New tools to assess the cumulative environmental, community and health impacts of resource development



Taylor, BC (Buse 2017)

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RAIL Commons | Olds, AB September 30, 2017



Berg Lake, BC (Buse 2016)

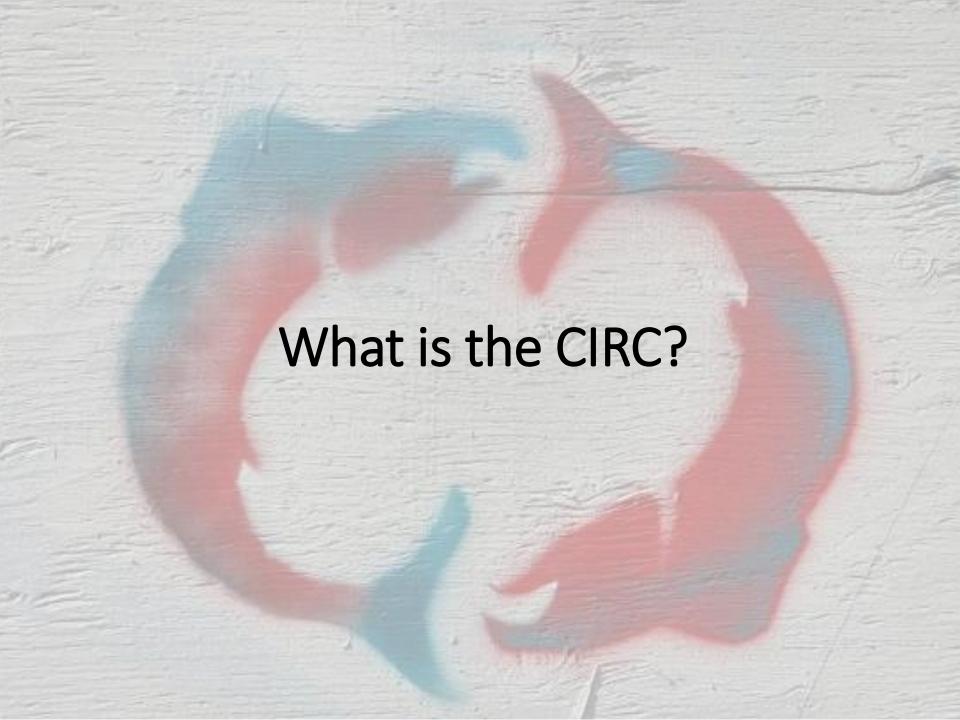


Outline

Introduction to the CIRC

- Background: Cumulative effects and impacts
- New tools and processes to address the cumulative impacts of resource development
- Discussion





Introducing the Cumulative Impacts Research Consortium

The CIRC is a pan-UNBC initiative that provides a platform for research and community dialogue to understand the cumulative environmental, community and health impacts of resource development across northern BC



Acknowledgements

Steering Committee

Present: Greg Halseth (CDI); Marleen Morris (CDI); Margot Parkes (HRI); Henry Harder (HRI); Rachael Wells (HRI); Art Fredeen (NRESi); Al Wiensczyk (NRESi); Michelle Connolly (PICS); Madeline Wilson; Chris Buse; Marieka Sax

Past: Kyle Aben (PICS); Leanne Elliott (NRESi)

Funding Support



Pacific Institute for Climate Solutions Knowledge, Insight, Action,







Advisory Committee

Present: John Disney; Lana Lowe; Joan Chess; Nicole Cross; Andy Ackerman; Viva Wolf; Wayne Salewski; Sandra Harris; Charl Badenhorst; Alan Madrigga; **Rob Spitzer**

Past: Richard Kabzems; Jenn Pighin

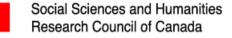
Student RAs

Ryan O'Toole; Bunu Gauli-Sharma; Katie Cornish; Jenn Baddeley; Scott Brown; Nadine Meroniuk; Rebecca Delorey; Val Lai; Nadia Nowak; Theresa Fresco



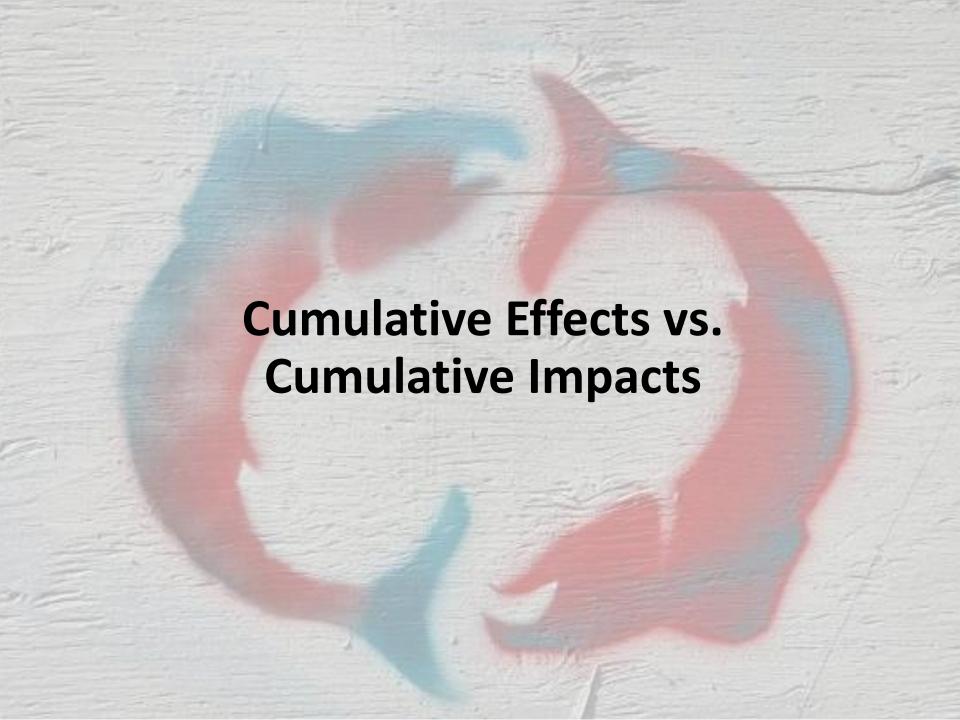






Conseil de recherches en sciences humaines du Canada





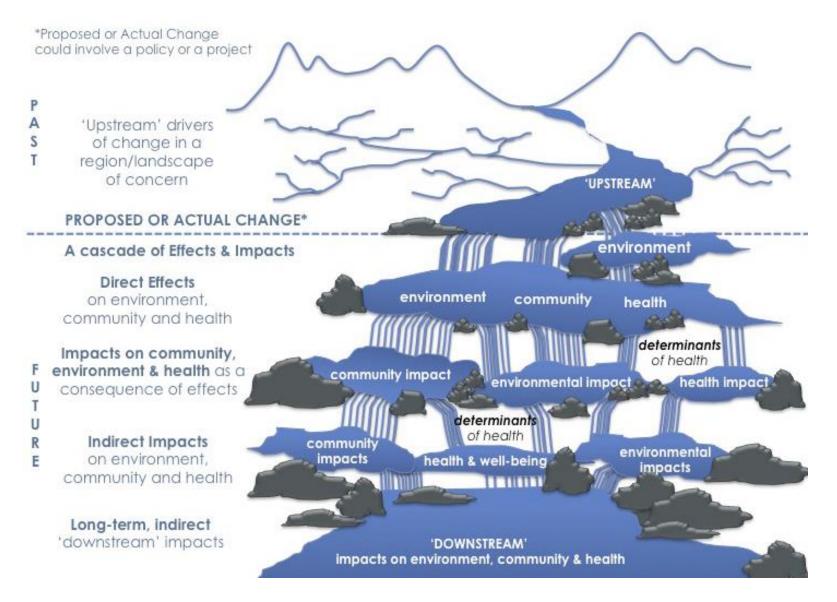
What are cumulative effects?



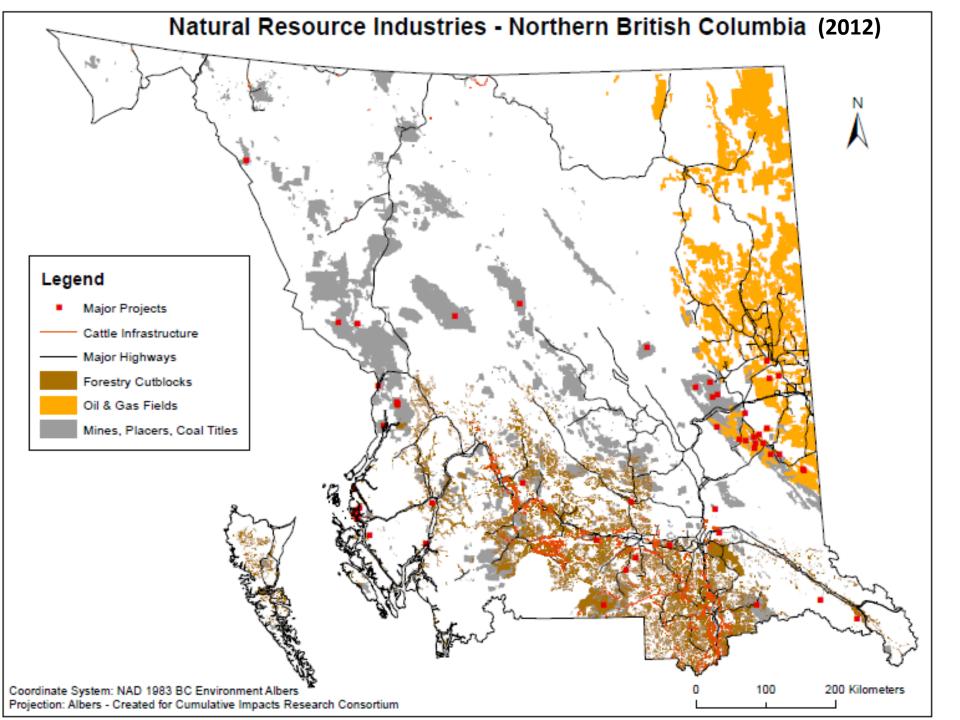
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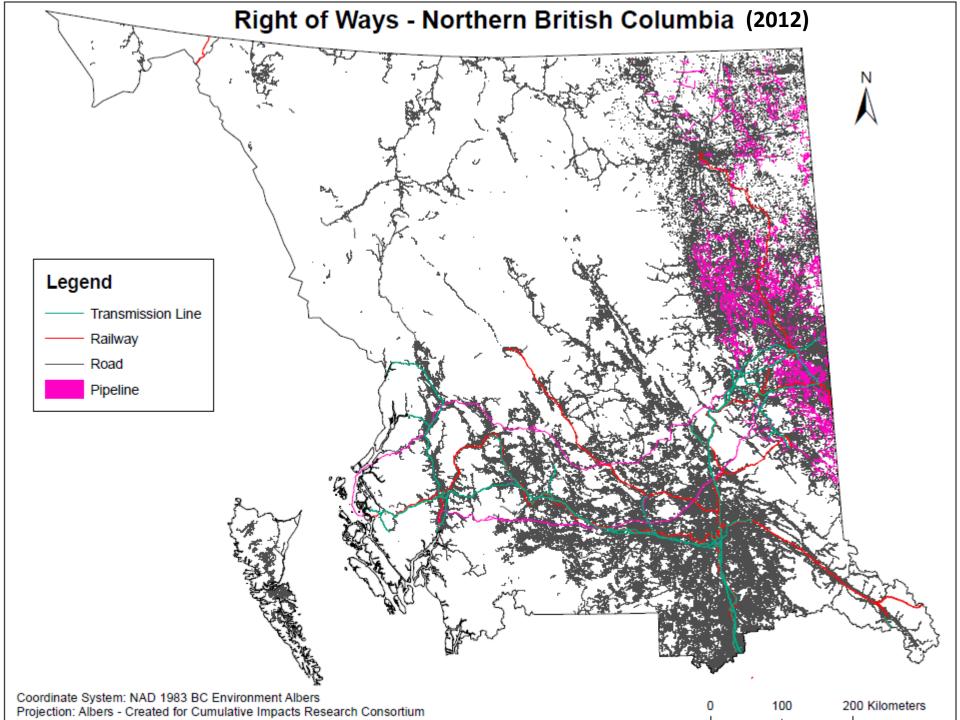


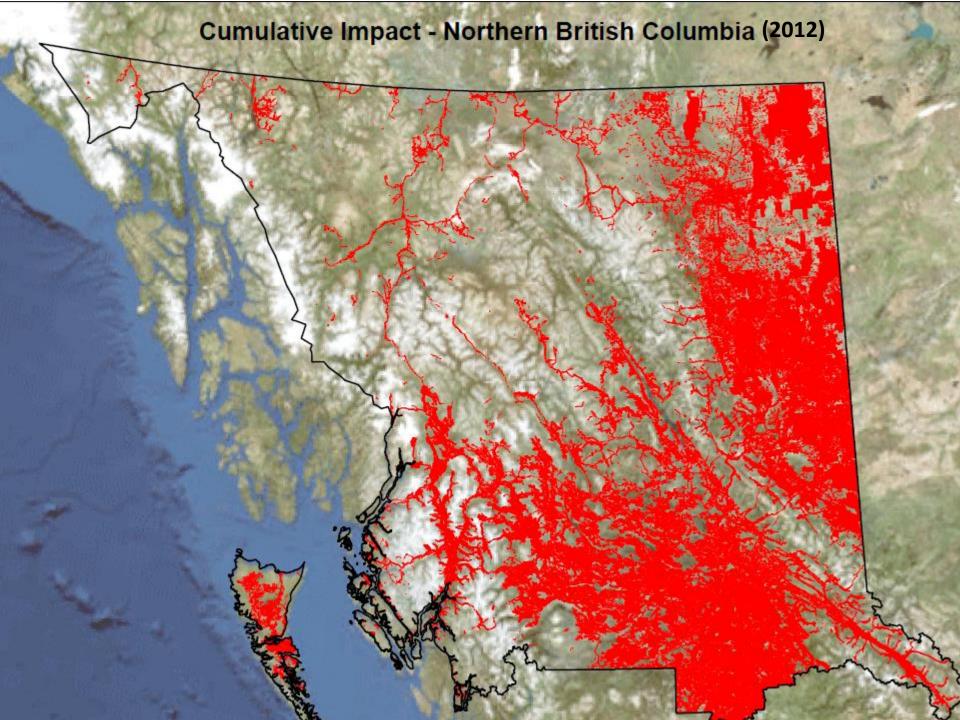
What are cumulative impacts?

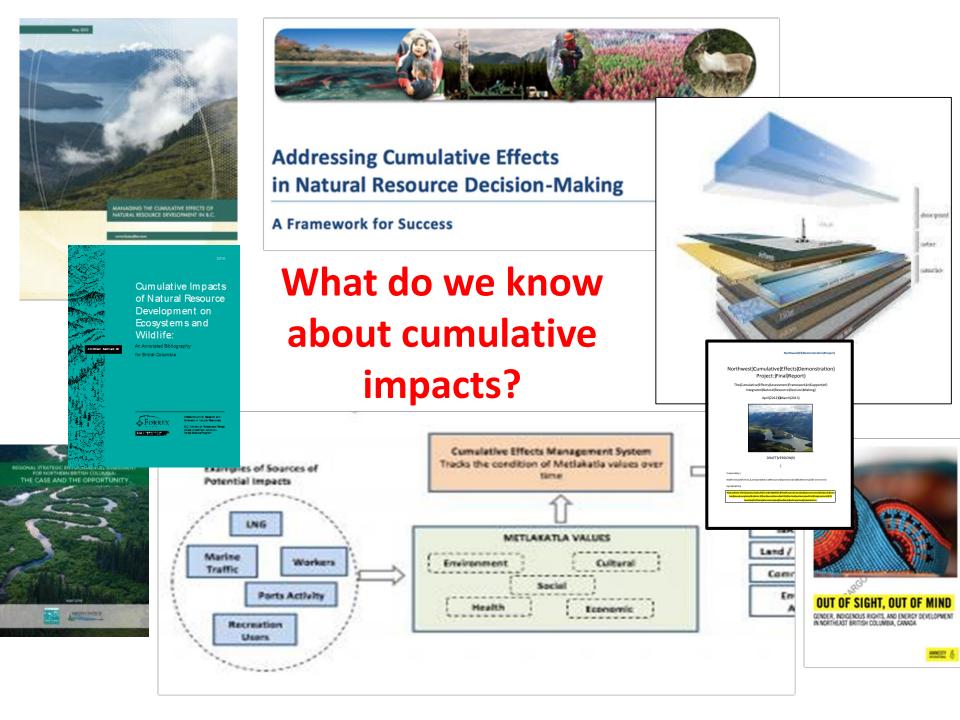


Source: Margot Parkes (2016) Chapter 6, The Integration Imperative









However, significant gaps still exist in scientific knowledge...

- Thresholds for change, tipping points, and management triggers
- Robust science on environmental effects, longer term impacts less well understood
- Studies typically communicate potential rather than actual risk to environments

... and in practice

Limited consistency in assessment across sectors

Incorporation of socio-economic, cultural and health values into assessments

 Few (but growing!) number of regional, landscape-level assessments

 Public discussions of balance between avoidance of development vs. minimization of risks vs. restoration





New tools for integrated cumulative impact assessment and land-use planning

Project Goal: to provide new, integrative and holistic supports for communities that reflect environment, community and health values to better understand the cumulative impacts of resource development

LEARN

about and participate in the practice of cumulative impacts assessment

SHARE

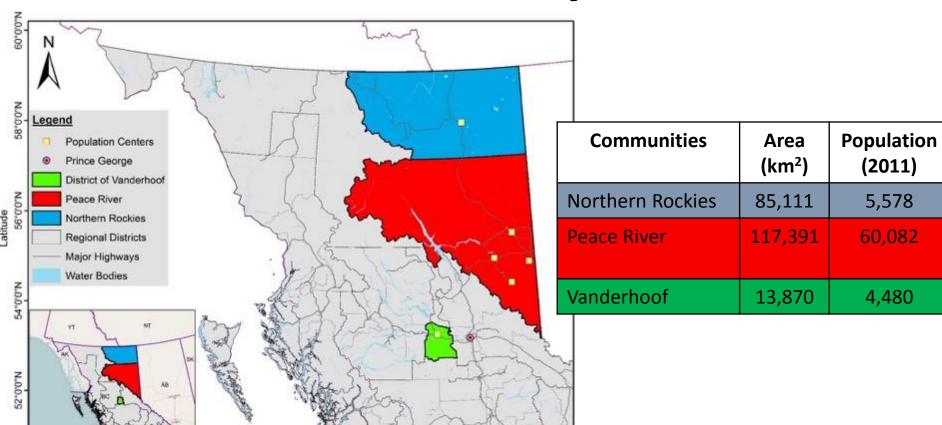
best practices, local knowledge, experiences and ideas

ENVISION

the next
generation of
integrated
assessment tools



"New Tools": Case Study Communities



500

123°0'0"W

120°0'0"W

250

126°0'0"W

135°0'0"W

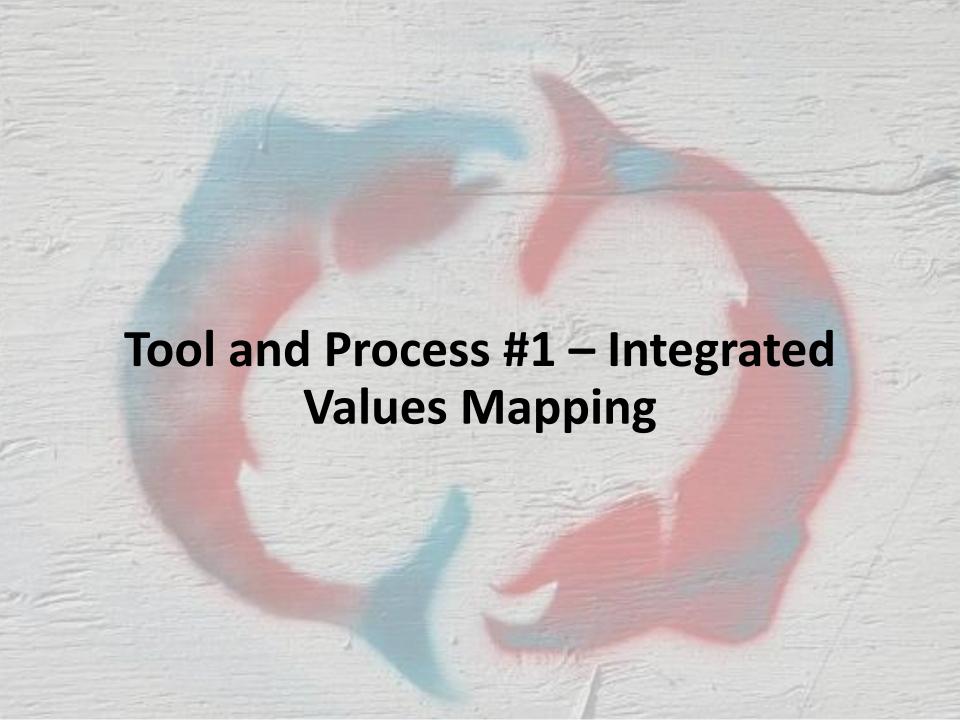
132°0'0"W

129°0'0"W

Longitude

138°0'0"W





Tool/Process #2: Youth values workshop with SD91

Goal: To explore youth perspectives on environmental, community and health values in and around the Nechako/Vanderhoof region through an interactive values-mapping activity

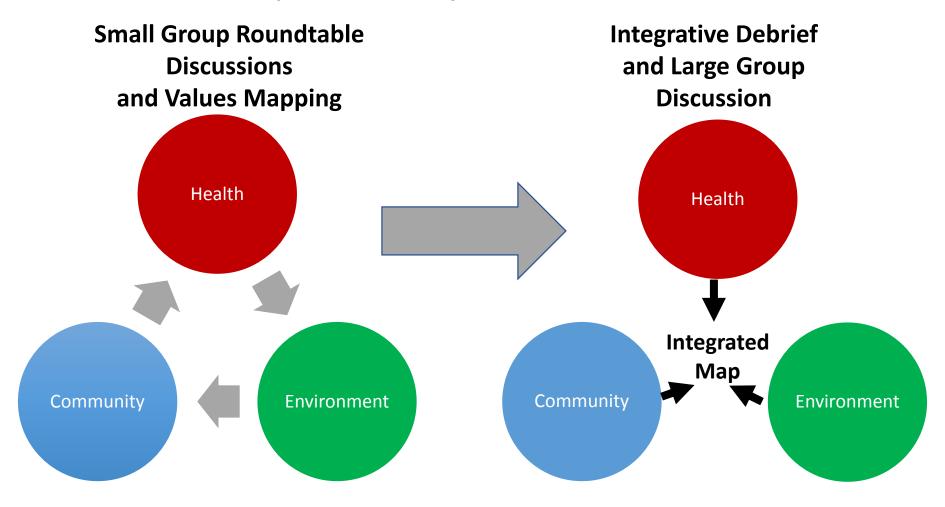
While public consultation is typically a central and often mandated part of the assessment process, youth voices are often underrepresented in current practices at best, or missing entirely at worst







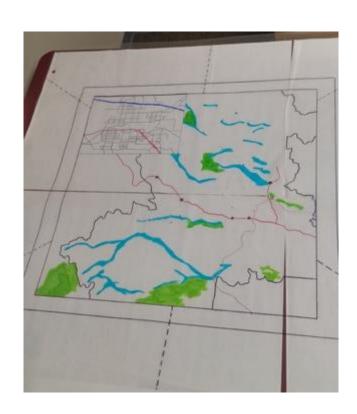
Phase 1 (Process): Values Elicitation







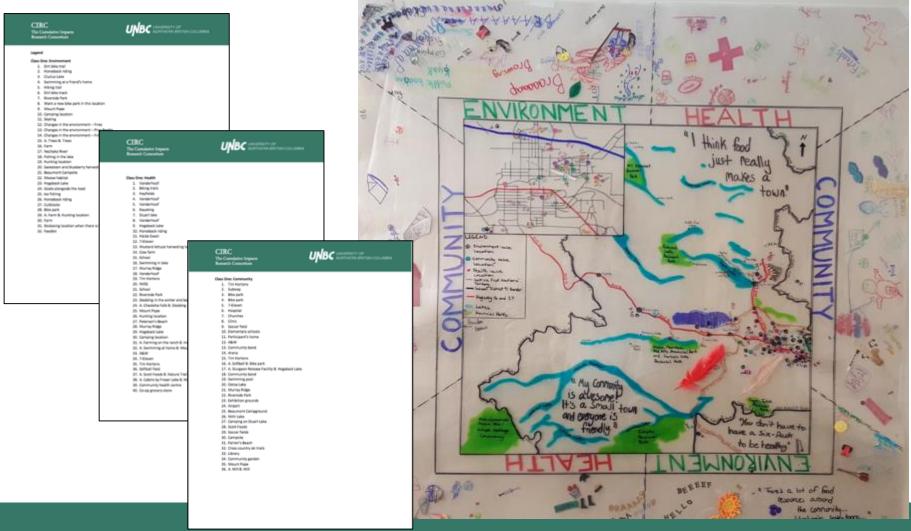
Example Map (Start) — Example Map (Round 1)







Phase 2 (Tool): Example Map (Completed)







Tool and Process #2 – Integrated Cumulative Impact Assessment and 'Data-driven story-telling'

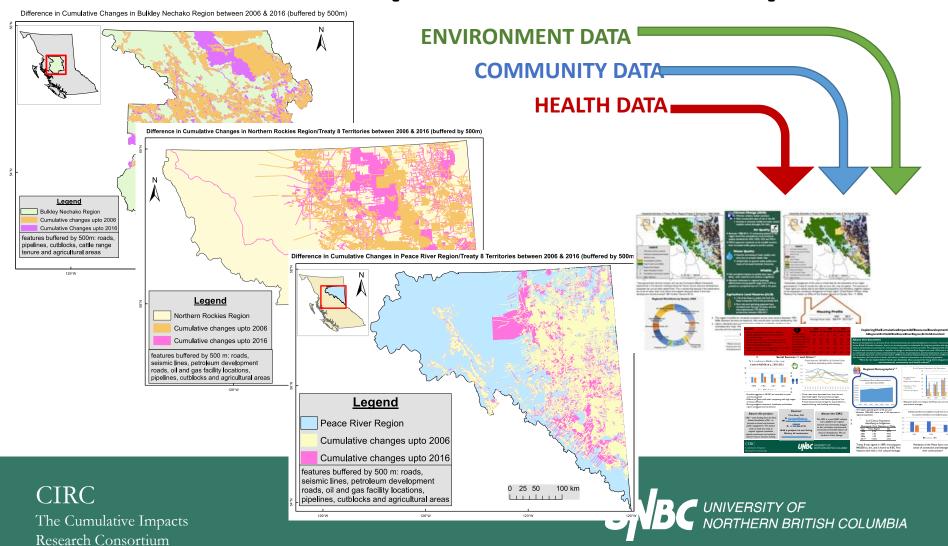
Stage 1 (Process): Elicitation of Community Values

Fort Nelson

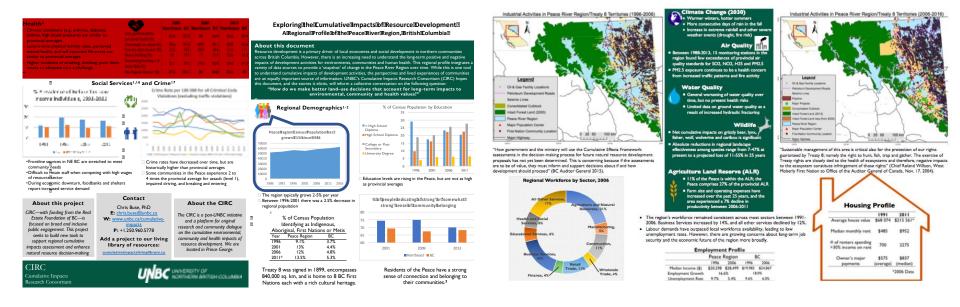
Meta-Value	% of all votes
Balance between development and conservation	15.4%
Health/promotion/ prevention	12.5%
Connecting communities through reconciliation	7.7%



Phase 2 (tool): Building integrated cumulative impact assessment pilots



Integrated Regional Profiles





Phase 3 (Process): Data-driven story-telling

"I guess for me it was the flooding of the Williston Reservoir...And that's had a huge impact on the whole area. The forest base has been destroyed, the impact on residents, on First Nations, the residents who have waited 40-45 years to claim settlements. The change, I mean it's a piece of land that's basically inaccessible by most people now. It has had an enormous impact on the area, both social and environmental. I made money off that, I worked at the dam, I was employed in construction. It has changed our world"

-Participant, Fort St. John





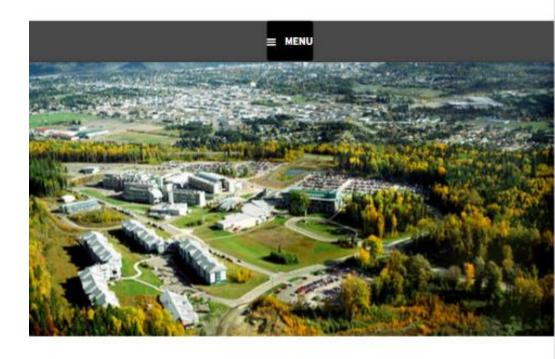
The Cumulative Impacts
Research Consortium



CUMULATIVE IMPACTS LIVING LIBRARY

CUMULATIVE IMPACTS RESEARCH CONSORTIUM

Other Examples of "New Tools" (1)



WELCOME

www.Cumulativeimpactslivinglibrary.ca

The Cumulative Impacts Living Library is a searchable database of projects and organizations broadly related to the cumulative impacts of resource development in Canada.

Feel free to browse through the various projects and organizations by visiting the *Library* page.

You can narrow your search by selecting one of the regions listed, or by entering various keywords into the search tool.



Other Examples of "New Tools" (2)

Indicator Development for Improved Socioeconomic and Health Impact Monitoring in Environmental Assessment Processes (funded by HRI w/ Northern Health and PHSA)

	Indicator	Description	Available Data Sources	Original Documents
Safe Housing			Statistics Canada - Shelters for abused women,	Opportunities to Meet the Health Needs of the Stuart
	Access to safe housing	The right to accessible, secure, affordable, culturally appropriate, and habitable housing	2014. Transitional homes in Canada	Lake/Nak'al Bun Area
	Homes are safe and secure	Whether an individual would consider where they live to be a safe and secure place of residence	Statistics Canada - Shelters for abused women, 2014. Transitional homes in Canada. Housing and shelter costs	Ellison et al., 2015. Ellison, C., Wyman, O., Reynolds, C., & Alessi, C. (2015). Measuring wellness: An Indicator Development Guide for First Nations. Ktunaxa Nation Council.
	Number of smoke free homes	The number of homes that are non-smoking. Residents of the home do not smoke indoors.	Statistics Canada - Second hand smoke	Ellison et al., 2015.
	Percentage of homes with smoke alarms	The percentage of homes that are equipped with an adequate number of functioning smoke detectors	BC Stats - BC Annual Statistical Fire Report, 2012, Statistics Canada - Survey of emergency preparedness and resilience	Ellison et al., 2015.
Housing maintenance	Houses without running water/kitchen facilities	The number of homes within a given area that are without necessary services such as running potable water and access to kitchen and cooking facilities	Source not given	Ellison et al., 2015.
	Percent of homes served by centralized water treatment plants and sewage disposal systems	The number of homes in a community that are receiving essential services of water treatment and adequate sewage disposal	Environment and Climate Change Canada - residential water use 1991-2011. BC Stats - environmental reporting BC	Ellison et al., 2015.
	Number of homes needing repairs (minor, major, regular maintenance)	The number of homes in a given community that require any degree of maintenance	National household survey, 2011. Census 2006, 2011, Statistics Canada - housing conditions	Ellison et al., 2015.
	Percent of homes served by centralized minor or regular maintenance	A percentage of the number of homes being responsibly and adequately maintained within a community	National household survey, 2011. Census 2006, 2011, Statistics Canada - housing conditions	Ellison et al., 2015.
	Number of properties under construction	The number of properties that are currently under construction within a given period of time	Canada Mortgage and Housing Corporation, local contractors and sub-contractors	LNG Canada CLISMP
	Number and value of building permits issued		BC Stats (Municipal permit records)	Grassy Point LNG
Social housing and homelessness	Social Housing usage rates	The vacancy rates for social housing units within a community	BC Stats	Grassy Point LNG, Standard Working Group Comments and Recommendations for Provincial Environmental Assessments in Northern British Columbia: Suggested Candidate Valued Components for Assessing Health Impacts
	Number of social housing properties	The number of social housing homes within a community	Canada Mortgage and Housing Corporation	LNG Canada CLISMP, Interim Support for Developing Health Baselines for Projects in the Prince Rupert Area
	Waitlists for affordable/assisted housing	Whether or not there is a waitlist in order to be placed in an assisted housing unit	Canada Mortgage and Housing Corporation	LNG Canada CLISMP
	Number of members on housing waitlist	At least 30 members have been on the housing waiting list since 1990	Assembly of First Nations, 2013. Indigenous an	Takla Lake First Nation Socioeconomic Study 2014
	Homelessness rate	the condition of people without a permanent dwelling, such as a house or apartment, often with the inability to maintain safe and secure housing	Statistics Canada (PROXY MEASURES)	Standard Working Group Comments and Recommendations for Provincial Environmental Assessments in Northern British Columbia: Suggested Candidate Valued Components for Assessing Health Impacts
	Homeless count	The number of individuals residing within a community that are without a home (including couch surfing, and those living on the street)	Statistics Canada - number of people living in shelter during the census, residential facilities (shelters) for female victims of domestic violence. (PROXY MEASURES)	LNG Canada CLISMP, First Nations Health Authority Northern Caucus Overview of Sub-regional Engagement Sessions: Health and Resource Development Fall 2015
	Overcrowding	the situation in which more people are living within a single dwelling than there is space for, so that movement is restricted, privacy secluded, hygiene impossible, rest and sleep difficult	Statistics Canada - Persons per room of private household	Standard Working Group Comments and Recommendations for Provincial Environmental Assessments in Northern British Columbia: Suggested Candidate Valued Components for Assessing Health Impacts, BC. Murray River Coal, Ellison et al., 2015



Additional projects Incubated through the CIRC Initiative

- A case study review of innovative and cost effective brownfield remediation strategies in rural and remote communities (BC OGC)
- Examining the 'state of the art' of CEA in BC through interjurisdictional comparative case studies (UNBC / NSERC)
- Examining the community impacts of unconventional natural gas development in BC along the supply chain (SSHRC)
- Analyzing the health equity impacts of unconventional natural gas development (Michael Smith Foundation for Health Research)
- Whose brownfields count? Effective brownfield remediation strategies for rural and remote communities



Discussion

- Resource development across Canada has left lasting environmental, community and health impacts
- There is increasing appetite to revisit landscape-level planning in BC, but to do so we must consider...
 - Problems with past landuse planning process (in BC, e.g. LRMP)
 - The integration of community and health values into planning processes beyond \$ contributions to provincial coffers
 - Strategic consideration of meaningful units of analysis that map onto existing data availability at the regional level
 - Incorporation of lived experience of marginalized stakeholders into the planning process



Thank you!

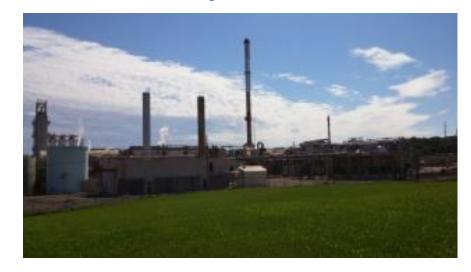
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For more information about related projects incubated through the CIRC:

www.unbc.ca/cumulative-impacts







Discussion

- What has been the experience of managing for cumulative effects/impacts of development activities in Alberta?
- What tools and processes are you aware of that could help balance diverse land-use values in an integrated way?