

## **Study name: Engaging communities in the monitoring of zoonosis, country food safety and wildlife health.**

**Proposal Number:** 2006-SR1-HW-141 (IPY Canada) or 186 (IPY International)

### **Contact:**

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### **Abstract:**

Zoonoses in country food is a concern for Canadian northerners because hunting wildlife is an integral part of their daily life, and southern food can be expensive to buy in the North. Scientific knowledge on zoonoses in Northern Canada is scarce and dispersed throughout different governmental organizations. Furthermore, due to the different methods of food preparations, food safety concerns differ throughout the Canadian Arctic. The involvement of northern communities in our research is essential to get on-the-ground information to understand wildlife and disease ecology. Our goals are five-fold: (1) Establish the distribution of *Trichinella sp.*, *Toxoplasma gondii*, Anisakidae worms, *E.coli* 0157 and *Salmonella sp* in wildlife of food safety concern, (2) set-up laboratory facilities in Nunavik, NWT and Labrador, (3) train local people for wildlife sampling and diagnosis of the five diseases of interest, (4) develop/refine/validate simplified (field) diagnostic tests for *Toxoplasma*, *E. coli* O157:H7 and *Salmonella*, and (5) develop a Canadian web-based database of Arctic wildlife diseases that can be accessed by all northerners. Our communication strategy is to share the results with the regional public health personnel and to help develop recommendations for the safe consumption of country foods. Once the recommendations are created, they will be disseminated to the public in various, culturally appropriate forms, including radio interviews, posters and pamphlets. We want to empower northerners to take informed decisions about food safety and to be better equipped to prevent food borne diseases.

### **Project Status:** Active

#### **Project Progress 2007-2008:**

Collection of samples has started in Nunavik, Nunavut, Northwest Territories.

Hunter training for sample collection has also started in Nunavik and Northwest Territories and will soon begin in Nunatsiavut.

Determination of the predilection site of *Trichinella sp.* in muscles of each wildlife species has started and will continue until we have enough samples from different wildlife species. Each time a *Trichinella* parasite is recovered, it is identified to species and or genotype. A standardized muscle digestion assay for various wildlife species has been developed.

The development and evaluation of field test kit for serological detection to improve detection of *Toxoplasma gondii* under Arctic field conditions, is in progress. In collaboration with Dr. Susan Kutz from University of Calgary (CARMA), we are developing a simplified protocol for blood collection using absorbent paper strips.

We have identified and characterized rapid, simple, and inexpensive test methods for the presumptive detection of *E. coli* O157:H7 and Salmonella. The Nunavik Research Center is now equipped with the necessary laboratory equipment and the personnel are trained. Analyses have started with traditional foods and in community freezers.

All northern laboratory technicians and supervisors have been trained and briefed on the new diagnostic methods developed for *Trichinella nativa* and *Toxoplasma gondii*, and Anisakidae nematodes.

Two new laboratories in Yellowknife, Northwest Territories and Nain, Nunatsiavut, also have necessary equipment for the diagnostic of these diseases.

We have started the process of creating a database that can be accessible on the web by all participants. Development of necessary data fields for each disease and for proper archiving is in progress.

#### **Plans 2009:**

Continue sampling and training of hunters for wildlife sample collection.

Canadian Food Inspection Agency laboratories in Ottawa and Saskatoon will continue providing expert support for all northern laboratories of this project.

Continue the work on *Toxoplasma gondii* diagnostic methods and the blood paper strip project. Anisakidae nematodes will be identified to species with the expertise of Dr. Rokicki from Gdansk University, Poland.

Enter archived data and IPY data in database.

#### **Expected Completion date:**

IPY funding for this project ends in 2011.

The laboratories that have been created through this project will remain open at some capacity. We welcome being part of a Network that would need our expertise.

#### **Co-applicants:**

- Burton Blais, Canadian Food Inspection Agency, Ottawa Laboratory (Carling), Ottawa, Ontario K1A 0C6.
- Brett Elkin, Environmental and Natural Resources, Government of the Northwest Territories, Yellowknife, NT, X1A 2L9.
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