

Presentation follow-up report from:

New Tools for Assessing the Cumulative Impacts of Resource Development

**Fort Nelson | Fort St. John | Dawson Creek | Tumbler Ridge | Hudson's Hope | Chetwynd | Vanderhoof
June 3-11, 2019**

About the Cumulative Impacts Research Consortium

The Cumulative Impacts Research Consortium (CIRC) is a research and community outreach initiative at the University of Northern British Columbia. CIRC is dedicated to enhancing the understanding of the cumulative environmental, community, and health impacts of resource development. For more information, please visit www.unbc.ca/cumulative-impacts.

About the 2019 CIRC Presentations

CIRC staff facilitated a series of free public presentations in Fort Nelson (June 3), Fort St. John (June 4), Dawson Creek (June 5), Tumbler Ridge (June 5), Hudson's Hope (June 6), Chetwynd (June 7), and Vanderhoof (June 11). These presentations were the third and final phase of community visits for a CIRC research project, "Developing new tools for assessing the cumulative impacts of resource development across northern British Columbia: Integrating environmental, socioeconomic, and human health assessment methods."

The three-year project was launched in 2016 with community engagement throughout the District of Vanderhoof, Peace River Regional District, and Northern Rockies Regional Municipality. This project aimed to integrate community, environment, and health values and perspectives, and account for diverse forms of knowledge and information, to inform the development of cumulative impact assessment tools. These conversations were also an important avenue through which CIRC could better understand how our ongoing research can best enhance on the ground capacity to respond to issues related to cumulative impacts. For more information about the "New Tools" project, please visit the [project description](#) on the CIRC website.

The 2019 CIRC presentations were intended as an opportunity for people living in and around the communities visited to learn about what CIRC staff heard from workshop participants in the previous two phases of research, provide feedback on the preliminary community report, and see the tools and processes piloted throughout the project. CIRC staff presented a Preliminary Community Report that summarized the goals, process, and findings of the project. Additional time was devoted to outlining the tools and processes that CIRC piloted in the course of the project for LEARNING about cumulative impacts; SHARING local knowledge, experiences, and ideas; and ENVISIONING the next generation of integrated assessment tools.

Following this project's final round of community visits, CIRC staff will write the Final Community Report and continue to work on new tools for integrated impact assessment.

Key Messages

Across all the communities visited, participants were eager to engage with the information and resources provided by CIRC staff. People appreciated hearing what CIRC learned through the previous two phases of community workshops, as summarized in the presentation and Preliminary Community Report. Some specific questions were raised regarding the discussion of research findings, which will inform the Final Community Report:

- What were the concerns of youth compared to older generations, who may have noticed cumulative impacts over many decades?
- What were the concerns of longtime residents compared to newcomers?
- Is there a comparison of concerns among regional districts?

Overall, there was a reaffirmation that cumulative impacts assessment tools would be valuable to local land and resource-based decision-making and community planning. Place-based decision-making requires such locally-scaled tools as well as support for local capacity building. People recognized that this integrative and cumulative work is difficult to do, even when pointing out what they saw as potential shortfalls.

People were consistently generous and considerate with their comments when providing candid and critical feedback of the tools and processes developed through this project, including the Cumulative Impacts Living Library, Integrated Regional Profiles, Regional Storytelling Maps, Values Ranking activity, Youth Values Mapping activity, Data-driven storytelling process, and various CIRC reports, publications, and presentations available on the CIRC website.

Attendees were particularly interested in the cumulative impacts assessment and visualization tool still under development. This is a GIS-enhanced measurement and visualization of combined cumulative impact indicators by regional district. Regional districts were chosen because we know that this is a unit of geographic analysis that people have mandates and responsibilities to govern. At this point, our pilot list includes 18 indicators for which there is publicly available data across the province. Each indicator for a regional district is ranked, and the rankings are combined to produce a cumulative impacts score. A region with a high score is one with potentially more vulnerabilities to burdens than a region with a lower score that indicates more equity in the combination of key environmental and social indicators. This is a work in progress and information will be shared more explicitly on the CIRC website when the data has been appropriately vetted and sensitivity analyses of these data have been run.

Overall Discussion Themes

Participants in all communities were keenly interested in this tool and eager to engage with a final product. In general, participants' questions and comments referred to six broad areas: geopolitical scale and granularity; timescale; data collection and updates; indicator selection; intended audience and use; and intended outcome. Discussion themes specific to each community are in the next section.

Geopolitical scale and granularity: The cumulative impacts assessment and visualization tool is being developed to get a snapshot of cumulative impacts across British Columbia, with the regional district as the unit of analysis. Discussion participants were interested in seeing a tool that could take notice of

indicators at a more granular level, such as a municipality or sub-watershed. People were concerned about the applicability of a province-wide model to their localities, each with unique conditions and concerns. Participants indicated that having a template for the tool in which local decision-making bodies could enter their own data would help respond to that need. It was recognized that a second template-based tool would be distinct from the province-wide comparator currently under development.

Timescale: The timescale of the cumulative impacts assessment and visualization tool has important implications for its potential use and application. For example, some people asked, would the tool simply provide a snapshot in time—as of the most recent Census—or could it visualize cumulative impacts over a period of time? If so, what would be the base? Could the tool capture impacts going back in time, for example to capture a turning point in local industry 50 years ago? And would the tool be capable of extending the cumulative impacts visualization even further into the past, for example to represent the impacts of exposure to European diseases on First Nations populations starting in the 1700s?

Data collection and updates: In every community, discussion participants indicated that having up-to-date data would maximize the tool's usefulness. It would be ideal for the data used in the tool to be updated at least every census, if not more frequently. Data collection and frequent (or real-time) updating is critical, but it was recognized that this would take significant resources and ongoing funding. People pointed out that often there is data available locally that has been collected by a district, municipal, or First Nations governing body. It was also acknowledged that other localities may not necessarily have the same data or consider it to be important. A key question is how local data could (or even should) be incorporated into a tool that compares the same data sets across all regional districts. By prioritizing indicators for which data is available province-wide, the tool excludes locally-available data, and a justification for this decision would respond to some of the concerns of participants.

Indicator selection: Much of the discussion of the tool in each community visited concerned the choice of indicators. People asked questions regarding why certain indicators were chosen, listed indicators for which there is local data, voiced which indicators would be most useful to decision-making in the local context, and made suggestions for additional indicators that could get at environmental exposures, environmental effects, sensitive populations, and socioeconomic marginalization. Participants communicated that it is important for the final tool to justify the choice of indicators, explain what each data point is indicating, and take note of the positive as well as the negative local implications of each indicator. For example, high traffic density may have negative health impacts, but could also point to booming businesses. Additional detail about indicators is discussed in each community below.

Intended audience and use: A practical question for many discussion participants was who would be using this tool, and how. For some, it made sense for the tool to be used at the level of the regional district; for others, it seemed more applicable to policy makers at the provincial level. People were eager to be able to use the tool for local decision-making, for example in economic development planning. Guidance for use and recommendations for application would be helpful, along with clear directions of how to access the tool (e.g. online or otherwise). Some participants pointed to issues for the tool's long-term viability: the need for buy-in from the province, and a governance mechanism to create oversight and continuity regarding cumulative impacts beyond the four-year election cycle.

Intended outcome: Discussion participants raised questions about the intended outcome of the tool. A consistent piece of feedback provided was along the lines of “it’s nice to bring all the information together, but what’s the point?” The tool is being designed to compare the cumulative impacts captured in chosen indicators in each regional district in the province. As such, it provides regional districts with a snapshot of where they are at. But what should they do with that information? For example, will there be any guidance provided on how regional districts could work on mitigating or decreasing vulnerabilities? If one regional district demonstrates strengths, what lessons can be applied to other districts? Will the tool simply capture overall trends, or will it also attend to the unique attributes or conditions of each district? How might regional districts leverage the information brought together in the tool to support local decision-making and/or access additional resources for identified needs from the provincial government?

Discussion Themes by Community

In Fort Nelson, several people were concerned that the cumulative impacts assessment and visualization tool would only capture the negative impacts of resource development, missing the positive impacts that community members value. Participants also pointed out that the boom and bust timeline may be shorter than the census cycle, and that a tool that depends on census data would therefore miss significant local information. It was suggested that developing real-time measurements would be ideal, along with the adaptation of indicators to take into account local experiences and perspectives. People were eager to provide feedback on a later iteration of the tool. The tool provides a snapshot of cumulative impacts in a slice of time, but more information is needed to understand the significance of the data. It was pointed out that not all indicators are simply negative; some may bring positive outcomes, such as hazardous waste facilities that are properly disposing waste, and increased traffic that brings in people to spend money locally. Specific indicators suggested by people in Fort Nelson included the local living wage, the local cost of a food basket, and a variety of indicators used in Fort Nelson First Nation’s State of the Community Report.

Part of the discussion that took place in Fort St. John suggested expanding the focus on community, health, and environment to include Indigenous values. There are many Indigenous communities in the Peace River region, and it was expressed that a cumulative impacts assessment and visualization tool should take into account Indigenous values, ways of knowing, and political context (including legal obligations for treaty rights as well as commitments to truth and reconciliation) in relation to other jurisdictional authorities as an essential part of the local context. Other discussion participants expressed that greater granularity is necessary to use the tool at the regional district scale. There was interest in incorporating locally collected data into the tool, such as First Nations data on wildlife. It was pointed out that giardia is not a good indicator of water quality, and that mercury contamination would be better (since water is treated by the municipality, giardia occurrences are one-off events, for example when camping). Questions were asked regarding how dams are accounted for in the linear footprint indicator, the footprint of oil wells beyond the point of extraction, the buffers used, and whether education levels include children. Specific indicators suggested by people in Fort St. John included cancer rates and mercury levels in water.

In Dawson Creek, people discussed the challenges associated with accurately depicting impact and mitigating bias. There was interest in incorporating locally collected data into the tool, such as water quality data gathered by the regional district. Participants were interested in capturing the nuances of

indicators to depict benefits as well as vulnerabilities. For example, a land use closure may have a negative impact on local industry and tourism but positive impact on environment and at-risk species such as caribou. Additional locally relevant issues brought up included wind farms and the impacts on tertiary industries (e.g. hospitality and sales). Specific indicators suggested by people in Dawson Creek include seismic events, methane leaks, surface water quality, and groundwater quality.

People in Tumbler Ridge were eager to share their experiences of resource development, boom and bust cycles, population shifts, and economic diversification. Despite the drop in coal prices from 2011-2016, two mines have come back and are currently operating in the area. However, shifts of seven days on and seven days off have resulted in more transient workers. Participants indicated that the local landscape is also impacted by logging and oil and gas, but that the businesses and workers are based elsewhere. There was a strong recognition of Tumbler Ridge's post-resource potential, with a small but growing ecotourism sector that recently received a boost as being chosen as a promotional site for the HBO television series *Game of Thrones*.

In Hudson's Hope, people noted the intergenerational differences in the experiences of cumulative impacts, pointing out that old people notice the effects over many decades and younger people cannot remember a landscape that existed before it was disturbed (for example, by a dam). Participants noted that Hudson's Hope did their own cumulative impacts assessment of multiple resource development projects on the local landscape, which was presented to the Site C review panel. It was observed that camps with 10,000 – 20,000 workers bring significant impacts. Interest was expressed in a mapping tool that could show mining, forestry, and oil/gas impacts as their own layers. Specific indicators suggested by people in Hudson's Hope included drawdown from the W.A.C. Bennett Dam (in which exposed dirt and dust impacts air quality), and the entire footprint of the Williston Reservoir (including the downstream flood area in the case of an emergency breach).

The discussion space was used by people in Chetwynd to explore connections and future conversations for local planning and stewardship. Several participants had a strong sense of how they could potentially make use of the cumulative impacts assessment and visualization tool, and sought to explain it to each other. It was noted that health impact assessment work was carried out in the area in the 1990s, but little was seen in the way of implementation. Food security came up as a locally-relevant theme: groceries are expensive and of low quality, and there is less wild game at the same time as fewer community hunters exercising traditional land use rights (many people go away for work). A suggestion was made for an economic leakage study to assess how much local income is spent out of town. Participants questioned the effectiveness of using *E. coli* as a water quality indicator, and wondered how decreased water quality could affect property values. Specific indicators suggested by people in Chetwynd included water sediment levels, diabetes and stroke rates, and mental health indicators.

In Vanderhoof, people were eager to encourage their local government to do something with the project's research findings, with recommendations for decision-makers and clear instructions on how to access the information. Some frustration was expressed that people are observing cumulative impacts at the local scale, but no one in higher levels of government is listening. There was interest in identifying tipping points for cumulative impacts, and in incorporating watersheds into the tool. It was pointed out that whether an indicator results in a positive or negative outcome is relative to perspective. Language was discussed as a relevant indicator for First Nations communities—for example when accessing health services—and that the ways in which questions are asked and instructions given can also be a

barrier. Specific indicators suggested by people in Vanderhoof included wildfires, occupational exposure to contaminants, crime rates, drug use, percentage of pregnancy failures, and a variety of indicators used in environmental impact assessment processes.

Next Steps

In the coming months, CIRC staff will continue to process, reflect on, and build this information into the next iteration of the cumulative impacts assessment and visualization tool. Updated information about the tool will be shared on the CIRC website after additional development and refinement. The project's Final Community Report, along with the [tools and processes](#) already developed for the project will be made publicly available on the CIRC website, along with the [community reports](#) from the previous rounds of engagement.

Acknowledgements

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For more information about this event and the CIRC, please contact:

The Cumulative Impacts Research Consortium
circ@unbc.ca

www.unbc.ca/cumulative-impacts
www.cumulativeimpactslivinglibrary.ca