

Open Letter on the Joint Review Panel report regarding the Northern Gateway Project

May 26, 2014

The Right Hon. Stephen Harper
Prime Minister of Canada
Langevin Building
80 Wellington Street
Ottawa ON K1A 0A6

Dear Prime Minister Harper:

Based on the evidence presented below, we, the undersigned scholars, have concluded that the Joint Review Panel's (JRP) assessment of the Northern Gateway Project (the Project) represents a flawed analysis of the risks and benefits to British Columbia's environment and society. Consequently, the JRP report should not serve as the basis for concluding that the Northern Gateway Project is in the best interests of Canadians. **We urge you in the strongest possible terms to reject this report.**

The Canadian electorate expected the JRP ruling to present a balanced and appropriate consideration of the risks and benefits of the Project, drawing upon the best available evidence, and expressing a cogent rationale for the final ruling.

By our analysis, the Canadian electorate received a ruling that is not balanced or defensible due to five major flaws. The Panel's review:

1. Failed to adequately articulate the rationale for its findings,
2. Considered only a narrow set of risks but a broad array of benefits, thereby omitting adequate consideration of key issues,
3. Relied on information from the proponent, without external evaluation,
4. Contradicted scientific evidence contained in official government documents, and
5. Treated uncertain risks as unimportant risks, and assumed these would be negated by the proponent's yet-to-be-developed mitigation measures.

Below, we expand on these five fundamental flaws that invalidate the report as an appropriate basis for your Cabinet to approve the Project.

1. Failure to Articulate a Rationale

The panel failed to articulate a rationale for numerous findingsⁱ, and failed to satisfy the criteria of "justification, transparency and intelligibility" expected of administrative tribunals.ⁱⁱ Such a rationale is fundamental to both scientific and legal judgment. The Panel's charge was to determine whether the Project is in the public interest of British Columbians and Canadians, based on a critical analysis of the Project's economic, environmental and social benefits, costs *and* risks over the long term. Instead of such a balanced consideration, the panel justified its recommendation of the project by summarizing the panel's understanding of environmental burdens in five short paragraphsⁱⁱⁱ and judging that these adverse environmental outcomes were outweighed by the potential societal and economic benefits. Without a rationale for why the expected benefits justify the risks (e.g., why must an environmental

effect be certain and/or permanently widespread to outweigh economic benefits that themselves are subject to some uncertainty?), any ruling of overall public interest is unsupportable.

2. Consideration of Narrow Risks but Broad Benefits, Omission of Key Issues

The panel included in its deliberation a broad view of the economic benefits, but an asymmetrically narrow view of the environmental risks and costs. The need for the Project as stipulated by Enbridge includes consideration of the enhanced revenues that would accrue from higher prices for oil sands products in Asian markets. These enhanced revenues are benefits to producers *from production*. The environmental risks, however, were only considered if they are *associated with transport, not production or later burning/consumption*. All negative effects associated with the enhanced production of oil sands bitumen, or the burning of such products in Asia, were excluded, as were greenhouse gas emissions generally.^{iv} This exclusion of the project's contributions to increased atmospheric emissions undermines Canada's formal international commitments and federal policies on greenhouse emissions.^v Other key issues omitted include the difficulty of containing freshwater spills under ice, as has already been demonstrated on the Athabasca River from oil sands developments.^{vi}

3. Reliance on Information from the Proponent, without External Evaluation

On critical issues, the panel relied on information from the proponent without external assessment. For example, on the pivotal matter of the risks of a diluted bitumen tanker spill, the panel concluded that a major spill was unlikely.^{vii} Yet, a professional engineers' report concluded that the quantitative risk assessment upon which the panel relied was so flawed as to provide no meaningful results.^{viii} Regarding the consequences of such a spill, the panel relied on the proponent's modeling to conclude that the adverse consequences of a spill would not be widespread^{ix} or permanent,^x even as it acknowledged that there is much uncertainty about the behavior of diluted bitumen in the marine environment. That modeling discounted the prospect that diluted bitumen could be transported long distance by currents, when the product submerges, as it does under a wide range of conditions.^{xi} Thus, the panel may have underestimated the scale of potential damages. Because the proponent is in a clear conflict of interest, an independent assessment of potential oil spill damage should have been commissioned.

4. Contradiction of Official Government Documents

A decision on the potential for significant adverse environmental effects on any species or habitat must be consistent with the government's own official documents. The panel's conclusions that marine mammals in general will not suffer significant adverse cumulative effects stands in direct contradiction to the government's own management and recovery plans.^{xii} For example, the Recovery Plan for large whales (blue, fin, and sei whales—species-at-risk under the federal *Species at Risk Act*, SARA) lists "collisions with vessels, noise from industrial ... activities, [and] pollution" as imminent threats—all three threats are associated with the NGP proposal^{xiii}. Contamination has also been identified as a threat for other marine mammals: the management plans for both the sea otter^{xiv} and the Steller sea lion^{xv} identify a risk from marine contamination—in particular the acute effects of large oil spills, but also from the toxicity of smaller, chronic spills that are likely to increase proportionally with vessel traffic. The panel also failed to account for newly identified critical habitat of the humpback whale and failed to specify how the proponent's mitigation plan would reduce the significant risks from increased shipping, a serious threat identified in the recently published Recovery Strategy for the species.^{xvi} A plan to

manage the threats to the species and its habitat is a legal requirement given that the humpback whale is a species of Special Concern under SARA.

5. Inappropriate Treatment of Uncertain Risks, and Reliance on Yet-To-Be-Developed Mitigation Measures

The panel effectively treated uncertain risks as unimportant. For instance, Northern Gateway omitted specified mitigation plans for numerous environmental damages or accidents. This omission produced fundamental uncertainties about the environmental impacts of Northern Gateway’s proposal (associated with the behaviour of bitumen in saltwater, adequate dispersion modeling, etc.). The panel recognized these fundamental uncertainties, but sought to remedy them by demanding the future submission of plans. However, the panel described no mechanism by which the evaluation of these plans could reverse their ruling. Since these uncertainties are primarily a product of omitted mitigation plans, such plans *should have been required and evaluated before the JRP report was issued*. To assume that such uncertainties would not influence the final decision of the panel, is to sanction the proponent’s strategic omissions, and effectively discount these potentially significant risks of the Project, to the detriment of the interests of the Canadian public.

Conclusion

The JRP report could have offered guidance, both to concerned Canadians in forming their opinions on the project and to the federal government in its official decision. However, given the major flaws detailed above, the report does not provide the needed guidance. Rather, the JRP’s conclusion—that Canadians would be better off with than without the Northern Gateway Project given all “environmental, social, and economic considerations”^{xvii}—stands unsupported.

Given such flaws, the JRP report is indefensible as a basis to judge in favour of the Project.

Sincerely,

Kai MA Chan,
Associate Professor,
University of British Columbia

Anne Salomon
Assistant Professor,
Simon Fraser University

Eric B. Taylor
Professor,
University of British Columbia

Elena Bennett, Professor, McGill University
James M Byrne, Professor, University of Lethbridge
Michael Barkusky, Founding Director, Pacific Institute for Ecological Economics
Suzanne Bayley, Emeritus Professor, University of Alberta
Ratana Chuenpagdee, Professor, Memorial University

Simon Donner, Associate Professor, University of British Columbia
Edward Gregr, Professional Biologist / Recovery Plan Author, University of British Columbia
Eric Higgs, Professor, University of Victoria
George Hoberg, Professor, University of British Columbia
Kathryn Harrison, Professor, University of British Columbia
Don Jackson, Professor, University of Toronto
Mark Jaccard, Professor, Simon Fraser University
Jeremy Kerr, Professor, University of Ottawa
Ken Lertzman, Professor, Simon Fraser University
Sarah Otto, Professor, University of British Columbia
Evgeny Pakhomov, Professor, University of British Columbia
Paul Paquet, Assistant Professor, University of Victoria
Wendy Palen, Assistant Professor, Simon Fraser University
David Schindler, Professor, University of Alberta
Douw Steyn, Professor, University of British Columbia
Ussif Rashid Sumaila, Professor, University of British Columbia
Boris Worm, Professor, Dalhousie University

Alan Lewis, Emeritus Professor, University of British Columbia, Earth & Ocean Sciences
Andrew Riseman, Associate Professor, University of British Columbia, LFS
Antje Ellermann, Professor, University of British Columbia
Antonia Mills, Professor, University of Northern British Columbia
Arne Mooers, Professor, Simon Fraser University
Barrie Webster, Professor (retired), University of Manitoba
Ben Seghers, Lecturer, Oxford University
Art Fredeen, Professor, University of Northern BC
Blake Poland, Associate Professor, University of Toronto
Bradley Walters, Professor of Geography & Environment, Mount Allison University
Brian Starzomski, Ian McTaggart-Cowan Professor, University of Victoria
Brendon Larson, Associate Professor, University of Waterloo
Bridget Bergquist, Assistant Professor, University of Toronto
Bruce Hunter, Professor, Seneca College
C.S. Holling, Emeritus Professor, University of Florida
Carol Pollock, Professor of Teaching, University of British Columbia, Dept. of Zoology
Charles J. Krebs, Emeritus Professor of Zoology, University of British Columbia
Chris Barrington-Leigh, Assistant Professor, McGill University
Chris Darimont, Assistant Professor, University of Victoria
Christina Roberts, Retired Instructor & Associate Prof., University of Toronto, Harvard University, University of Calgary
Dana Lepofsky, Professor, Simon Fraser University
Daniel Rainham, Associate Professor, Environmental Science, Dalhousie University
Danny Harvey, Professor, Dept. of Geography, University of Toronto
Darren Irwin, Associate Professor, University of British Columbia
David R. Boyd, Adjunct Professor, Simon Fraser University
Dawn Hemingway, Associate Professor, University of Northern BC
Dayna Nadine Scott, Associate Professor, Osgoode Hall Law School and the Faculty of Environmental Studies, York University
Deb Niemeier, Professor, University of California

Dennis Murray, Canada Research Chair, Trent University
Diana Allen, Professor, Simon Fraser University
Diane Srivastava, Professor, University of British Columbia
Dolph Schluter, Professor, University of British Columbia
Donald Spady, Adjunct Professor Pediatrics & Public Health, University of Alberta
Doug Prest, Professional Engineer, Professional Engineers Ontario
Edd Hammill, Lecturer, University of Technology, Sydney
Elena Lazos, Professor in Socio-environmental Studies, Universidad Nacional Autonoma de Mexico
Erica Frank, Professor and Canada Research Chair, University of British Columbia
Fred Bunnell, Emeritus Professor, University of British Columbia
George McKibbin, Adjunct Professor, University of Guelph
Gerardo Ceballos, Professor, Universidad Nacional Autonoma de Mexico, Instituto de Ecologia
Gordon Laxer, Professor Emeritus, University of Alberta
Gunnar Schade, Associate Professor, Texas A&M University
Hannah Wittman, Assoc Professor, University of British Columbia
Heike Lotze, Associate Professor, Dalhousie University
Isabelle Cote, Professor, Simon Fraser University
J Thomas Beatty, Professor, University of British Columbia
James D Johnson, Associate Professor, University of British Columbia
James Grant, Professor, Biology, Concordia University
James K. Rowe, Assistant Professor, University of Victoria
James S Clark, Nicholas Professor of Global Environmental Change, Duke University
John D. McPhail, Professor Emeritus, University of British Columbia
John R. Post, Professor, University of Calgary
John Reynolds, Professor, Simon Fraser University
John Robinson, Associate Provost, Sustainability, University of British Columbia, Institute for Resources, Environment and Sustainability, Dept. of Geography
John Smol, Professor and Canada Research Chair in Environmental Change, Queen's University
John Volpe, Associate Professor, University of Victoria
Jonathan Moore, Assistant Professor, Simon Fraser University
Jonathan Witt, Associate Professor, Dept. of Biology, University of Waterloo
Jonn Axsen, Assistant Professor, Simon Fraser University, School of Resource and Environmental Management
Jordi Honey-Roses, Assistant Professor, University of British Columbia
Jana Vamosi, Associate Professor, University of Calgary
Jane Watson, University-College Professor, Vancouver Island University
Jedediah Brodie, Assistant Professor, University of British Columbia
Jessica Dempsey, Assistant Professor, University of Victoria
Jessica Forrest, Assistant Professor, University of Ottawa
JR Welch, Associate Professor and Canada Research Chair (Tier 2), Simon Fraser University, Archaeology, School of Resource & Environmental Mgmt.
Judith Myers, Professor Emeritus, University of British Columbia
Julia K. Baum, Assistant Professor, University of Victoria
Katherine Acheson, Associate Professor, University of Waterloo
Katherine L. Parker, Professor, University of Northern British Columbia
Kathleen MacLeod, Professor, University of British Columbia
Ken Hall, Professor Emeritus, University of British Columbia
Kenneth Denman, Adjunct Professor, University of Victoria

Kitty Corbett, Professor, Simon Fraser University
Laura Wegener Parfrey, Assistant Professor, University of British Columbia
100Laurie Chan, Director and Canada Research Chair in Toxicology and Environmental Health, University of Ottawa, Center for Advanced Research in Environmental Genomics
Lawrence Dill, Professor Emeritus, Simon Fraser University
Lenore Fahrig, Professor, Carleton University
Locke Rowe, Professor, University of Toronto
Louis Bernatchez, Professor, Université Laval
Lyn Baldwin, Associate Professor, Thompson Rivers University
Lynne Quarmby, Professor, Simon Fraser University
Margo Tamez, Assistant Professor, University of British Columbia
Margot Parkes, Associate Professor, University of Northern British Columbia
Mark S. Boyce, Professor of Ecology & Alberta Conservation Association Chair in Fisheries & Wildlife, University of Alberta
Mark Poesch, Assistant Professor, University of Alberta
Martha Stark, Adjunct Professor, University of Northern British Columbia
Martin Bunch, Professor, York University
Martin Krkosek, Assistant Professor, University of Toronto
Maxwell A. Cameron, Professor, University of British Columbia
Meinhard Doelle, Professor, Dalhousie University
Michael Brauer, Professor, University of British Columbia
Michael E. Mann, Distinguished Professor and Director of Earth System Science Center, Penn State University
Michael Gillingham, Professor, University of Northern British Columbia
Michael Russello, Associate Professor, University of British Columbia
Milind Kandlikar, Professor, University of British Columbia, Institute for Resources Environment and Sustainability
Nancy Turner, Distinguished professor, University of Victoria
Natalie Ban, Assistant professor, University of Victoria
Nick Dulvy, Professor, Simon Fraser University
Paul Bentzen, Professor, Dalhousie University
Paul R. Ehrlich, Bing Professor of Population Studies, Biology Dept., Stanford University
Peter Arcese, Professor, FRBC Chair, University of British Columbia
Philip H. Austin, Associate Professor, University of British Columbia
Philippe Henry, Assistant professor, University of Northern British Columbia
Philippe Le Billon, Professor, University of British Columbia
Robert B. Gibson, Professor, Environment and Resource Studies, University of Waterloo
Robert DeWreede, Professor Emeritus, University of British Columbia
Robert Howarth, David R. Atkinson Professor of Ecology & Environmental Biology, Cornell University
Roberta Fulthorpe, Professor and Graduate Chair, University of Toronto Scarborough
Robin Naidoo, Adjunct Professor, IRES, University of British Columbia
Robyn Burnham, Associate Professor, University of Michigan
Ronald Gibson, Associate Clinical Professor, University of British Columbia
Scott A Mandia, Asst. Chair/Professor Physical Sciences, Suffolk County Community College
Scott Findlay, Associate Professor, University of Ottawa
Sean Cox, Associate Professor, Simon Fraser University
Stephen, Associate Professor, University of Northern British Columbia
Stephen Rader, Professor of Chemistry, University of Northern British Columbia

Steve Easterbrook, Professor of Computer Science, University of Toronto
Steven Vamosi, Associate Professor, University of Calgary
Stuart Murray, Canada Research Chair, Carleton University
T. E. Reimchen, Adjunct Professor, University of Victoria
Tara Ivanochko, Director, Environmental Science, University of British Columbia
Thomas D Sisk, Professor, Northern Arizona University
Thomas F. Pedersen, Executive Director, University of Victoria, Pacific Institute for Climate Solutions
Tim Storr, Assistant Professor, Simon Fraser University
Timothy McDaniels, Professor, University of British Columbia, Institute for Resources, Environment and Sustainability, School of Community and Regional Planning
Tony Pitcher, Professor of Fisheries, University of British Columbia
Trevor Hancock, Professor and Senior Scholar, University of Victoria, School of Public Health and Social Policy
Villy Christensen, Professor, University of British Columbia
William E. Neill, Professor Emeritus Zoology, University of British Columbia
William Ramey, Professor of Teaching, University of British Columbia
William Rees, Professor Emeritus, University of British Columbia
Zoe Meletis, Associate Professor, University of Northern British Columbia

Alan Sinclair, Fisheries Scientist, Fisheries and Oceans Canada Retired
Alec Blair, Ph.D. Candidate, McGill University
Alejandra Echeverri, M.Sc. Candidate, University of British Columbia, Institute for Resources, Environment and Sustainability
Alexandra Muhametsafina, Graduate Student, Wilfrid Laurier University
Alina Fisher, Research Manager, University of Victoria
Alisha Hackinen, M.Sc. Candidate in Soil Science, University of British Columbia
Allison Thompson, Master's Student, University of British Columbia
Alys Granados, Ph.D. Candidate, University of British Columbia
Alysson Vrielink, Electrical Engineer Ph.D. Student, Stanford University
Amanda Mathys, Ph.D. Student, University of British Columbia
Andrew Huang, M.Sc. Student, University of British Columbia
Anna Shoemaker, Ph.D., Uppsala University
Anne Dalziel, Ph.D., Universite Laval
Antony Porcino, Project Director (CAMEO/Research), University of British Columbia
Aylin Ulman, Researcher, M.Sc. Student Aylin Ulman, Researcher, M.Sc. Student, Sea Around Us, University of British Columbia
Bernardo Ranieri, Conservation Biologist. Ph.D. Student, University of British Columbia, Institute for Resources, Environment and Sustainability
Brett Favaro, Research Scientist, Memorial University
Brett Howard, PhD student, Simon Fraser University
Brianna Wright, M.Sc. Student, University of British Columbia
Brock Ramshaw, M.Sc., University of British Columbia
Bruna Amaral, M.Sc. Student, University of Queensland
Cameron Egan, Ph.D. Candidate, University of British Columbia
Cameron Webster, Research Assistant, University of British Columbia
Carling Gerlinsky, Research Assistant, University of British Columbia, Fisheries Centre
Cathryn Murray, Postdoctoral Fellow, University of British Columbia
Charlotte Whitney, Ph.D. Student, University of Victoria

Chico Birrell, M.Sc., University of Queensland
Chris Aikman, Associate Research Officer, Retired NRC scientist
Chris Joseph, Researcher, Sustainable Planning Research Group, Simon Fraser University
Christian Beaudrie, Ph.D. Candidate, University of British Columbia
Christopher Raymond, Senior Research Fellow, Barbara Hardy Institute, University of South Australia
Cintia Camila Silva Angelieri, Ph.D. Student, University of Sao Paulo, Brazil
Crispin Jordan, Ph.D., University of Edinburgh
Dalal Al-Abdulrazzak, Ph.D. Candidate, University of British Columbia
Danica Patton, Ph.D., Stanford University
David Ng, Director, AMBL, Michael Smith Laboratories, University of British Columbia
David Roberts, Postdoctoral Fellow, University of Alberta
David W Mayhood, President, Lead Consultant, FWR Freshwater Research Limited
Deb Chen, Ph.D. Candidate, University of British Columbia
Dominique Roche, Ph.D., Australian National University
Eduardo Martins, Ph.D., University of British Columbia
Elaine Hsiao, Ph.D. Student, Liu Scholar, University of British Columbia
Elizabeth Kleynhans, Ph.D. Candidate, University of British Columbia
Elizabeth Law, Ph.D. Student, University of Queensland
Elizabeth Pendray, Research Assistant, Simon Fraser University
Elysabeth Theberge, M.Sc. candidate, University of Ottawa
Emily Anderson, Ph.D. Candidate, University of British Columbia
Emily Brault, Graduate Student, University of California Santa Cruz
Emily Darling, Postdoctoral Fellow, University of North Carolina
Emily Rubidge, Visiting Scientist, University of Victoria
Eric Trembl, Research Fellow, University of Melbourne
Erin Crockett, M.Sc. Student, University of Oxford
Eva Stredulinsky, M.Sc. candidate, University of Victoria
Evan Morien, Computational Biologist, University of British Columbia
Gilles Wendling, President, Ph.D., P.Eng, GW Solutions
Gwylim Blackburn, Ph.D., University of British Columbia
Harald Yurk, Research Associate, Behavioral Ecologist in Bioacoustics, Vancouver Aquarium
Helen King, Ph.D., Cranfield University
Ian Colquhoun, Chair, M.Sc. Environment and Sustainability, Western University
J Shiller, M.Sc. student, University of British Columbia
Jamie Leathem, M.Sc., University of British Columbia
Jean-Sebastien Moore, Ph.D., Universite Laval
Jeffrey C. Ho, Ph.D. Student, Stanford University
Jeffrey Charters, M.Sc., Technician, University of Guelph
Jenn Burt, Ph.D. Student, Simon Fraser University
Jennifer N Harding, Ph.D. Candidate, Simon Fraser University
Jenny L. McCune, Postdoctoral Fellow, University of Guelph
Jessica Reeves, Ph.D., Faculty Member, Quest University, Canada
Jessica Schultz, M.Sc. Student, Simon Fraser University
Jessica Walsh, Ph.D. Student Conservation Ecology, University of Cambridge
Joan Kleypas, Scientist, National Center for Atmospheric Research
Jocelyn Nelson, M.Sc., University of British Columbia
Jody Reimer, M.Sc., University of Alberta
Joshua Silberg, MRM Candidate, Simon Fraser University

Julia Gustavsen, Ph.D. Student, Biological Oceanography, University of British Columbia
Karen Cooke, M.A., Research manager, University of British Columbia School of Nursing
Karen Golinski, Honourary Research Associate, University of British Columbia
Kate Kirby, Ph.D., University of Toronto
Katie Gale, M.Sc., Memorial University of Newfoundland
Kiely McFarlane, Graduate Student, University of British Columbia
Laura Benestan, Ph.D. Student, Universite Laval
Laura Fedoruk, M.Sc., University of British Columbia
Leah Honka, M.Sc. Student, Simon Fraser University
Linda Jennings, Assistant Curator, Beaty Biodiversity Museum
Lindsay Der, Ph.D. Candidate, Stanford University
Lisa McDonnell, Postdoctoral Fellow, University of British Columbia, Faculty of Science
Lisa Westerhoff, Ph.D. candidate, University of British Columbia
Louise Chavarie, Ph.D. Student, University of Alberta
Lucy Rodina, Ph.D. Student, University of British Columbia, Institute for Resources, Environment and Sustainability
Luke A. Rogers, M.Sc. Student, University of Toronto
Maayan Kreitzman, Ph.D. Student, University of British Columbia, Institute for Resources Environment and Sustainability
Marieke Beaulieu, M.Sc., Universite de Sherbrooke
Marina Winterbottom, M.Sc. Dalhousie University
Marisa Brook, Ph.D. Student, University of Toronto
Mary Hufford, Senior Research Scientist, Virginia Tech
Matt Dolf, Graduate Student, University of British Columbia
Matthew Ladd, Ph.D. Candidate, University of Ottawa
Matthew Mitchell, Ph.D., McGill University & University of Queensland
Matthew Taccogna, MA student, University of British Columbia
Matthew Wagstaff, Research Assistant, University of British Columbia
Maxwell Sykes, M.Sc. Student Resource Management, Simon Fraser University, Energy and Materials Research Group
Meaghan Labine, Ph.D., University of Manitoba
Megan Osmond-Jones, Research Assistant, Thompson Rivers University
Michelle Nelson, Ph.D. Candidate, Simon Fraser University
Nathan Toh, Research Assistant, University of British Columbia
Nicole Shumway, Research Ecologist, University of Queensland
Nigel Haggan, Ph.D., University of British Columbia
Olivia Festy, Ph.D., Queen Mary University
Paige Olmsted, Ph.D. Student, University of British Columbia
Pamela Zevit, Registered Professional. Biologist, Principal Adamah Consultants
Pascale Gibeau, Ph.D. Student and Biologist, Simon Fraser University
Paul Beckwith, Part-time Professor/Full-time Ph.D. Student, University of Ottawa
Rebecca G. Martone, Program Lead, Stanford University, Center for Ocean Solutions
Rebecca Seifert, Master's Student, Simon Fraser University
Rebecca Witter, Postdoctoral Fellow, University of British Columbia
Rebekah Jones, Coastal Resources Scientist, Louisiana State University
Regina Bestbier, M.Sc., University of British Columbia
Rene Beyers, Research Associate, University of British Columbia
Richard Schuster, Ph.D. Candidate, University of British Columbia

Sameer Shah, Graduate Student, University of British Columbia
 Sandra Binning, Postdoctoral Fellow, University of Neuchatel
 Sara Harris, Senior Instructor, University of British Columbia
 Sarah Klain, Ph.D. Student, University of British Columbia
 Sarah MacInnes, Postdoctoral Fellow, Stanford University
 Sean Godwin, M.Sc. Student, Simon Fraser University
 Sean Naman, Ph.D. Student, Dept. of Zoology, University of British Columbia
 Sebastian Pardo, Ph.D. Student, Simon Fraser University
 Sebastian Scheer, Ph.D., University of British Columbia
 Sebastien Renaut, Postdoctoral Fellow, University of British Columbia
 Silja Hund, Ph.D. Student, University of British Columbia
 Siobhan Chandler, Ph.D., University of Waterloo
 Sonja Wilson, M.Sc., P. Eng., University of British Columbia
 Stephanie Grand, Research Associate, University of British Columbia
 Susan Shirley, Research Associate, Oregon State University
 Susanne C. Moser, Director, Susanne Moser Research & Consulting
 Tara Martin, Ph.D., University of British Columbia
 Tara McBryan, M.Sc. Student, University of British Columbia
 Tara Moran, Research Associate, Stanford University
 Terry Hughes, Retired NRC Senior Research Officer
 Tim Vines, Ph.D., University of British Columbia
 Toby Spribille, Postdoctoral Fellow, University of Montana
 Victoria Francis, MA Student, Memorial University
 Wendy Watkins, Data Librarian, Carleton University
 William Atlas, M.Sc., Simon Fraser University
 William Harrower, Ph.D. Candidate, University of British Columbia, Dept. of Botany
 Zheng (Jackie) Yip, Ph.D. Student, University of British Columbia

ⁱ Consider, for example, the views of the panel on the consequences and significance of spills, Report of the Joint Review Panel for the Enbridge Northern Gateway Project, Volume 2, Section 7.2.5, beginning on page 128. On page 129 we read “The Panel finds that there is potential for some oil to sink if it interacts with sediment or suspended particulate matter, or over the long term, due to natural weathering processes.” The Panel has discounted the possibility that bitumen residue could submerge in the short term in the absence of particulates. It is impossible to know how they reached this conclusion, which turns out to be wrong.

ⁱⁱ *Dunsmuir v New Brunswick*, 2008 SCC 9: A court conducting a review for reasonableness inquires into the qualities that make a decision reasonable, referring both to the process of articulating the reasons and to outcomes. In judicial review, reasonableness is concerned mostly with the existence of justification, transparency and intelligibility within the decision-making process. But it is also concerned with whether the decision falls within a range of possible, acceptable outcomes which are defensible in respect of the facts and law. (at para 47)

ⁱⁱⁱ The Panel judged that some risks were significant, but with stated limitations. For example, for the Project’s contribution to cumulative effects on caribou and grizzly bears, the Panel judged the effects significant (“at the low end”; Northern Gateway JRP Report, Vol 2, p.10). For the “unlikely event of a large oil spill”, the Panel found that it “would not cause permanent, widespread damage” (Northern Gateway JRP Report, Vol 2, p.12). But see this letter’s points 2-5 regarding the Panel’s mischaracterizations of risks.

^{iv} Report of the Joint Review Panel for the Enbridge Northern Gateway Project Volume 1, page 17 and Panel Session Results and Decision issued January 19, 2011, pages 12-14: <https://docs.neb-one.gc.ca/ll->

[eng/llisapi.dll/fetch/2000/90464/90552/384192/620327/624909/662325/A22-3_-_Panel_Session_Results_and_Decision_A1X2L8.pdf?nodeid=662117&vernum=-2](http://llisapi.dll/fetch/2000/90464/90552/384192/620327/624909/662325/A22-3_-_Panel_Session_Results_and_Decision_A1X2L8.pdf?nodeid=662117&vernum=-2)

For the general exclusion of climate change, see <http://gatewaypanel.review-examen.gc.ca/clf-nsi/fq/rcmndtn-eng.html#s14>

^v Canada agreed to reduce its greenhouse gas emissions, in order to limit global warming to less than 2°C, to 17% below 2005 levels by the year 2020. Canada’s recent report to the UN, however, projected that our emissions will be 24% above our international target in 2020 and 78% percent of the growth in emissions by 2020 is projected to come from oil sands production. Canada’s Emissions Trends – 2013. Environment Canada Report October 2013. P24: “Specifically, emissions from oil sands mining are projected to more than double over the 2005 to 2020 time period. Emissions from in situ production are expected to increase from 11 Mt in 2005 to 55 Mt in 2020.” http://www.ec.gc.ca/ges-ghg/985F05FB-4744-4269-8C1A-D443F8A86814/1001-Canada's%20Emissions%20Trends%202013_e.pdf

^{vi} This may be the most serious and likely risk. For example, already two spills have occurred on the Athabasca River under ice. In the first of these, in 1982, a fire at Suncor in January released a moderate amount of oily substances; due to the inability to contain the spill, these substances travelled all the way to Lake Athabasca, closing the fishery for 2 years. In October 2013, the tailings pond breached at Obed mine. This spill continued to spread and could not even be assessed until the ice left more than six months later.

^{vii} “The Panel finds that a large spill, due to a malfunction or accident, from the pipeline facilities, terminal, or tankers, is not likely. Northern Gateway JRP Report, Vol 2, p 168

^{viii} Concerned Professional Engineers. 2014. Flawed analysis, irresponsible approval. White Paper #1. <http://concernedengineers.org/wp-content/uploads/2014/03/Whitepaper-1-Flawed-analysis-irresponsible-approval.pdf>

^{ix} JRP Report Vol 2, p 129: “The Panel finds that a large terrestrial, freshwater, or marine oil or condensate spill would cause significant adverse environmental effect and that the adverse effects would not be permanent or widespread.”

^x It is not necessary to conclude that a consequence would be permanent to establish that the consequence is so long-lived as to represent a significant adverse effect. The effects of the Exxon Valdez are apparent after more than 25 years: http://response.restoration.noaa.gov/sites/default/files/Exxon_Valdez_25YearsAfter_508_0.pdf

^{xi} Crosby, S., R. Fay, C. Groark, A. Kani, J.R. Smith, and T. Sullivan (March 2013) Transporting Alberta’s Oil Sands Products: Defining the issues and addressing the risks. <https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWFpbm9ub2Fhb2lsc2FuZHNwcm9qZWNO0fGd4Ojc5NmVIMDk3NjczNjIzNGU>. Accessed May 2, 2014

^{xii} Management plans are intended to prevent species listed as Special Concern from becoming endangered or threatened.

^{xiii} Gregr, E.J., J. Calambokidis, L. Convey, J.K.B. Ford, R.I. Perry, L. Spaven, M. Zacharias. 2006. Recovery Strategy for Blue, Fin, and Sei Whales (*Balaenoptera musculus*, *B. physalus*, and *B. borealis*) in Pacific Canadian Waters. In Species at Risk Act Recovery Strategy Series. Vancouver: Fisheries and Oceans Canada. vii + 53 pp.

^{xiv} Fisheries and Oceans Canada. 2014. Management Plan for the Sea Otter (*Enhydra lutris*) in Canada. Species at Risk Act Management Plan Series. Fisheries and Oceans Canada, Ottawa. iv + 50 pp.

^{xv} Fisheries and Oceans Canada. 2010. Management Plan for the Steller Sea Lion (*Eumetopias jubatus*) in Canada [Final]. Species at Risk Act Management Plan Series. Fisheries and Oceans Canada, Ottawa. vi + 69 pp.

^{xvi} DFO, 2013, Recovery Strategy for the North Pacific Humpback Whale (*Megaptera novaeangliae*) in Canada, http://www.sararegistry.gc.ca/virtual_sara/files/plans/rs_rb_pac_nord_hbw_1013_e.pdf

^{xvii} JRP Report Volume 1, page 11.