

# {{ECHO}}

## Environment, Community, Health Observatory Network

Strengthening intersectoral capacity to understand and respond to health impacts of resource development



## Introducing the ECHO Network

The ECHO Network is a 5-year research program, funded by a Canadian Institutes of Health Research Team Grant, focused on working together across sectors to take notice of and respond to the influence of resource development on health and well-being, with specific emphasis on rural, remote and Indigenous communities and environments. The project brings together university researchers and local knowledge-users who have identified a need to better understand and respond to the health, environment and community impacts of resource development. The research team is led by a steering committee comprised of different sectors, disciplines and communities, which is co-chaired by Dr. Parkes and Dr. Sandra Allison, chief medical health officer at Northern Health.

The team of more than 60 people works together as the ECHO Network (Environment, Community, Health Observatory) and will draw on expertise spanning health, social and natural sciences, including UNBC professor Dr. Henry Harder, Dr. Donald B. Rix BC Leadership Chair for Aboriginal Environmental Health, and other UNBC colleagues. The research also draws on experience from four regional cases. Two are in B.C. (one in the North and the other cross-province), and the others in Alberta and New Brunswick respectively. The study also involves a range of national and international partners.

The project involves principal researchers from UNBC (Dr. Margot Parkes, Dr. Henry Harder), Simon Fraser University (Dr. Tim Takaro, Dr. Maya Gislason), the University of Alberta (Dr. Lars Hallstrom), the Canadian Wildlife Health Cooperative (Dr. Craig Stephen) and the Université de Moncton (Dr. Céline Surette). Key partners with each of the regional cases include Alberta's Battle River Watershed Alliance, the New Brunswick Environmental Network, and B.C.'s Northern Health Authority and First Nations Health Authority (FNHA). It will also involve numerous other researchers and stakeholders from around the country and the globe, including New Zealand, Australia and the Pacific.

### The Need

Health is influenced by resource development through interrelated socioeconomic, ecological, cultural, and political pathways, which demand upstream, intersectoral responses. These relationships are especially important in Canada, where the economy remains tightly coupled with the development of natural resources and where the rate and scale of social and environmental change occurring in resource-rich regions is fueling debate regarding health impacts, especially for rural, remote and Indigenous communities

The ECHO Network brings together national and international partners to respond to two overlapping needs. First is a need for integrative tools and processes to detect, take notice of, analyze and respond to the health impacts of resource development. Second is the need to understand and respond to the cumulative impacts of resource development in ways that recognize combined environmental, community and health impacts resulting from past, present and future resource development across time and space.

### Project Aims

The research aims to:

1. make evidence-based recommendations on the form and function of a cross-jurisdictional ECHO that will foster integrative understanding of the complex dynamics of resource development and health, and;
2. trial and evaluate intersectoral strategies to address the cumulative determinants of health that interact over time and space, targeting actions and responses that cannot be achieved by the health sector alone.

## **ECHO Network Regional Cases**

The research program is anchored in **four regional cases**, in jurisdictions actively grappling with the health impacts of resource extraction and development, whose specific contexts provide a foundation to address research objectives. The organizations involved with each of the four regional cases are

- New Brunswick Environmental Network (& NB Children’s Environmental Health Collaborative);
- Alberta’s Battle River Watershed Alliance;
- BC’s First Nations Health Authority;
- BC’s Northern Health Authority; and
- International partners from the Oceania region

### **The New Brunswick Environmental Network (NBEN) Regional Case**

This case is informed by a multi-year collaboration centered on the work of the NBEN Regional Case and more specifically, the NB Children’s Environmental Health Collaborative (NBCEHC), an established network of organizations and agencies across the province working to prevent children’s exposure to environmental hazards that affect health and to promote children’s access to healthier environments. It is currently testing, refining, and adapting a combination of arts-based and collaborative tools to create narratives about the ways in which resource development is affecting health at the community level. NBEN is also working to learn about the use of geospatial tools to assist with hot-spot mapping through overlay of health, environmental, and inequity concerns.

### **Battle River Watershed Alliance (BRWA) Regional Case**

This regional case is informed by a history of established research collaborations in rural and remote communities, led by the Alberta Centre for Sustainable Rural Communities (ASCRC) at the University of Alberta. The research team has a long-standing orientation to the importance of watersheds as integrative, ecologically coherent, intersectoral context for understanding complex driving forces of change across land, water, community and health concerns. A local bike tour organized by BRWA in fall of 2017, explored the complex dynamics between energy options, climate change, and community resilience in the Battle River region of Alberta. The regional case is also developing a report that investigates common approaches to assessing the potential health impacts of drinking water contamination, particularly as it pertains to human cancer. This information will support future work with Alberta Health Services.

### **First Nations Health Authority (FNHA) Regional Case**

The FNHA regional case builds on significant developments in health governance in BC. FNHA is working on the development of an ecological indicator for health. Alongside this work, the regional case is progressing efforts to integrate multiple spatial datasets into easy to read maps describing the total physical human impact on the environment. Such a map is helpful when trying to combine the large amount of spatial data describing human activities such as roads, forest cut blocks, mines and oil wells. Ecological disturbance is associated with many ecosystem services upon which rural and remote communities are disproportionately dependent. Visualizing ecological disturbance includes exploring ways to describe and picture associations between social determinants of health and anthropogenic disturbance. These activities are occurring in connection and collaboratively with the UNBC Stewardship Portal.

### **Northern British Columbia Regional Case**

The knowledge user lead in this region is Northern Health (NH). Northern BC is characterized by a complex array of resource extraction, processing, and related infrastructure development and transport activities. NH established the Office of Health and Resource Development (OHRD) in 2014, adopting an intersectoral orientation along with recognition of the environment as a context for health. An initial UNBC-led scoping literature review of the health impacts of extractive industries is informing current work to identify case examples which have been successful at working intersectorally to address resource extraction and development impacts in Northern BC.