

## 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 findings<sup>i</sup>, and failed to satisfy the criteria of "justification, transparency and intelligibility" expected of administrative tribunals.<sup>ii</sup> 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 paragraphs<sup>iii</sup> 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.<sup>iv</sup> This exclusion of the project's contributions to increased atmospheric emissions undermines Canada's formal international commitments and federal policies on greenhouse emissions.<sup>v</sup> 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.<sup>vi</sup>

## **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.<sup>vii</sup> 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.<sup>viii</sup> 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<sup>ix</sup> or permanent,<sup>x</sup> 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.<sup>xi</sup> 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.<sup>xii</sup> 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<sup>xiii</sup>. Contamination has also been identified as a threat for other marine mammals: the management plans for both the sea otter<sup>xiv</sup> and the Steller sea lion<sup>xv</sup> 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.<sup>xvi</sup> 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”<sup>xvii</sup>—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

Abe Torchinsky, Medical Student, University of British Columbia  
Alan Lewis, Emeritus Professor, University of British Columbia, Earth & Ocean Sciences  
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 Vrieling, Electrical Engineer Ph.D. Student, Stanford University  
Amanda Mathys, Ph.D. Student, University of British Columbia  
Andrena Moore, Member, Canadian avalanche association  
Andrew Huang, M.Sc. Student, University of British Columbia  
Andrew Littlejohn, Mr, Harvard University  
Andrew Riseman, Associate Professor, University of British Columbia, LFS  
Anna Shoemaker, Ph.D., Uppsala University  
Anne Dalziel, Ph.D., Universite Laval  
Anne Paling, Environmental Scientist, Vaisala  
Anne Steino, Ph.D., Pharmaceutical Industry  
Antje Ellermann, Professor, University of British Columbia  
Antonia Mills, Professor, University of Northern British Columbia  
Antony Porcino, Project Director (CAMEO/Research), University of British Columbia  
Arne Mooers, Professor, Simon Fraser University  
Art Fredeen, Professor, University of Northern BC  
Aylin Ulman, Researcher, M.Sc. Student, Sea Around Us, University of British Columbia  
Barrie Webster, Professor (retired), University of Manitoba  
Beatrice Proudfoot, Biology Student  
Ben Seghers, Lecturer, Oxford University  
Bernardo Ranieri, Conservation Biologist. Ph.D. Student, University of British Columbia, Institute for Resources, Environment and Sustainability  
Bina Joy  
Blake Poland, Associate Professor, University of Toronto  
Bradley Walters, Professor of Geography & Environment, Mount Allison University  
Brenda Ross, CAMEO Program  
Brendon Larson, Associate Professor, University of Waterloo  
Brett Favaro, Research Scientist, Memorial University  
Brett Howard, Graduate Student, Simon Fraser University

Brian Starzomski, Ian McTaggart-Cowan Professor, University of Victoria  
Brianna Wright, Graduate Student, University of British Columbia  
Bridget Bergquist, Assistant Professor, University of Toronto  
Brock Ramshaw, M.Sc., University of British Columbia  
Bruce Hunter, Professor, Seneca College  
Bruna Amaral, M.Sc. Student, University of Queensland  
C.S. Holing, Emeritus Professor, University of Florida  
Cael Cook, Student  
Cameron Egan, Ph.D. Candidate, University of British Columbia  
Cameron Webster, Research Assistant, University of British Columbia  
Caragh Geiser, Scientist  
Carling Gerlinsky, Research Assistant, University of British Columbia, Fisheries Center  
Carol Pollock, Professor of Teaching, University of British Columbia, Dept. of Zoology  
Cathryn Murray, Postdoctoral Fellow, University of British Columbia  
Charles J. Krebs, Emeritus Professor of Zoology, 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 Barrington-Leigh, Assistant Professor, McGill University  
Chris Darimont, Assistant Professor, University of Victoria  
Chris Joseph, Researcher, Sustainable Planning Research Group, Simon Fraser University  
Christian Beaudrie, Ph.D. Candidate, University of British Columbia  
Christina Roberts, Retired Instructor & Associate Prof., University of Toronto, Harvard University, University of Calgary  
Christopher Raymond, Senior Research Fellow, Barbara Hardy Institute, University of South Australia  
Cintia Camila Silva Angelieri, Ph.D. Student, University of Sao Paulo, Brazil  
Colleen Milligan  
Constance Finney, Ph.D.  
Cory Pahl  
Courtney Halvorson, Student, Marine Science  
Crispin Jordan, Ph.D., University of Edinburgh  
Dalal Al-Abdulrazzak, Ph.D. Candidate, University of British Columbia  
Dallas Genereaux, Graduate Student, University of British Columbia  
Dana Lepofsky, Professor, Simon Fraser University  
Danica Patton, Ph.D., Stanford 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 Ng, Director, AMBL, Michael Smith Laboratories, University of British Columbia  
David R. Boyd, Adjunct Professor, Simon Fraser University  
David Roberts, Postdoctoral Fellow, University of Alberta  
David W Mayhood, President, Lead Consultant, FWR Freshwater Research Limited  
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 Chen, Ph.D. Candidate, University of British Columbia  
Deb Niemeier, Professor, University of California  
Debra Wertman, Insect ecologist, University of Victoria

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  
Dominique Roche, Ph.D., Australian National University  
Donald Spady, Adjunct Professor Pediatrics & Public Health, University of Alberta  
Doug Prest, Professional Engineer, Professional Engineers Ontario  
Edd Hammill, Lecturer, University of Technology, Sydney  
Edi de Pencier  
Eduardo Martins, Ph.D., University of British Columbia  
Elaine Hsiao, Ph.D. Student, Liu Scholar, University of British Columbia  
Elena Lazos, Professor in Socio-environmental Studies, Universidad Nacional Autonoma de Mexico  
Eliana Jacobs, Student, 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  
Ellika Crichton, Student, 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  
Emma Burgess, Student, University of Queensland  
Eric Keating, Mr  
Eric Trembl, Research Fellow, University of Melbourne  
Erica Frank, Professor and Canada Research Chair, University of British Columbia  
Erin Crockett, M.Sc. Student, University of Oxford  
Esther Speck  
Eva Stredulinsky, M.Sc. candidate, University of Victoria  
Evan Morien, Computational Biologist, University of British Columbia  
Florie Cai, Student, University of British Columbia  
Fred Bunnell, Emeritus Professor, University of British Columbia  
Gabrielle Grant  
Geoff Bernz  
George Ellenton  
George McKibbin, adjunct professor, University of Guelph  
Gerardo Ceballos, Professor, Universidad Nacional Autonoma de Mexico, Instituto de Ecologia  
Gilles Wendling, President, Ph.D, P.Eng, GW Solutions  
Gordon Laxer, Professor Emeritus, University of Alberta  
Gunnar Schade, Associate Professor, Texas A&M University  
Gwylim Blackburn, Biologist, University of British Columbia  
Hannah Wauchope  
Hannah Wittman, Assoc Prof, University of British Columbia  
Harald Yurk, Research Associate, Behavioral Ecologist in Bioacoustics, Vancouver Aquarium  
Heike Lotze, Associate Professor, Dalhousie University  
Helen King, Ph.D., Cranfield University  
Ian Colquhoun, Chair, M.Sc. Environment and Sustainability, Western University  
Ignacio Palomo, Ph.D., BC3

Isabelle Cote, Professor, Simon Fraser University  
J Shiller, Aquatic ecologist, University of British Columbia  
J Thomas Beatty, Professor, University of British Columbia  
James Bernier, Biologist  
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  
Jamie Leathem, M.Sc., University of British Columbia  
Jana Vamosi, Associate Professor, University of Calgary  
Jane Watson, University-College Professor, Vancouver Island University  
Jason Read, Instructor, University of British Columbia  
Jean-Sebastien Moore, Ph.D., Universite Laval  
Jedediah Brodie, Assistant Professor, University of British Columbia  
Jeff MacAdams, Graduate Student, University of Victoria  
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 Dempsey, Assistant Professor, University of Victoria  
Jessica Forrest, Assistant Professor, University of Ottawa  
Jessica Lu, Student, University of British Columbia  
Jessica Reeves, Faculty, 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 Gifford, SGI Green Party  
Jocelyn Nelson, M.Sc., University of British Columbia  
Jody Reimer, M.Sc., University of Alberta  
John D. McPhail, Professor Emeritus, University of British Columbia  
John Larda  
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  
Joshua Silberg, MRM Candidate, Simon Fraser University  
JR Welch, Associate Professor and Canada Research Chair (Tier 2), Simon Fraser University, Archaeology, School of Resource & Environmental Mgmt.  
Judith Myers, Professor Emerita, University of British Columbia  
Julia Atkins, Abbotsford Regional Hospital

Julia Gustavsen, Ph.D. Student, Biological Oceanography, University of British Columbia  
Julia K. Baum, Assistant Professor, University of Victoria  
Jutta Beher, Biologist, University of Queensland  
Karen Cooke, Research manager, University of British Columbia School of Nursing  
Karen Golinski, Honorary Research Associate, University of British Columbia  
Karena Shaw, Associate Professor and Director, University of Victoria, School of Environmental Studies  
Kate Kirby, Ph.D., University of Toronto  
Katherine Acheson, Associate Professor, University of Waterloo  
Katherine L. Parker, Professor, University of Northern British Columbia  
Katherine Proctor, Ethnoecologist  
Kathleen MacLeod, Professor, University of British Columbia  
Kathryn Adams, Student, King's University College  
Katie Gale, M.Sc., Memorial University of Newfoundland  
Ken Hall, Professor Emeritus, University of British Columbia  
Kenneth Denman, Adjunct Professor, University of Victoria  
Kiely McFarlane, Graduate Student, University of British Columbia  
Kimberley Langley, BLS, BA  
Kitty Corbett, Professor, Simon Fraser University  
Kyla Farmer, Alumni, Carleton University  
Kyle Lamont, Funktion Design  
Laura Benestan, Ph.D. Student, Universite Laval  
Laura Fedoruk, M.Sc., University of British Columbia  
Laura Wegener Parfrey, Assistant Professor, University of British Columbia  
Laurie 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  
Leah Honka, M.Sc. Student, Simon Fraser University  
Lee Cain, Director of Recreation, Anacostia Watershed Society  
Lena Molinari, Environmental Outreach Professional  
Lenore Fahrig, Professor, Carleton University  
Lia Chalifour, Biologist, University of Victoria  
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  
Locke Rowe, Professor, University of Toronto  
Lorri Lapp  
Louis Bernatchez, Professor, Universite Laval  
Louise Chavarie, Ph.D. Student, University of Alberta  
Lucas Fehr  
Lucy Rodina, Ph.D. Student, University of British Columbia, Institute for Resources, Environment and Sustainability  
Luke A. Rogers, M.Sc. Student, University of Toronto  
Lyn Baldwin, Associate Professor, Thompson Rivers University  
Lynne Quarmby, Professor, Simon Fraser University  
Maayan Kreitzman, Ph.D. Student, University of British Columbia, Institute for Resources Environment and Sustainability  
Margaret Steyn



Margo Tamez, Assistant Professor, University of British Columbia  
Margot Parkes, Associate Professor, University of Northern British Columbia  
Marianne Abraham  
Marieke Beaulieu, M.Sc., Universite de Sherbrooke  
Marina Winterbottom, Marine Biologist, Dalhousie University  
Marisa Brook, Ph.D. Student, University of Toronto  
Mark S. Boyce, Professor of Ecology & Alberta Conservation Association Chair in Fisheries & Wildlife, University of Alberta  
Martha Stark, Adjunct Professor, University of Northern British Columbia  
Martin Bunch, Professor, York University  
Martin Krkosek, Assistant Professor, 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 Lapointe, Timmins  
Matthew Mitchell, Ph.D., McGill University & University of Queensland  
Matthew Taccogna, Graduate Student, University of British Columbia  
Matthew Wagstaff, Research Assistant, University of British Columbia  
Maureen May  
Maureen Nadeau, Student, University of British Columbia  
Maxwell A. Cameron, Professor, 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  
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  
Michelle Moore  
Michelle Nelson, Ph.D. Candidate, Simon Fraser University  
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  
Natalie Hunter  
Nathan Toh, Research Assistant, University of British Columbia  
Nicholas Vagelatos, Ph.D.  
Nick Dulvy, Professor, Simon Fraser University  
Nicole Shumway, Research Ecologist, University of Queensland  
Nigel Haggan, Ph.D., University of British Columbia  
Nikos Christodoulou, Ph.D., Nuclear engineering specialist  
Noah Mitchell  
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  
Patricia Balvanera, Professor, Universidad Nacional Autonoma de Mexico  
Paul Beckwith, Part-time Professor/Full-time Ph.D. Student, University of Ottawa  
Paul Bentzen, Professor, Dalhousie University  
Paul R. Ehrlich, Bing Professor of Population Studies, Biology Dept., Stanford University  
Perrier, Ph.D., Universite Laval  
Peter Arcese, Professor, FRBC Chair, University of British Columbia  
Peter Rankin, Mr, Marine and coastal scientist  
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  
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  
RenÇù Dyrborg, Natural & Historical Facilitator  
Rene Beyers, Research Associate, University of British Columbia  
Renee Duclos  
Rhea Paniesin, Instructor of Sociology and Psychology, Mount Saint Mary College  
Richard Schuster, Ph.D. Candidate, University of British Columbia  
Robby Walker, Student  
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  
Robert Stupka, Engineer  
Roberta Fulthorpe, Professor and Graduate Chair, University of Toronto Scarborough  
Robyn Burnham, Associate Professor, University of Michigan  
Roland Alcock, Ph.D.  
Romney McPhie, Biologist, Dalhousie University  
Ronald Gibson, Associate Clinical Professor, University of British Columbia  
Sameer Shah, Graduate Student, University of British Columbia  
Sandra Binning, Postdoctoral Fellow, University of Neuchatel  
Sandra Johnson, Ph.D., QUT  
Sandra Solomon  
Sara Harris, Senior Instructor, University of British Columbia  
Sarah Klain, Ph.D. Student, University of British Columbia  
Sarah MacInnes, Postdoctoral Fellow, Stanford University  
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  
Sean Godwin, Graduate Student, Simon Fraser University  
Sean Naman, Graduate 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  
Sheryn Sauve, OLIP  
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  
Stephen, Associate Professor, University of Northern British Columbia  
Stephen Chessor  
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  
Susan Shirley, Research Associate, Oregon State University  
Susanne C. Moser, Director, Susanne Moser Research & Consulting  
T. E. Reimchen, Adjunct Professor, University of Victoria  
Tara Ivanochko, Director, Environmental Science, University of British Columbia  
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  
Terry Robinson  
Thea Kurdi, Instructor, Sheridan College  
Thomas D Sisk, Professor, Northern Arizona University  
Thomas De Pree, Student, Columbia University  
Thomas F. Pedersen, Executive Director, University of Victoria, Pacific Institute for Climate Solutions  
Thora O'Grady, Raincoast Science  
Tim Storr, Assistant Professor, Simon Fraser University  
Tim Vines, Ph.D., University of British Columbia  
Timothy McDaniels, Professor, University of British Columbia, Institute for Resources, Environment and Sustainability, School of Community and Regional Planning  
Toby Spribille, Postdoctoral Fellow, University of Montana  
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  
Victoria Francis, MA Student, Memorial University  
Villy Christensen, Professor, University of British Columbia  
Warren Walker  
Wendy Watkins, Data Librarian, Carleton University  
William Atlas, M.Sc., Simon Fraser University  
William Burt, Ph.D. Student  
William E. Neill, Professor Emeritus Zoology, University of British Columbia  
William Harrower, Ph.D. Candidate, University of British Columbia, Dept. of Botany  
William Ramey, Professor of Teaching, University of British Columbia  
William Rees, Professor Emeritus, University of British Columbia  
Zheng (Jackie) Yip, Ph.D. Student, University of British Columbia  
Zoe Meletis, Associate Professor, University of Northern British Columbia

---

<sup>i</sup> 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](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)  
For the general exclusion of climate change, see <http://gatewaypanel.review-examen.gc.ca/clf-nsi/fq/rcmmndtn-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](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](http://response.restoration.noaa.gov/sites/default/files/Exxon_Valdez_25YearsAfter_508_0.pdf)

---

<sup>xi</sup> 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=ZGVmYXVsdGRvbWFpbm9ub2Fhb2lsc2FuZHNwcm9qZWN0fGd4Ojc5NmVIMDk3NjczNjIzNGU>. Accessed May 2, 2014

<sup>xii</sup> Management plans are intended to prevent species listed as Special Concern from becoming endangered or threatened.

<sup>xiii</sup> 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.

<sup>xiv</sup> 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.

<sup>xv</sup> 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.

<sup>xvi</sup> 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](http://www.sararegistry.gc.ca/virtual_sara/files/plans/rs_rb_pac_nord_hbw_1013_e.pdf)

<sup>xvii</sup> JRP Report Volume 1, page 11.