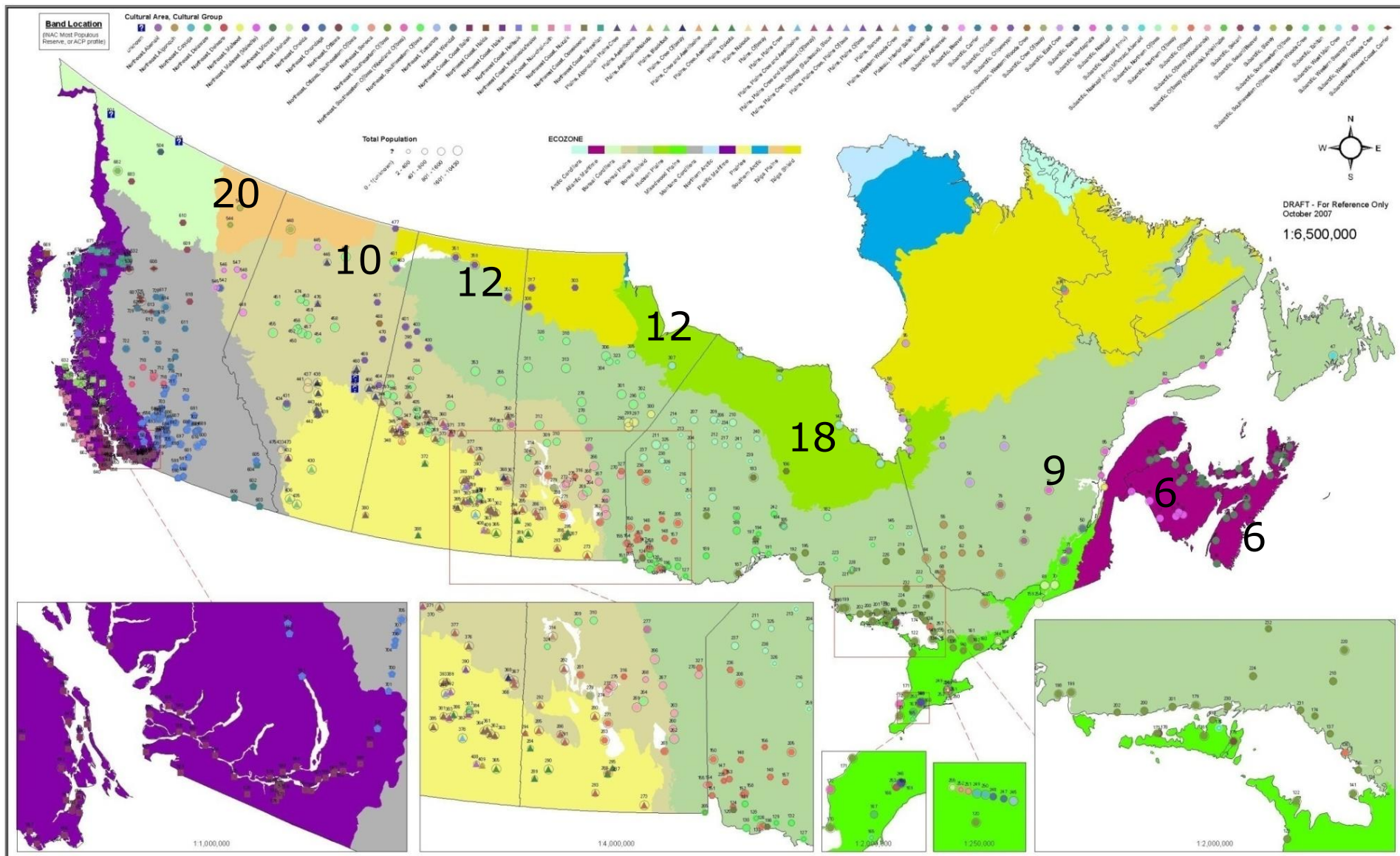


First Nations Food, Nutrition and Environment Study

- 100 communities from 2008-2018
- ~8 - 12 communities per year
- Systematic Random Sampling by region and ecozone



Ecozone Sampling Framework



First Nations Food, Nutrition and Environment Study

First Nations Food,
Nutrition and
Environment
Study
(FNFNES)

1. Household
Questionnaire

2. Food Sampling for
a Suite of
Contaminants

3. Water Sampling for
Trace Metals

4. Surface water
Sampling for
Pharmaceuticals

5. Hair sampling
for Mercury



First Nations Food, Nutrition and Environment Study

Part 1. Household Questionnaire

- Up to 100 Households per community
- 1 person per Household
- 19 years or older
- Able to provide written consent
- Self-identifies as a First Nations person living on reserve

Part 2. Traditional food sampling

- 30 different foods are collected from each community and analyzed for a set of chemical contaminants and nutrient analyses as needed
- Each food tested is a composite of up to 5 samples from different animals/plants



First Nations Food, Nutrition and Environment Study

Part 3. Sampling of drinking water (households)

- Up to 20 households in each community are invited to have their water tested for a suite of metals

Part 4. Sampling of surface water

- Testing for a set of pharmaceuticals used for human and veterinary purposes is undertaken at 3 sites selected by the community.

Part 5. Hair sampling for mercury

- Each participant is invited to provide a hair sample
- To verify the mercury exposure estimate from food intake
- About 20 pieces of hair are requested from each participant



Approach

- Methodology workshop (April 2016)
- Community visits and negotiation of Research Agreement (May-July 2016)
- Hiring of research assistants in communities (September 2016)
- Collecting seasonal food samples (September-December 2016)
- Training of research assistants (September 2016)
- Interviews, hair and drinking water collection (September-December 2016)
- Data and sample analysis (2017)
- Result reporting and communications (Winter/Spring 2018)



Thank You

For more information, contact the FNFNES National Coordinator
at fnfnes@uottawa.ca Or phone 613-562-5800 ext. 7214

Please visit our website at www.fnfnes.ca



The screenshot shows the homepage of the First Nations Food, Nutrition & Environment Study (FNFNES) website. The browser address bar displays "www.fnfnes.ca". The main header features a circular logo with a colorful, abstract design and the text "First Nations FOOD, NUTRITION & ENVIRONMENT Study". To the right of the logo is a decorative image of a branch with red berries. Below the header, a dark blue banner contains the text: "A national scope study on the benefits and risks of food and water in First Nation communities". A search bar labeled "Keyword Search" is positioned on the right side of the banner. The left sidebar includes a "Communities" section with a map of Canada and a description: "Use our interactive map to discover more about this year's Survey communities". Below this are sections for "Our Partners" and "Document Download". The main content area has a heading "Welcome to the First Nations Food, Nutrition & Environment Study (FNFNES) Website" followed by a paragraph: "Over the past 40 years, Canada has conducted Health and Nutrition Surveys and Total Diet Studies among the general Canadian population to understand changes in diets and to assess the environmental safety of store-bought foods." Below this is another paragraph: "To date, First Nations people living on reserve have not been included. A number of studies in First Nation communities have helped us to understand which foods are commonly eaten however, existing research has not succeeded in providing reliable national and regional information on First Nations diets and food-related exposures to environmental hazards." At the bottom of the main content area, it says: "Using an ecozone sampling framework, the FNFNES aims". On the right side, there is a section titled "The Survey" with two sub-sections: "DRINKING water" (with an image of a glass of water and the text "The water will be sampled for pharmaceuticals and trace metals. Learn More") and "SURFACE" (with an image of a landscape).