

Climate change litigation

and the public right to a healthy atmosphere

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The author would like to acknowledge Andrew Weaver and Neil Swart of the University of Victoria and Andrew Black of the University of British Columbia for assistance in understanding the detection of GHG emissions and the limits of climate science; and Jessica Clogg, Executive Director and Senior Counsel of West Coast Environmental Law and Shi Ling Hsu, at that time of the University of British Columbia, for comments on the legal approach. Any errors in science or law are the author's own. Excerpts from an earlier draft of this paper formed the basis for the world's second ever Twitter Moot – a mock court appeal argued over Twitter by law students from 5 Canadian law schools on November 20th, 2012. Congratulations to the Twitter Moot winners – from the University of Alberta and thanks to all judges, participants and sponsors of the Moot.

This paper was previously published in issue 24 of the *Journal of Environmental Law and Practice* (2013) at p. 257.

Abstract

The damages caused by, and the costs of adapting to, climate change are running into the billions of dollars per year in Canada alone. It is remarkable that a human caused activity that causes such widespread harm to legal rights and economic interests should not be seen as a major source of liability. However, the perception has been that each individual source of emissions is too remote from the on-the-ground impacts of climate change to provide a basis for liability for even large-scale GHG emitters.

However, if a public right to a healthy global atmosphere is recognized, then the focus of a climate change litigant can be on the impacts of large-scale GHG emissions on the composition of the atmosphere, and therefore on that right, which simplifies the issues of causation considerably. Such a public right may be justified: as an extension of the public right to clean air; through public use of the atmosphere from time immemorial; and due to the inherent necessity and character of the global atmosphere.

Drawing on cases related to water pollution and the rights of riparian owners to an unaltered flow of water past their property, it becomes clear that it is possible to demonstrate that large-scale individual emitters are contributing significantly to the alteration of the global atmosphere and thus to the violation of that public right. Significance can be assessed generally, by reference to a “carbon budget,” or in terms of the emissions’ capacity to measurably alter the regional or global concentrations of greenhouse gases in the atmosphere.

Part I - Introduction

Rex Tillerson, the CEO of ExxonMobil, was recently quoted as acknowledging that fossil fuel emissions are warming the planet, but confidently predicted that society would adapt to the rising temperatures.

We have spent our entire existence adapting. We’ll adapt,” he said. “It’s an engineering problem and there will be an engineering solution.”¹

¹ Canadian Press, Exxon CEO: Fossil fuels will warm planet, but humans can adapt. June 28, 2012, printed in The Tyee: WEST COAST ENVIRONMENTAL LAW

Not too long ago the National Roundtable on the Environment and the Economy (NRTEE) tried to quantify the cost – to Canada – of climate change, predicting that the collective damages to the Canadian economy from climate change by 2020 will be in the neighbourhood of \$5 Billion **per year**, and that this figure could reasonably be expected to rise to between \$21 Billion and \$43 Billion annually by 2050,² if the world was **successful** at reducing greenhouse gas (GHG) emissions and limiting global temperature rises to 2°C (an internationally accepted goal). The NRTEE concluded that adapting to climate change could be cost effective to reduce these expenses, but the costs remain very, very significant.

If the 2°C goal is not met, then the NRTEE predicts that the losses due to climate change could rise to as much as 25% of Canada’s Gross Domestic Produce (GDP).³ According to the International Energy Agency, the world is currently on-track to experience 6°C (11°F) temperature rise by 2100.⁴

Even if Mr. Tillerson is correct that human beings can adapt to the changing climate (and this is far from certain), he apparently does not expect ExxonMobil, or other companies that are contributing on a large scale to climate change, to pay for the cost of that “engineering solution.” Rather, he expects society at large to bear the cost of adapting, while ExxonMobil reaps the financial rewards of selling the fossil fuels that are the primary cause of climate change. In other words, Mr. Tillerson seeks to externalize the cost of literally billions of dollars of damages (in Canada alone) that are partially attributable to ExxonMobil’s product.

<http://thetyee.ca/Blogs/TheHook/Environment/2012/06/28/exxon-fossil-fuel-adapt-climate/>, last accessed 2 August 2012.

² National Roundtable on the Environment and Economy. *Paying the Price*, (Ottawa: National Roundtable on the Environment and Economy, 2011), at p. 45.

³ *Ibid.*, p. 38.

⁴ J. Elpieren. World on track for nearly 11-degree temperature rise, energy expert says. *Washington Post*, November 28, 2011, available on-line at http://www.washingtonpost.com/national/health-science/world-on-track-for-nearly-11-degree-temperature-rise-energy-expert-says/2011/11/28/gIQAiolM6N_story.html, last accessed 21 March 2012.

The role of the common law in climate change

The assumption of many politicians, business leaders and lawyers appears to be that unless and until Parliament acts to hold large-scale GHG emitters responsible, ExxonMobil and its peers can emit GHG emissions without legal consequence.

But of course, the common law recognized liability for issues of air and water pollution well before environmental statutes became commonplace, and it should not be taken for granted that the common law will not impose liability for those who contribute significantly to climate change.

Indeed, it seems incredible that the common law would have nothing to say about human activities that are giving rise, and will continue to give rise, to some of the most significant violations of individual and collective legal rights that have ever occurred.⁵ As Lord Blackstone wrote in the 18th Century, in a statement which is central to the common law's understanding of its role: "It is a settled and invariable principle in the laws of England, that every right when withheld must have a remedy, and every injury it's [sic] proper redress."⁶ It is difficult to imagine that human caused actions causing billion dollars of losses every year by 2020 in Canada alone, and rising significantly after that, would not give rise to litigation.

Understandably, the courts are being asked to give a remedy to those who suffer injuries as a result of climate change:

Climate risk liability is a new but rapidly proliferating threat. The first few suits were filed in the U.S. between 2003 and 2005, asserting liability under the ancient common law theory of public nuisance. In 2010, more than 120 suits were filed under a variety of theories, more than one third of them originating outside the U.S.⁷

⁵ Just a few of the rights already being impacted include the loss of life and property associated with increased numbers of extreme weather events, flooding, drought; health and economic impacts arising from the spread of disease and pests into warming regions; the loss of indigenous culture due to shifting geoclimatic zones, including, notably, the impacts of loss of ice on Inuit culture. These impacts are only expected to increase.

⁶ 1 William Blackstone, Commentaries on the Laws of England 23.

⁷ R. Murray. "The U.S. Supreme Court Speaks on Liability for

Some commentators have emphasized the flexibility of tort law and that the concept of climate change torts are consistent with the underlying social purposes of litigation.⁸

On the other hand, it is difficult to overstate the legal challenges posed by climate change.

- Unlike most violations of rights, we are all, to some small extent, responsible for the rising global temperature and the resulting violations of rights. Each contribution may seem individually insignificant, but collectively our emissions of greenhouse gases are causing dramatic changes in the global atmosphere.
- Our economic system, and its continued growth, has been based on widely, and cheaply, available energy, most of which is obtained through the burning of fossil fuels. A great many people accept that the corresponding emissions are not only normal, but something which emitters have a right to do. As has been said: "It is difficult to get a man [or woman] to understand something, when his salary depends upon his not understanding it!"⁹
- While scientists can describe the general types of effects that climate change will cause, and the types of impacts that will be suffered, it is often difficult, and in some cases impossible, to identify whether a particular harm suffered would not have occurred "but for" changes to the global climate.

Shi-Ling Hsu has suggested that even the most favourable climate change case faces an uphill battle:

Climate change litigation, in its various forms, raises issues of standing, choice of law, preemption, redress, causation, separation of

Climate Change: But what did it say and will it have implications elsewhere?" In *Liability Issues Related to Climate Risk* (Geneva: Geneva Association, June 2011) at p. 2.

⁸ T. Traschler. "Litigating Climate Change in Canada" in *Emissions Trading and Climate Change Bulletin* (Toronto: MacMillan Binch Mendelsohn LLP, Dec. 2006), at p. 7-8, available on-line at http://mcmillan.ca/Files/LitigatingClimateChange-Cda_1207.pdf, last accessed April 15, 2011.

⁹ U. Sinclair. I, Candidate for Governor: And How I Got Licked (New York: Farrar and Rinehart, 1935), (repr. Los Angeles: University of California Press, 1994), p. 109.

powers, and international comity. [E]ven with a strong plaintiff—the Inuit people of the Arctic region—and vulnerable defendants— U.S. electricity generating companies—the prospects of a successful lawsuit for climate change related damages are mixed. Current law seems to suggest that liability is slightly less probable than not, but certainly not inconceivable. However, the tenuous bases for liability in this hypothetical lawsuit, and the rarity of the characteristics of this plaintiff and these defendants that make this lawsuit plausible, suggests that climate change litigation is unlikely to play a significant role in arresting global climate change.¹⁰

As Hsu suggests, there are a number of hurdles to climate change litigation.¹¹ However, by far the most formidable challenge facing a climate litigant is the question of causation – proving that a defendant’s emissions are a significant cause not just of climate change, but of the harm suffered by the plaintiff as a result of climate change. This article focuses on this challenge.

10 Hsu, S. A realistic evaluation of climate change litigation through the lens of a hypothetical lawsuit. 79(3) *University of Colorado Law Review* (Spring 2008) 701, pp. 701-702, from the abstract.

11 The most significant of these is likely standing, discussed below, note 13. Interestingly, legal concepts which have proved to be major barriers in current climate change litigation in the United States – the Doctrines of Justiciability and Pre-emption – do not at present appear to be a major problem for Canadian climate change litigants. In relation to the justiciability, also known as the political questions doctrine, the Canadian courts have generally been willing to examine cases raising political questions, provided that there is “sufficient legal component to warrant the intervention of the judicial branch”: *Reference re Canada Assistance Plan*, [1991] 2 S.C.R. 525 at p. 545 per Sopinka J. See also *Operation Dismantle v. the Queen*, [1985] 1 S.C.R. 441, per Wilson J. at p. 471-2, and per Dickson, concurring on this point, at p. 459; *Reference re Succession of Quebec*, [1998] 2 SCR 217 at p. 237-8 [para. 27-8]. Suggestions that the *Friends of Earth Canada v. Canada*, 2008 FC 1183, [2009] 3 F.C.R. 201, para. 31, affirmed on appeal 2009 FCA 297, leave to appeal to SCC denied 2010 CanLii 14720, represent an adoption of the political questions test are, in the author’s view, incorrect; that case dealt with a narrow statutory interpretation question of whether the statute intended preclude review by the courts or not. In relation to the Doctrine of Pre-emption, the equivalent legal concept in Canadian law is the Doctrine of Paramountcy. This doctrine has been given a relatively narrow interpretation by the Canadian courts (being relevant only where there is an unavoidable conflict between federal and provincial laws): *Multiple Access v. McCutcheon*, 138 D.L.R. (3d) 1 (S.C.C.). In addition, the Doctrine simply would not apply to Climate Change litigation in Canada – as there is currently no federal legislation that even arguably displaces any common law rules surrounding air pollution or atmospheric pollution.

In several earlier articles I have pointed out that modern environmental law can be informed by the existence of common law public rights in respect of the natural environment.¹² This article suggests that a similar public right in respect of the global atmosphere – which I frame as a right to a healthy atmosphere – could play a key role in addressing climate change and large-scale GHG emissions in Canadian law.

An action to defend a public right is generally brought by an Attorney General, his or her designate, or someone who has suffered special harm as a result of the violation¹³ – through the tort of public nuisance. Nuisance, including public nuisance, features prominently in discussions of climate change litigation: Hsu refers to it as “the only theory treated seriously” by current U.S. climate lawsuits.¹⁴ Several U.S. cases concerning climate change alleging that the impacts of climate change – the widespread property damage, the damage to indigenous culture, the loss of life – are a public nuisance caused by the defendants. The connection between the defendants’ emissions and the harm

12 Gage, A. Public rights and the lost principle of statutory interpretation. 15 J.E.L.P. 107 (April 2008) (“Statutory Interpretation Paper”); Gage, A. “Public Environmental Rights: A Paradigm Shift in Environmental Law” in *Environmental Law Conference Proceedings* (CLE BC, Vancouver: 2007); Gage, A. *Fish Lakes and Tailings Ponds*. 22 J.E.L.P. 1 (October 2010).

13 Traditionally only the Attorney General, or someone who has permission to bring an action in the Attorney General’s name, may bring an action in public nuisance, as a representative of the Crown in its *parens patriae* role in respect of the rights of the public: *Canfor*, below, note 19. However, the common law does allow a plaintiff who has suffered “special harm” from a public nuisance to sue for damages. Unfortunately the case-law is unsettled as to what constitutes “special harm,” with some cases holding that it is sufficient if the harm is different in degree (for example, *Rainey River Navigation Co. v. Wastrous Island Boom Co.* (1914), 26 O.W.R. 456 (C.A.); *Muirhead et al. v. Timber Bros. Sand and Gravel Ltd. Et al.* (1977) 3 C.C.L.T. 1 (Ont. H.C.)), and others holding that the harm must be different in “type” (for example, *Hickey v. Electric Reduction Co. of Canada Ltd.*, (1972) 21 D.L.R. (3d) 368 (N.S.S.C.)). Proving special harm may involve some of the same issues of causation discussed below at notes 96 to 103. The author has discussed the case law concerning standing in relation to public rights, and one context in which the rule might need to be modified, in Gage, A. *Three Arguments for First Nations Public Nuisance Standing*, 17(1) *IJL* 39 (2008), pp. 47 to 51. It is worth noting that in at least one Canadian jurisdiction (Ontario), the public nuisance standing rule has been relaxed through statute: *Environmental Bill of Rights*, S.O. 1993, c. 28, s. 103 (allowing an individual to bring a public nuisance claim for economic loss even if the loss is not different from the loss suffered by the public at large).

14 Hsu, above, note 10, pp. 733.

suffered by the plaintiffs seems tenuous and requires the plaintiff to prove several steps in a chain of causation.

By instead focussing first on the effect of the defendants' actions on a public right to a healthy global atmosphere, the issue of causation is simplified. The connection between a defendant's emissions and a change in the health of the atmosphere, even at a global level, is more direct than the connection between the defendant's emissions and some particular harm caused by rising temperatures; for example, the impact of a particular weather event. An analogy may be made to the common law rights of riparian owners to an unaltered flow of water past their property, and the case law concerning causation in those cases is extremely helpful.

Part II will provide a brief overview of public nuisance law and review the legal basis for the public right to a healthy global atmosphere.

Part III will then examine the challenges facing litigants in proving causation, in the context of climate change litigation, and the implications of the existence of a public right to a healthy atmosphere for establishing causation. This includes two separate types of causation – first that the defendants have impacted the public right to a healthy atmosphere, and secondly demonstrating that any specific damages suffered by the plaintiff are associated with global climate change and the violation of that right. It is argued, based on cases concerning water pollution and water flow, that a focus on the legal harm caused to the public right to a healthy atmosphere is sufficient to result in injunctive relief and nominal damages, even absent proof of the second type of causation (the link to particular damages suffered by the plaintiff).

Due to length, this article does not seek to address every aspect of a possible public nuisance claim, or even every possible implication of arguing that there is a public right to a healthy global atmosphere.¹⁵

¹⁵ Two possible additional benefits of the focus on a public right to a healthy atmosphere which should be examined further are: the impact of such a right on consideration of whether a defendant's actions are "reasonable"; and the implication of such a right for any defence of statutory authorization that a defendant might raise. In relation to the issue of "reasonableness", the

Nor does it seek to evaluate possible defences to such a claim. Those issues will clearly need to be developed more fully in litigation, or possibly in future papers. The focus of this article is on the implications of such a public right for proof of causation.

Part IV is the conclusion.

Part II – Public Nuisance and the right to a healthy atmosphere

Nuisance is a field of liability. It describes the type of harm that is suffered, rather than a kind of conduct that is forbidden. In general, a nuisance is an unreasonable interference with the use and enjoyment of land by its occupier or with the use and enjoyment of a public right to use and enjoy public rights of way. ... Underlying the present law of nuisance is the Latin maxim *sic utere tuo ut alienum non laedas* (use your own property so as not to injure that of your neighbours).¹⁶

There is a difference between private nuisance which is focussed on harm to private individuals, and public nuisance which is focussed on harm to the public at large.

There are, through accidents of history, two different kinds of nuisance – public nuisance and private nuisance. Public nuisance began

courts have sometimes declined to find public nuisance where a defendant has not actually acted negligently. However, according to Klar, *L. Tort Law* (4th Ed), (Thomson Carswell, 2008), at p. 720: "Where, as is the most common case, the defendant's activity was itself the public nuisance, the issue does not arise. Thus, if street prostitution, the deliberate discharge of pollutants into the air or water, the erection of a steel tower or the construction of wharf which obstructs water navigation, constitute public nuisances, negligence is not in issue." Similarly, Bilson, below, note 21, at p. 47, suggests that negligence standards were adopted in public nuisance cases which did not deal with the "pure obstruction" of a public right. It may also be that the courts will be less likely to find a direct impact on a public right to be reasonable even on the basis of a non-negligence standard. In relation to a possible defence of statutory authorization, it is a well established principle of statutory interpretation that legislation should be interpreted, absent a clear intent to the contrary, in favour of existing legal rights, including public rights: Statutory Interpretation Paper, above, note 12, pp. 121 -134. This principle may be useful in interpreting legislation which a defendant claims authorizes large-scale greenhouse gas emissions.

¹⁶ Allen M. Linden, *Canadian Tort Law* (8th ed.) (Markham, Ontario: Butterworths Canada Ltd., 2006), at p. 559.

its career as a crime, and still is punishable as such in Canada today. The gravamen of the offence was the blocking of public highways or encroachments on the royal domain. These public or common nuisances, as they were sometimes called, were expanded to include smoke from factories and pollution of rivers which inconvenienced the public generally. It was not until the 16th century that a private right to sue for public nuisance was first recognized. Private nuisance, on the other hand, developed separately from the old assize of nuisance in the 13th century, which was also a criminal writ, but one which permitted damages to be awarded to private individuals for invasions of their land because of things being done on nearby land. This remedy was supplanted eventually by the action on the case for nuisance, the parent of today's private nuisance action. [Emphasis added]¹⁷

The tort of public nuisance has sometimes been defined broadly, and using language that describes a general "public interest", rather than public rights; for example as: "any activity which unreasonably interferes with the public's interest in questions of health, safety, morality, comfort or convenience."¹⁸ However, traditionally public nuisance has also often been defined as a violation of the rights of the public. For example, the Supreme Court of Canada confirmed that the tort may be used to enforce public rights in respect of the environment in the landmark case of *Canadian Forest Products v. British Columbia*.

As put by McLachlin J. (as she then was) in *Stein v. Gonzales* 1984 CanLII 344 (BC S.C.), (1984), 14 D.L.R. (4th) 263 (B.C.S.C.), "[p]ublic rights, including claims for public nuisance, can only be asserted in a civil action by the Attorney-General as the Crown officer representing the public" (p. 265). McLachlin J. went on to say that it is the "Attorney-General who is entrusted and charged with the duty of enforcing public rights" (p. 268). ... The notion that there are public rights in the environment that reside in the Crown has deep

roots in the common law.¹⁹

Similarly, Professor Linden, explains that the public rights protected by public nuisance law are broad, stating:

The term "public rights" has been given a broad interpretation and encompasses a wide range of interests including the right to fish in public waters, the right to navigate public waters free from obstruction, the right to travel a highway unimpeded, as well as a sidewalk free of pigeon droppings. Less well-defined are interests such as interference with public health, public morals, public comfort or the breach of a public right created by statute. Public nuisance may be caused by such disparate things as an oil spill, a railway track on a city street endangering motorcyclists, a backed up sewer, or by noise from light aircraft. Thus, although the entire population need not be affected, a public nuisance must relate to an interest common to all.²⁰

Beth Bilson, in her book, *The Canadian Law of Nuisance*, argues convincingly that the discussion of public nuisance has become confused because there are 3 types of nuisances that have been grouped together under the heading of public nuisance. To paraphrase Bilson's categories, a public nuisance may involve:

- (a) Actions that directly obstruct or interfere with the public's exercise of a public right;
- (b) Actions which cause annoyance or risk to, or otherwise indirectly interfere with, members of the public exercising a public right; and
- (c) Actions which interfere with the private rights of a sufficiently large group of the public²¹

Climate change, as a phenomenon, may well fall into all three categories. Large scale GHG emissions might at the same time (a) violate a public right to a

¹⁷ Linden, *ibid*, p. 560.

¹⁸ *Ryan v. Victoria*, [1999] 1 S.C.R. 201, p. 236, para. 52, quoting Klar, Lewis N. *Tort Law*, 3rd ed. Toronto: Thomson Carswell, 2003, at p. 525.

¹⁹ *Canadian Forest Products Ltd. v. BC*, [2004] 2 S.C.R. 74, 2004 SCC 38, at p. 108, 111. ("Canfor")

²⁰ Linden, *above*, note 16, at p. 562.

²¹ B. Bilson. *The Canadian Law of Nuisance* (Toronto: Butterworths, 1991), pp. 46-48.

healthy atmosphere, (b) causing rising temperatures which negatively impact public rights to fish or other public rights, and (c) generally interfere with the use and enjoyment of private lands on a large and public scale.

The focus of this article is on the first of these categories; the direct violation of a public right. Nuisance actions related to this type of direct violation of public rights often see courts speaking of nuisance as “an injury to the ‘property of mankind’”²², or “an interference with, disturbance of or annoyance to a person in the exercise or enjoyment of ... a right belonging to him as a member of the public,”²³ or in terms of specific rights, such as “rights of public health and safety, the right to untainted air and clean water and the right to fish in public waters”.²⁴ Such nuisances stand in contrast to cases that fall into the third of the categories, which have tended to characterize public nuisances as merely a very large and widespread private nuisance.²⁵

As will be seen in Part III, a focus on the violation of the right, as opposed to the harm suffered as a result of global warming, helps address the challenges associated with proving causation. First, however, it is necessary to determine whether there is a distinct, legally recognizable right to a healthy atmosphere, capable of sustaining a public nuisance suit.

Public rights in respect of the environment

The term “public right” refers to legally recognized rights that are held not by the government, but by the public at large. G.V. La Forest explains:

By public rights is not meant rights owned by government, whether federal, provincial or municipal. These bodies may own land and water rights ... in the same way as private individuals, in which case they are, in a manner of speaking, public rights. But what is here called public rights are those vested in the public generally, rights that any member of the public may enjoy.²⁶

The Supreme Court of Canada in 2004 affirmed the existence of such rights in respect of the environment in the ground-breaking decision in *Canadian Forest Products v. BC*. The case concerned whether the province of British Columbia could recover damages for non-financial environmental harm suffered as a result of a forest fire negligently caused by Canadian Forest Products. The Supreme Court, after a discussion of the law of public nuisance, pointed out:

The notion that there are public rights in the environment that reside in the Crown has deep roots in the common law. ... Indeed, the notion of ‘public rights’ existed in Roman law...:

By the law of nature these things are common to mankind — the air, running water, the sea....

(T. C. Sandars, *The Institutes of Justinian* (1876), Book II, Title I, at p. 158)

A similar notion persisted in European legal systems. According to the French *Civil Code*, art. 538, there was common property in navigable rivers and streams, beaches, ports, and harbours. A similar set of ideas was put forward by H. de Bracton in his treatise on English law in the mid-13th century (*Bracton on the Laws and Customs of England* (1968), vol. 2, at pp. 39-40):

²² *Robinson v. Adams* (1924), [1925] 1 D.L.R. 359 per Middleton J. at p. 366 (Ont. C.A.), quoting *Attorney General v. Sheffield Gas Consumers Co.* (1853), 3 DeG. M. & G. 304, 43 E.R. 119, at p. 320.

²³ *Williams v Aristocratic Restaurants*, [1951] SCR 762 at p. 770, quoting Clerk and Lindsell on Torts, 10th Ed. p. 544.

²⁴ *Talbot v Northwest Territories* (Commissioner), 1997 Can-LII 4520 (NWTSC).

²⁵ For example, *Cairns v. Canada Refining & Smelting Co.* (1913) 1913 CarswellOnt 606, 25 O.W.R. 384, at para. 1 (Ont. S.C.): “A public nuisance is distinguished from a private nuisance only in this, that the latter is an injury to the property of an individual, while a public nuisance is an injury to the property of all persons who come within the sphere of its operation; though it may be injurious to a greater or lesser degree as to different people within the area affected.” See also *Attorney General v. P.Y.A. Quarries*, [1957] 1 All E.R. 894 (CA) at p. 902: “any nuisance is ‘public’ which materially affects the reasonable comfort and convenience of life of a class of Her Majesty’s subjects.”

²⁶ G. La Forest, *Water Law in Canada- The Atlantic Provinces* (Ottawa: Information Canada, 1973) at 178. Although written in the context of public rights arising from navigable waters, the definition is more generally applicable.

By natural law these are common to all: running water, air, the sea and the shores of the sea No one therefore is forbidden access to the seashore

All rivers and ports are public, so that the right to fish therein is common to all persons. The use of river banks, as of the river itself, is also public by the *jus gentium*

Since the time of de Bracton it has been the case that public rights and jurisdiction over these cannot be separated from the Crown. This notion of the Crown as holder of inalienable “public rights” in the environment and certain common resources was accompanied by the procedural right of the Attorney General to sue for their protection representing the Crown as *parens patriae*. This is an important jurisdiction that should not be attenuated by a narrow judicial construction.²⁷

On the basis of these rights, the Supreme Court affirmed that the Crown has the ability, at common law, to sue for environmental damages independent of any financial or other more conventional damages suffered. It seems obvious that while climate change does cause both property and financial damages, many of the impacts of climate change might be expressed in terms of this type of environmental damage.

A public right to a healthy atmosphere?

While the Supreme Court may have endorsed the idea of public environmental rights in general, and the recovery of damages arising from a violation of those rights, we must consider whether the right to a healthy atmosphere is one which is, or could be, recognized by the courts. There is little case law directly on point, as the ability of the atmosphere to appropriately absorb and reflect solar radiation has been taken for granted until comparatively recently.

However, there are three strong arguments to support the recognition that the public has rights in relation to the health of what has been described as the atmospheric commons.²⁸

²⁷ Canfor, above, note 19, at pp. 111-116.

²⁸ M. Woods, *Atmospheric Trust Litigation Around the World*

First, such a right might be viewed as an extension of the public rights in respect of air.

Second, the public may have acquired such a right from its reliance on the healthy functioning of the atmosphere from time immemorial.

Third, air, and the global atmosphere, is of such a nature that it belongs to everyone.

Each argument will be considered in turn.

Public right to air

As we have seen, the Institutes of Justinian and de Bracton, cited with approval in the Supreme Court of Canada decision in *Canfor*, both refer to the public’s rights in respect of air (in addition to running water and the sea). There are several other early authorities which adopt similar language:

Flowing water, as well as light and air, are, in one sense, *publici juris*. They are a boon from Providence to all, and differ only in their mode of enjoyment.²⁹

In the mid- to late- 1800s the English courts began to move away from the view that the public had a general right in respect of water, owing to “the greater demand for water for manufacturing purposes”³⁰ associated with the industrial revolution.

However, there is no similar shift in the case law related to air, and Tim Bonyhady, in *Laws of the*

in Ken Coghill, Charles Sampford, Tim Smith, (eds). *Fiduciary Duty and the Atmospheric Trust* (Ashgate Publishing, Australia: January 2012), at p. 172.

²⁹ *Wood v. Waud*, 3 Ex. 748 at 775, 154 E.R. 1047, at 1058, per C.J. Baron Pollock; See also *R. v. Meyers*, 3 U.C.C.P. 305 at p. 347; Black’s commentaries, 2 Bl. Comm. 14: “[T]here are some few things which, notwithstanding the general introduction and continuance of property, must still unavoidably remain in common, being such wherein nothing but an *usufructuary* property is capable of being had; and therefore they still belong to the first occupant during the time he holds possession of them, and no longer. Such (among others) are the elements of light, air, and water . . .”; *Liggins v. Inge* (1831), 7 Bing 682, per Tindal, C.J. at p. 692-693: “Water flowing in a stream, it is well settled by the law of England, is *publici juris*. By the Roman law, running water, light and air, were considered as some of those things which had the name of *res communes*, and which were defined “things, the property of which belong to no person, but the use to all.”

³⁰ *Ormerod v. Tormorden Mill Co.* (1883), 31 Weekly Reporter 759 at 760-61, per Cave J. (Q.B.D.).

Countryside, writes (in a very short chapter on air):

In Roman law air was classified as *res communes* which meant that it was regarded as subject to public use but was thought to be incapable of ownership. ... [I]t is probably still appropriate to regard air as *res communes* since it remains open to public use and, in its ordinary state, is not the subject of property rights. ...

When air is “at large” in the atmosphere, it is not the subject of property rights. Regardless of the rights which a landowner has to control the use of the space above his land, his interest in the actual air is no greater than that of any other member of the public. On account of its superabundance there are no restrictions on the quantity or circumstances in which anyone may take air. As stated by the Earl of Haslbury in *Colls v. Home and Colonial Stores Ltd.* (1904), air “is the common property of all, or, to speak more accurately, it is the common right of all to enjoy it, but it is the exclusive property of none.”³¹

In addition to the cases which reference a stand-alone public right in respect of air, there are a large number of cases in which public nuisance law has been used to claim injunctive relief or damages related to air pollution. Some commentators have relied on these cases in support of a public right in respect of “unpolluted” or “untainted” air.³²

There does not appear to actually be any authority rejecting the idea that the public has a right to “untainted air.”

For a court looking for direction on whether or not there is a public right in respect of the global atmosphere, it may not be such a leap to conclude

³¹ T. Bonyhady, p. 197, citing *Colls v. Home and Colonial Stores Ltd.* (1904), [1904] A.C. 179 (H.L.) at 182-3; see also Talbot, above, note 24, referring to the right to “untainted air.”

³² L. Rainaldi, (ed). *Remedies in Tort* (1987) Thomson Reuters, 1987, updated to 2011, at p. 17-42.8; M. Faieta. *Environmental Harm: Civil Actions and Compensation* (Toronto: Butterworths, 1996) at pp. 46-47; *Talbot v Northwest Territories (Commissioner)* (1997), 5 Admin. L.R. (3d) 102, 1997 CanLII 4520 (NWTSC): “Interference with the rights of public health and safety, the right to untainted air and clean water and the right to fish in public waters have all been held to constitute public nuisance.”

that a right in respect of one small piece of the atmosphere (a local airshed) should extend to a right in respect of the atmosphere as a whole, when it is the atmosphere as a whole which is at risk.

Use from time immemorial

Second, while public rights can be acquired in several different ways, one important way is the use of land or a resource from time immemorial. As the Judicial Committee of the Privy Council explained in relation to the public right to fish in Canada:

[T]he subjects of the Crown are entitled as of right not only to navigate but to fish in the high seas and tidal waters alike. The legal character of this right is not easy to define. It is probably a right enjoyed so far as the high seas are concerned by common practice from time immemorial, and it was probably in very early times extended by the subject without challenge to the foreshore and tidal waters which were continuous with the ocean if, indeed, it did not in fact first take rise in them. ... Finding its subjects exercising this right as from immemorial antiquity, the Crown as *parens patriae* no doubt regarded itself bound to protect the subject in exercising it, and the origin and extent of the right as legally cognizable are probably attributable to that protection, a protection which gradually came to be recognized as establishing a legal right enforceable in the courts.³³

This principle has also been used to find in favour of the existence of public rights in respect of rights of way over land³⁴ and water³⁵ that have been used from time immemorial:

³³ *British Columbia (Attorney General) v. Canada (Attorney General)* (1913), 15 D.L.R. 308 (JCPC) at p. 315; adopted in *R. v. Tweedie*, 15 Ex. C.R. 177 and *R. v. Leamy*, 15 Ex. C.R. 189.

³⁴ *Mann v. Brodie* (1885) 10 Ap.. Cas. 278 at p. 385 (H.L.), cited with approval in *R. v. Oxfordshire County Council and ors.*, UKHL 28; Lord c. St. Jean (1921), 61 S.C.R. 535.

³⁵ *R. v. Meyers*, above at note 29, pp. 345-46, summarizing the English rules for creation of public rights over navigable waters. The court subsequently found that the “time immemorial” test would inappropriately restrict public rights in relation to the recent settler public of Canada; [2000] 1 AC 335; *Reland v. the Environmental Agency*, [2003] EWCA Civ 1885; *Wills Trustees v Cairngorm Canoeing & Sailing School Ltd* 1976 SC (HL) 30;

The path or roadway with which we are concerned is unquestionably a public right of way and has been such, as far as anyone is aware, from “time immemorial.” Indeed, it is admitted by the appellants that [the owner of the land] does not own it. Thus members of the general public had a right to pass over it and did so.³⁶

The common law recognizes that customary rights,³⁷ franchises and liberties³⁸ and private rights³⁹ may all derive from use from time immemorial. In the context of customary rights, the courts have explained:

[W]here-ever there is an immemorial usage, the court must presume everything possible, which could give it a legal origin.⁴⁰

The principle is best known in Canadian law in the context of cases concerning Aboriginal Title and Rights, although obviously those rights now have a constitutional dimension with the enactment of s. 35 of the *Constitution Act, 1982*.⁴¹

³⁶ *Hynes v. Hynes* (1989), 79 Nfld. & P.E.I.R. 86 (C.A.); interestingly, the judge implies that long-standing use of a road in Canada may involve use from “time immemorial”, although he does not address what the relevant time period would be.

³⁷ Halsbury’s Laws of England (4th Ed), Vol 12(1): Custom and Usage, paras. 601-602.

³⁸ *Ibid.*, para. 603. Halsbury’s explains that “a custom is distinguished from a franchise in that a franchise lies in grant, whereas a custom runs contrary to the common law and therefore cannot be derived from a Crown grant. A custom, on the other hand, may not derogate from the royal prerogative in the way that a franchise necessarily does.”

³⁹ *Ibid.*, para. 604. At common law private rights may be acquired by prescription, which generally is for long usage, but may be up to and including time immemorial usage.

⁴⁰ *Cocksedge v. Fanshaw* (1779), 1 Dougl. 119 at p. 132, 99 E.R. 80 (K.B.); for an exhaustive discussion of the common law’s approach to customary usage in the Commonwealth, see R.D. Peskelvits, *Customary Law, the Crown and the Common Law (Thesis)*, (Unpublished, 2002), available-on-line at <https://circle.ubc.ca/handle/2429/12160>, last accessed 23 July 2012; see also Halsbury’s, *ibid.*, at para. 620: “It is not incumbent upon a person seeking to establish an alleged custom to show how it originated. Provided the custom is immemorial, certain, and reasonable in itself, and conforms to the requirements already mentioned, it unnecessary to trace it to its origin, or to show how it might have had a legal origin otherwise than by an Act of Parliament.”

⁴¹ Note, however, that while “time immemorial” has often been mentioned in aboriginal rights and title cases, the courts have generally not articulated the test for aboriginal rights and title in this way. Thus the BC Court of Appeal notes that rights need not be established from time immemorial, but rather from “a sufficient length of time to become integral to the aboriginal society”: *Delgamuukw v. British Columbia* (1993), 104 D.L.R. (4th) 470

The courts have occasionally noted the difficulty of applying a “time immemorial” test in relation to customary rights to Canada’s non-Aboriginal population, suggesting that the standard might be relaxed in Canada.⁴² However, if there is any situation in which Canada’s non-settler population can claim a right from time immemorial, it would be in relation to the atmosphere. The ability of the atmosphere to moderate the sun’s radiation is what makes life possible, and humans in every part of the world have relied upon the atmosphere to provide this service (even while taking it for granted) since time immemorial.

Opponents of the idea of a public right in respect of the atmosphere might argue that there is a difference between the active use of the seas for fishing and similar uses, and the passive (although considerable) benefit that the atmosphere provides to the public.⁴³ Further judicial direction may be required as to whether or not this is a legally relevant distinction, but it is worth noting that many public rights include elements of conservation. For example, the public right to fish has been used to protect, not only the physical act of taking fish, but often fish habitat as well.⁴⁴ In *Canfor* the Supreme Court of Canada affirmed the idea that the public’s rights in respect of the environment may be protective in nature.⁴⁵

(B.C.C.A.), at para. 41, per MacFarlane J. The Supreme Court of Canada, in *R. v. Van Der Peet*, [1996] 2 S.C.R. 507, while referring positively to cases that use time immemorial language (see p. 544, para. 37), itself describes the test as whether or not the Aboriginal rights claimed “have continuity with the practices, customs and traditions which existed prior to contact.” (p. 554).

⁴² *R. v. Meyers*, above, note 29, at pp. 346-48; *Frank Georges Island Investments v. Nova Scotia (Attorney General)*, 225 N.S.R. (2d) 264 (N.S.S.C.) at p. 277, para. 44. Although not using the phrase “time immemorial”, the Supreme Court of Canada, in *Powley v. R.*, 2003 SCC 43, held that Métis communities may claim Aboriginal Rights that were established prior to the time that European control of the territory became established (in that case 1850). Time immemorial in the English case law dates to 1189.

⁴³ Due to the nature of air, and the difficulty in owning it, discussed above, the courts have generally held that it is not possible to acquire a right to air through its longstanding use, although, interestingly, such a right can be acquired if you have built and used a window or other ventilation system: *Cable v. Bryant*, 1906 C.D. 259 at 264: “both the right to light and the right to air through a particular aperture in a house or building on the dominant tenement is capable of being acquired through prescription.” However, this case law does answer the question of whether the public’s general enjoyment and reliance upon a healthy global atmosphere is capable of forming the basis of a public right.

⁴⁴ For example, *R. v. The Ship “Sun Diamond” et al.*, [1984] 1 F.C. 3 (T.D.); *McRae v. British Norwegian Whaling Co. Ltd.*, [1927-31] Nfld. L.R. 274; *AG v. Harrison*, 12 Gr 466.

⁴⁵ *Canfor*, above, note 19, pp. 114-15.

With so many public and private rights depending upon the continued health of the global atmosphere, it seems overly technical to maintain that we have not made active use of our atmosphere.⁴⁶ While our reliance on the atmosphere is probably less obvious than the public's use of fish or navigable waters, it is no less real, and the consequences of being deprived of it are greater. Indeed, a wide range of rights, both public and private, up to and including the right to life itself, will be compromised by a failure to protect the planet's atmosphere.

Natural rights

There is some case law in support of the view that certain resources – air and water among them – are inherently incapable of being owned and are essential to the public, and therefore are the subject of public rights.

Thus the pivotal decision in *R. v. Meyers*, which found that public rights of navigation extend to all navigable waters in Canada, and not only (as is the case in the English law) to tidal waters, relied heavily on the public nature of water, in language which applies equally to air and the atmosphere:

I find water treated as a transient element, not capable of specific grant or proprietorship, except as a temporarily or partially monopolized in the exercise of the lawful right thereto. I find the original right to running water, in both a public and private point of view, *jure naturae* [natural right], and not accruing from occupation and as a consequence that such a right is *publici juris* [a

public right] wherever the stream is capable of general and common use as a highway by water. ... [I]t should depend on the fact of natural *capacity*, and not the fact of usage.⁴⁷

Similar arguments have been identified in U.S. jurisprudence as the basis for the public trust doctrine (the idea that certain lands and resources owned by the state must be managed for the benefit of the public):

The approach the greatest historical support holds that certain interests are so intrinsically important to every citizen that their free availability tends to mark the society as one of citizens rather than of serfs. It is thought that, to protect those rights, it is necessary to be especially wary lest any particular individual or group acquire the power to control them. ...

An allied principle holds that certain interests are so particularly the gifts of nature's bounty that they ought to be reserved for the whole of the populace. ... Finally, there is often a recognition, albeit one that has been irregularly perceived in legal doctrine, that certain uses have a peculiarly public nature that makes their adaptation to private use inappropriate.⁴⁸

A very closely related concept, is the idea that certain resources are so essential to the very fabric of a country, that one generation has no right to deprive future generations of their benefit. Thus, lawyers applying this type of reasoning to the atmosphere have argued that no legislator can allow the destruction of the global atmosphere because this “would compromise a future legislature's ability to exercise sovereignty on behalf of the people.”⁴⁹

46 Customary rights, in order to be legally recognized, must, in addition to existing from time immemorial, also demonstrate that “(2) it must be reasonable; (3) it must be certain in its terms and in respect both of the locality where it is alleged to obtain and of the persons whom it is alleged to affect; and (4) it must have continued as of right and without interruption since its immemorial origin.”: Halsbury, above, note 37, para. 606. It is not clear whether these criteria apply equally to the establishment of common law public rights, but if they do, then I would suggest that the public right to a healthy atmosphere qualifies. It is reasonable that something essential to so many other legal rights (and, ultimately, to life itself) should receive legal protection. While there are legal questions about the limits that the public right to a healthy atmosphere might place upon government and private actors, the global atmosphere is clearly defined (at any rate, as clearly defined as the high seas, which is where the public rights to fish and navigate first became established). And the atmosphere has been relied upon continuously from time immemorial.

47 *R. v. Meyers*, above, note 29, at pp. 347-48.

48 J. Sax. *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*. 68 Michigan L.R. 473, pp. 484-85.

49 Wood, above, note 28, at her footnote 47, referencing Grant. *Underpinnings of the Public Trust Doctrine: Lessons from Illinois Central Railroad*, 48 Ariz. St. L.J. 849 (2001) at p. 851. Wood ties this concept to a well recognized idea in public trust theory that the trust obligations are “an inherent attribute of sovereignty.”: p. 169, quoting the Hawaii Supreme Court in *In re Water Use Permit Applications*, Waihole Ditch Combined Contested Case Hearing, 9 P.3d 409, 432-22 (Haw. 2000). Canadian and English authorities recognize the concept that Parliament cannot bind future Parliaments: P. Hogg, *Constitutional Law of Canada*. (5th Ed Supplemented) (Toronto: Carswell, 2007),

The idea that the global atmosphere might be so essential to Canadians that it requires legal protection is very consistent with the reality of climate change, and the dramatic changes that it will inflict upon the world and the country, as well as with basic principles of inter-generational equity. In Canada, this legal protection is necessary not just to the exercise of sovereignty by “a future legislature,” but also to the ongoing sovereignty of other levels of government.⁵⁰

The idea that certain resources may be of such importance that a government has a responsibility to maintain them has some precedent in Canadian law, in the limits that the courts have placed on First Nation governments in the exercise of Aboriginal Title. In *Delgamuukw v. British Columbia*, the Supreme Court of Canada explained that since lands covered by Aboriginal Title were integral to the culture of that First Nation, current First Nations governments lacked the ability to undertake actions that would destroy the connection of that culture with the land in question.

The relevance of the continuity of the relationship of an aboriginal community with its land here is that it applies not only to the past, but to the future as well. That relationship should not be prevented from continuing into the future. As a result, uses of the lands that would threaten that future relationship are, by their very nature, excluded from the content of aboriginal title.⁵¹

The Court’s logic about the importance of these lands to First Nations is based, of course, on the nature of Aboriginal Rights, and it would require a leap to

p. 12-8 to 12-9; *Ellen Street Estates, Ltd. v. Minister of Health*, [1934] 1 K.B. 590 (C.A.), at 597. However, this principle has not to date been applied in Canadian law to prevent a present Parliament from taking action, but only to allow a subsequent Parliament to repeal provisions that purported to bind it.

50 There is nothing in the *Constitution Act, 1867* that sets out which level of government regulates the global atmosphere, and provinces and the federal government are jointly responsible for addressing, and affected by, climate change: See Hsu, S.L. and R. Elliot. *Regulating Greenhouse Gas Emissions in Canada: Constitutional and Policy Dimensions*, 54 McGill L.J. 463 (2009), pp. 479-80. Professor Mary Wood would refer to the two levels of government as “co-trustees” of the global atmosphere: Woods, above, note 28.

51 *Delgamuukw v. British Columbia*, [1997] 3 S.C.R. 1010, p. 1089.

extend them to a limit on the exercise of sovereignty generally. However, the reality is that the global atmosphere is similarly crucial to all cultures.

A focus on the central importance of the atmosphere to all living things puts the focus of the argument where it should be – on the dramatic impacts that GHG emissions are causing. The reality is that without legal protection for the global atmosphere, the exercise of a great many other rights, including *Canfor* style public environmental rights, and including other public, private, Aboriginal and other rights, are dependent upon the continued health of the atmosphere.

The tort of public nuisance has been defined in several ways, and deals with a range of public wrongs. However, at its core – the oldest and best established meaning of public nuisance – is an action to enforce the rights of the public. While climate change causes a host of effects that might broadly be termed a public nuisance, this paper asserts that a distinct public right in respect of the global atmosphere could, and should, be recognized at common law. In Part III the implications of this approach for the issue of causation will be considered.

Part III – Causation and Climate Change

There is no doubt that causation is one of the most significant barriers facing a climate change plaintiff under Canadian law.

Even if a state of affairs amounts to a public nuisance (a public right has been violated), a court will not hold a defendant responsible for that nuisance unless and until the plaintiff demonstrates that the defendant has in some way caused, or meaningfully contributed to, the nuisance. Since climate change is caused by global emissions, with no one source of emissions by itself sufficient to cause the damages that are being experienced, this is a formidable hurdle.

Traditionally, to establish a cause of action in nuisance, a plaintiff would be required to prove on a balance of probabilities that “but for” the defendants

activity, he or she would not have been harmed.⁵² Legal causation requires that the plaintiff prove both general and specific causation: the plaintiff must be able to demonstrate that the defendant's activity is capable of causing the type of harm complained of and that their activity caused the specific harm to that plaintiff.

In a climate change context, there are actually at least two types of causation that may need to be proven:

A. First, there is the question of whether the defendant's actions can be said to be a significant cause of climate change. Although all GHG emissions do contribute to climate change, and this causal connection could be proven in court, the nature of the problem means that any individual contribution, even if very large, can be characterized as insignificant compared to the global emissions that are causing the problem; ("Causal connection to climate change")

B. Second, there is the question of whether it can be established that a particular damage or harm complained of can be causally linked to climate change. For example, while it is well established that climate change causes more extreme weather events, it is difficult if not impossible to establish that any given weather event (which may have caused specific harm) is linked to rising global temperatures. ("Causal connection to specific harm")

Both must be proved on the balance of probabilities.

A focus on the public right to a healthy atmosphere shifts the importance of these two causal connections and change how they might be proved. Under a conventional view, the specific harm suffered is the public nuisance, so both elements must be fully proved.

Under a public rights framework, it is the damage to the health of the global atmosphere (and therefore the impact on the right), rather than the specific harm that is caused by climate change, that is the public nuisance. This shift simplifies the first

causation issue. Moreover, in theory, an action might be brought without proof of the second, although in practice there are many reasons it may be necessary to prove a connection to specific harm.⁵³

Each type of causal connection will be considered in turn.

A. Causal connection to climate change

The first of these problems is a significant barrier that must be overcome in any climate change public nuisance lawsuit. A requirement to prove that, "but-for" a particular large scale emitter, climate change would not have occurred might seem an insurmountable bar to the plaintiff. The global collective GHG emissions are so wide-spread that if the largest emitters on earth were to cease emitting it would make little direct difference on rising global temperatures or to the victims of climate change. Although Canada is one of the largest global emitters per capita when compared to other countries, we have a small population, and a total cessation of Canadian GHG gases would make only a modest reduction in global GHG emissions, and would only slow rising global temperatures.

However, by focussing on harm not to the private rights of the plaintiff, or even to public assets, but harm to the public's right to a healthy atmosphere, the question becomes: Are the emissions of the defendant reducing the health of the global atmosphere? Instead of focussing on whether the defendant's emissions caused a rise in global temperatures which in turn caused a particular weather event (or other climate-related event) which in turn caused harm to the defendant, the plaintiff would seek to prove that the defendant impacted the **natural state of the atmosphere**. A defendant's impact on the state of the atmosphere is a much more direct causal relationship.

⁵³ Rules related to standing might require private litigants to establish that they had suffered "special harm," which would presumably require proof of specific harm (see, above, note 13). And, without proof of specific quantifiable losses, any damages awarded might only be nominal, although injunctive relief and Canfor-style environmental damages (above, note 19) might still be possible. In addition, a link to specific damages might be advisable in terms of convincing a court that the harm caused by climate change is real.

⁵² *Snell v. Farrell*, [1990] 2 S.C.R. 311 at p. 319-320.

The discussion below will examine:

- i. support for this focus on harm to the right, rather than damages, found in the case law concerning the common law rights of riparian owners;
- ii. different approaches to applying this focus to assess the significance of the contributions of individual large-scale emitters to the violation of the public right.

i. Causation and riparian rights

Water pollution, like atmospheric pollution, can come from many diffuse sources, with no one polluter significantly harming the economic interests of downstream water users, but with the watercourse nonetheless being harmfully polluted. Thus riparian owners, going to court to protect their rights to use water, have been faced with claims by polluting defendants that their contribution to the pollution, by itself, were not causing a financial loss to the plaintiff – a problem which is clearly analogous to the problems of causation facing a climate change plaintiff. The courts have solidly supported riparian rights holders:

As against a riparian owner, it is not in my opinion necessary, in the case of a natural stream polluted under a claim of right by another riparian owner further up the stream, to shew actual damage. In cases of pollution it is oftentimes difficult to shew it -- in fact, it may be impossible to do so. It exists all the same -- it may be to an extent detrimental to the health of those who have a right to use the water. If it were otherwise what would be the effect? Take the present case. The defendant says, 'I have had this water tested by experts and they report that it is not polluted.' Suppose that within the next ten years ten other riparian proprietors erect houses with water closets discharging into the lake but in no greater volume than is discharged from the defendant's hotel now. An application of the same test then shews a positive pollution. Against whom are the plaintiffs to proceed? Each has the same answer as that now set up by this defendant, and if one can succeed why not all? And in this way the plaintiffs would be without

remedy, and the water supply secured to them for public uses would be injurious to health and unfit for use.⁵⁴

How did the courts justify this apparent departure from the “but for” causation?

In actual fact, there is no departure *per se*. The courts dealt with the problem by reframing the rights of the riparian owners. Rather than a right to the reasonable use and enjoyment of the water, or of the land abutting the water, the riparian owner was held to have a right to the continued flow of water, in its naturally occurring state, past his or her property. Any interference with that right, even if the water was not, or even could not be, used by the plaintiff, was itself actionable.

If a riparian proprietor's rights have been violated, it is not necessary for him to prove damage to maintain his action.

In *Crossley and Sons, Limited v. Lightowler* (1867), L.R. 2, Ch. 478 at 483, Lord Chelmsford L.C. said: “From what has been already said, it may be collected that, in my opinion, if the Plaintiffs had proved the pollution of the Hebble opposite to their mills by the Defendants, they would have had good ground for an injunction, although they were not actually using the water for their business.”

In *Pennington v. Brinsop Hall Coal Company* (1877), 5 Ch. D. 769 at 772, Fry J. emphasized the clear distinction to be drawn in these cases between the invasion of a right and damage: “I may observe in passing that the case of a stream affords a very clear illustration of the difference between injury and damage; for the pollution of a clear stream is to a riparian proprietor below both injury and damage, whilst the pollution of a stream already made foul and useless by other pollutions is an injury without damage, which would, however, at once become both injury and damage on the cessation of the other pollutions.”⁵⁵

⁵⁴ *St. Johns (City) v. Barker* (1906), 3 N.B. Eq. 358 at p. 362-3, 2 E.L.R. 20 (N.B.S.C.)

⁵⁵ *McKie v. K.V.P. Co. Ltd.*, [1948] 3 D.L.R. 201 at pp. 211 to 213; affirmed with variation [1948] O.W.N. 812, [1949] 1 D.L.R.

The idea that a riparian owner is entitled to an unchanged quality of water has been quite flexible. For example, the deposit of unpolluted, but “hard” water into a body of “soft” water, has been found to be actionable, not because there was anything wrong with the “hard” water, but because it represented a departure from the water’s “natural condition.”⁵⁶ It has been said that a change in water temperature in a stream may also violate the right of a riparian owner.⁵⁷

Similarly, in relation to the application of that principle to a multiple polluters scenario, in which the water was already too polluted to be used by the plaintiff:

[T]he wrongful act of the defendants made no practical difference, that is, that the pollution by the defendants did not make it less applicable to useful purposes than such water was before. *We think, notwithstanding, that the plaintiffs have received damage in point of law.* They had a right to the natural stream flowing through the land, in its natural state, as an incident to the right to the land on which the watercourse flowed, as will be hereafter more fully stated; and that right continues, except so far as it may have been derogated from by user or by grant to the neighboring land owners. *This is a case, therefore, of an injury to a right.*⁵⁸ [Emphasis added]

39; affirmed with variations [1949] S.C.R. 698, [1949] 4 D.L.R. 497; see also *Embrey v. Owen*, 155 E.R. 579, 6 Ex. 353 at 368: “Actual perceptible damage is not indispensable as the foundation of an action. It is sufficient to show the violation of a right, in which case the law will presume damage,” and *Gauthier v. Naneff*, 14 D.L.R. (3d) 513 (Ont H.C.) at 517.

56 *Young v. Bankier*, [1893] A.C. 691 (H.L.), cited with approval in *Crowther v. Cobourg*, 1 D.L.R. 40, at p. 42: “The added water was pure but hard in quality and made the water of the stream hard. This shews that nuisance or no nuisance is not the question, but the right to the water in its natural condition.”

57 *Mathews v. Hamilton (City)* (1903), 6 O.L.R. 198. It should be noted that the court in *Mathews* seems to have been willing to hold the defendant liable in damages because the City had been expressly warned of the possible impact of the change in water temperature (a factor which would seem irrelevant in riparian law, but which the court seemed to think important in this case). However, since most large-scale emitters of GHG emissions have been expressly warned of the possible consequences of their emissions, this distinction, if valid in law, might not work against a climate litigant.

58 *Wood v. Waud*, above, note 29, 772; see also *Embrey v. Owen* (1851), above, note 55: “Actual perceptible damage is not indispensable as the foundation of an action; it is sufficient to shew the violation of a right, in which case the law will presume damage.”

Absent being able to demonstrate specific damages arising from the pollution, the court would, of course, award only nominal damages for such pollution, but both declarative and injunctive relief was available in such cases. And the courts are quite willing to grant such relief even in the absence of damages and despite claims of the economic value of the pollution.

It is trite law that economic necessities of the defendants are irrelevant in a case of this character. It is unfortunate that in the circumstances of this case the rights of a riparian land proprietor come into conflict with the laudable objects of a charitable pursuit formulated and prosecuted with sincerity and dedication by the defendants Naneff and company on behalf of their club and endorsed and supported by the other defendants. Nonetheless, the most honourable of intentions alone at no time can justify the expropriation of common law rights of riparian owners.

I am satisfied on a review of all the evidence that there is a reasonable apprehension of the impairment to some degree of the rights of the riparian proprietor ... to the enjoyment of the natural condition of her water supply as it presently is vis-à-vis purity, wholesomeness and potability should this application not be granted. It must be emphasized that the significance of such impairment is not a factor in view of her rights as a riparian proprietor.⁵⁹

In essence the riparian rights cases do not ask whether, “but for” the actions of the defendant would the plaintiff have suffered the loss, but instead focus on whether “but for” the actions of the defendant, would the stream flow in its natural state. The approach is similar to cases related to strict liability for torts of assault and trespass, which hold that any interference with the right is itself actionable, without any evidence of financial loss.⁶⁰

The Canadian courts have on occasion adopted a similar approach in relation to multiple polluters in the context of nuisance cases involving air pollution, although those cases have focused on the damages to

59 *Gauthier v. Naneff*, above, note 55, p. 519.

60 *Linden*, above, note 16, pp. 44, 46, 568-9.

a particular property, and not on the change in the quality of air reaching an affected property.

Some evidence was adduced to show that others are polluting the air over the plaintiff's property. While there is no evidence on which I could find that the plaintiff suffered material injury from pollution by others than the defendant, even if others are in some degree polluting the air, that is no defence if the defendant contributes to the pollution so that the plaintiff is materially injured. It is no defence even if the act of the defendant would not amount to a nuisance were it not for others acting independently of it doing the same thing at the same time. [Emphasis added]⁶¹

Other courts have commented on the legal similarities between air and water, implying that some elements of the riparian rights approach may be more generally applicable. For example, McRuer C.J.H.C. in *McKie v. K.V.P. Co. Ltd.* begins his discussion of the rights of riparian owners by quoting Blackstone on the limits of ownership of air and water:

... there are some things which, notwithstanding the general introduction and continuance of property, must still unavoidably remain in common; being such wherein nothing but an *usufructuary* property is capable of being had; and therefore they still belong to the first occupant, during the time he holds possession of them, and no longer. Such (among others) are the elements of light, air, and water; which a man may occupy by means of his windows, his gardens, his mills, and other convenience.⁶²

Similarly, in the old English case dealing with multiple polluters of water, *Crossley & Sons, Limited v. Lightowler*, Lord Chelmsford, L.C. noted that the reason for the rule was that “where there are many existing nuisances, either to the air, or to water, it may be very difficult to trace to its source the injury occasioned by any one of them...”⁶³

61 *Walker v. McKinnon Industries Ltd.*, [1949] 4 D.L.R. 739 (Ont H.C.), at p. 767, varied [1950] O.W.N. 309, [1950] 3 D.L.R. 159 (CA), affirmed [1951] W.N. 401, [1951] 3 D.L.R. 577 (P.C.).
62 Blackstone's Commentaries, Book II, p. 14, quoted with approval in *McKie*, above, note 55, at p. 210.

63 L.R. 2 Ch. 478, at p. 481, quoted with approval in *St. Johns*,

The U.S. courts have also adopted this approach, and expanded it to cases of public nuisance involving pollution of water, and climate change litigators have relied upon the theory of causation advanced in these cases in several prominent climate change cases. In a 19th century case dealing with the pollution of a river, the Maryland Court of Appeal held:

It is no answer to a complaint of public nuisance that a great many others are committing similar acts of nuisance upon the stream. Each and every one is liable to a separate action, and to be restrained... Each standing alone might amount to little or nothing. But it is when all are united together, and contribute to a common result, that they become important factors, in producing the mischief complained of. And it may only be alter from year to year, the number of contributors to the injury has greatly increased, that sufficient disturbance of the appellant's rights has been caused to justify a complaint. One drop of poison in a person's cup may have no injurious effect. But when a dozen, or twenty, or fifty, each put in a drop, fatal results may follow. It would not do to say that neither was to be held responsible.⁶⁴

More recently, the federal district court in *City of Milwaukee v Illinois*, a case dealing with the release of sewage from multiple sources that led to the eutrophication of Lake Michigan, wrote:

If one point source can defend successfully on the ground that its discharge alone is not causing the problem and that, without its discharge, the problem would still exist, then that defense would have to be equally available to all point sources. What is a good defense for Milwaukee

above, note 54, at p. 362, and *McKie*, above, note 55, p. 213.

64 *Woodyear v. Schaefer* 57 Md. 1 (Md. 1881) at 9-10 cited in Matthew F. Pawa, “Global Warming: The Ultimate Public Nuisance” in *Creative Common Law Strategies for Protecting the Environment* (Environmental Law Institute 2007) (Cliff Rechtschaffen & Denise Antolini, eds.) [Pawa], p. 138; Pawa also directs his reader's attention to this useful example in the case, at p. 12: “Suppose one person leaves a wheelbarrow standing on a way, that may cause no appreciable inconvenience, but if a hundred do so, that may cause a serious inconvenience, which a person entitled to the use of the way, has a right to prevent; and it is no defense to any person among the hundred, to say that what he does, causes of itself no damage to the defendant.” This reasoning, although arising in the context of a water case, would seem to extend the principle to interference with the public right in respect of highways.

would have to be a good defense for any other point discharger, especially since Milwaukee is the largest point discharger. I believe it is sufficient for plaintiffs to show that defendants' nutrients discharges constitute a significant portion of the total nutrient input into the lake. The correct rule would seem to be that any discharger who contributes an aliquot of a total combined discharge which causes a nuisance may be enjoined from continuing his discharge. Either that is true or it is impossible to enjoin point dischargers.⁶⁵

If a court can be persuaded to adopt this approach in a climate change case, then it is quite arguable that large-scale emitters are directly violating the public's rights in respect of a healthy global atmosphere, irrespective of whether the damages caused to a particular plaintiff can be tied to that defendant's emissions.

There is no doubt that the public has suffered a measurable depreciation in the quality of the global atmosphere, with global concentrations of carbon dioxide rising from a natural level of about 300ppm (at the high point) to a current level, in 2011, of 388 ppm, and showing no sign of levelling off. Carbon dioxide emissions levels in 2010 were the highest ever.⁶⁶

Liability for GHG-related Infrastructure

In addition to addressing causation in the context of pollution, several of the riparian cases address the liability of government actors for their role in enabling or facilitating the deposit of pollution into water bodies. This line of authority may have an application in climate change litigation, where government or corporate resources, infrastructure and decisions may collectively be responsible for a considerable volume of greenhouse gas emissions.

The 1912 case of *Crowther v. Cobourg* is instructive. The case concerned the construction of a drain

⁶⁵ *Milwaukee II*, 1973 U.S. Dist. LEXIS 15607, at 21-22. cited in Pawa, *above*, note 64, p. 140.

⁶⁶ International Energy Agency, Prospect of limiting the global increase in temperature to 2°C is getting bleaker, 30 May 2011, available on-line at http://www.iea.org/index_info.asp?id=1959, last accessed 1 Dec 2011.

in an effort to address public safety issues caused by improper disposal of sewage into a creek. The Plaintiff, whose hotel was located on a riparian property, sued the municipality. The judge noted, and rejected, the municipality's view that the pollution did not originate with its drain, but with the residents who made use of the drain.

And it seems to me that the council from the outset laboured under the mistaken idea that so long as the by-law did not expressly permit the discharge of sewage the individuals and not the municipality must answer to the plaintiff. The situation is that the municipality bring by this drain this filth and deposit it in the stream. I do not think I am in any way concerned with how it reaches the drain — the municipality must take steps to protect its drain from wrongful use, if the use is wrongful and cannot shift the burden upon the plaintiff.⁶⁷

There are a series of cases concerning municipal liability for pollution and for flooding which take a similar approach, in which local governments which built stormwater and sewage infrastructure, or which authorized upstream development without sufficient stormwater infrastructure, were responsible when the overwhelmed infrastructure contributed to flooding downstream.⁶⁸

Indeed, some of the relevant cases hold local governments liable for the outcome of urbanization and increased urban run-off into streams, untied to related sewage or specific built stormwater infrastructure. Thus, in *Scarborough Golf and Country Club v. Scarborough (City)*, the Ontario Court of Appeal found the City liable in nuisance and in violation of riparian rights for increased flow of surface run-off arising from urbanization into naturally occurring water bodies and the resulting flooding:

Looking at the creekbed and floodplain together, they were originally capable of handling a limited daily flow and occasional flooding — that was their capacity. The original, narrower and

⁶⁷ 1 D.L.R. 40 (Ont. H.C.) at 41.

⁶⁸ *Oosthoek v. Thunder Bay (City)*, 34 M.P.L.R. (2d) 81, at 89; See also *Landry v. Moncton (City)* (2006), 44 MPLR (4th) 23 (NBQB) at 34-35, affirmed 44 MPLR (4th) 36 (NBCA).

shallower creek was unable to withstand the **markedly increased flows and velocity of flow over the years since urbanization to the north**. The creek's answer to that capacity limitation was to erode and become wider and deeper, and no opportunity has been given to permit nature to recover what has been lost as would occur under earlier conditions. Thus, capacity of this part of the watershed (the incised creekbed) was exceeded.

... Some users of lands adjacent to a stream might not be affected by the erosion that has occurred on the golf club, but most certainly the club and its enjoyment of its facilities is affected. Once the use is found unreasonable and a finding is made, as it has here by the learned trial Judge, that "the very use and enjoyment of the Club as a golf course has been seriously impaired," then it follows that this constitutes a nuisance at common law.⁶⁹

Collectively these cases seem to stand for the proposition that municipal governments, at least, cannot build, or facilitate through planning, infrastructure that they know or should know will inevitably cause flooding or the deposit of pollution on the properties of downstream land owners.

The implications of this approach for climate change litigation should be obvious: all levels of government, and many companies in the business of transporting fossil fuels, have played a key role in the planning and development of infrastructure and land use that facilitate both large scale greenhouse gas emissions, and the proliferation of small-scale emissions which collectively represent a major sources of emissions. Some examples of where this may be occurring will be discussed in more detail below.⁷⁰

ii. Assessing the significance of individual emitters

The riparian rights cases focus on the legal injury to a right, rather than the damages suffered by a

69 *Scarborough Golf & Country Club v. Scarborough*, (1988) 66 O.R. (2d) 257 (C.A.) at 265-66, affirming (on this point) 55 O.R. (2d) 193 (Ont. S.C.); See also *Kerlenmar Holdings Ltd. v. Matsqui (District)*, 56 B.C.L.R. (2d) 377 (C.A.); *Medomist Farms Ltd. v. Surrey*, 1 M.P.L.R. (2d) 46 (BCSC), affirmed 62 B.C.L.R. (2d) 168 (CA)

70 Below, note 94 to 95.

plaintiff. If the same approach is used in climate change cases, the focus is on the injury to the right to a healthy atmosphere – that is, the change in the natural state of the atmosphere – rather than the property damage or health impacts suffered as a result of global warming. This change in focus can hold accountable polluters that, in the context of other torts, might be considered *de minimis* contributors – defendants whose contribution to the damage by itself might be considered inconsequential, but is of great consequence cumulatively with other GHG emitters.

This approach seems essential to holding even the largest emitters legally responsible.

But this raises the question of at what point does an emitter become legally responsible? Despite the urgency of global warming, a court is likely to be sceptical of a legal theory that assigns legal responsibility for global warming to each and every emitter, down to the smallest and least significant. Indeed, the appellants in the U.S. climate case, *Kivalina v. ExxonMobil et al.*, have been forced to respond to arguments by the Defendants that their claim implies that "everyone in the world would be liable for global warming".⁷¹

This is a "straw man": a mischaracterization of the argument. The riparian cases are not intended to replace the *de minimis* rule, and do not apply to each and every individual who may take a drink of water from, or wash a bowl in, a stream. Rather, the judicial intent is to deal with a very real problem of how to hold significant polluters responsible for their pollution when it interacts, or could interact, with other sources of pollution.

Many of the cases can be taken as suggesting that any significant pollution is sufficient to create a cause of action, even if the presence of that pollution is not in any way detectable by itself.⁷²

71 *Kivalina v. ExxonMobil*, Appellant's Reply Brief, US Court of Appeals, Ninth Circuit, File No. No. 09-17490 at p. 10.

72 For example, "In cases of pollution it is oftentimes difficult to shew it -- in fact, it may be impossible to do so," quoted above in *St. Johns*, note 54, at p. 362; *Crowther v. Cobourg*, above, note 56 at p. 42: "The defendants have 'no right to pollute this stream in the smallest degree.'"; See also "Each [polluter] standing alone might amount to little or **nothing**," emphasis added, quoted above in *Woodyear*, note 64.

The next step, then, is to consider how a court might determine whether a given defendant's emissions are significant enough to attract legal responsibility. However, before commenting on the legal test for significance, it may be useful to look at some of the largest sources of emissions in Canada, to get a sense of their magnitude and, possibly, significance.

Some major Canadian sources

According to Environment Canada, in 2010 the total Canadian GHG emissions were 692 Megatons of CO_{2e} (Carbon dioxide equivalent – a figure which includes both carbon dioxide, but also a measure of other greenhouse gases):

- Transportation amounted to 166 MTCO_{2e}, or 24% of Canada's GHG emissions.
- The oil and gas industry was collectively responsible for about 154 MTCO_{2e}, or 22% of Canada's emissions.
- Electricity generation was responsible for 99 MTCO_{2e}, or 14% of Canada's GHG emissions.
- Buildings, Agriculture and "Emissions intensive and trade exposed industries" were each responsible for about 10% of Canada's GHG emissions.
- Waste and "other" were responsible for 7% in total.⁷³

While Transportation is responsible for the largest share of emissions, this is predominantly road traffic, caused by many individuals (although, of course, the road infrastructure is primarily the responsibility of a relatively small number of governments).

Many of the largest emitters are found in the oil and gas sector. This sector includes, but is not limited to, Canada's notorious tarsands/oilsands operations which in 2010 emitted 48 MegaTons of CO_{2e},⁷⁴ or about 5% of Canada's total emissions; this figure is expected to triple by 2020, at which point it will

⁷³ Environment Canada. National Inventory Report: Greenhouse Gas Sources and Sinks in Canada, 1990-2010. (Environment Canada, 2012), p. 22.

⁷⁴ Ibid., p. 50.

amount to 92 MTCO_{2e} or (by itself) about 12% of Canada's total emissions.⁷⁵

The oil and gas industry, both within the tarsands and in Canada generally, is dominated by a relatively small number of industrial players. Some of the largest GHG operations in this industry routinely emit 10 MT or more CO_{2e} per year,⁷⁶ and the same companies in some cases operate multiple operations.

If "downstream emissions" – the emissions resulting from the use of the oil and gas after it is sold – are factored in, this figure would be significantly higher.

Unburnable Carbon, a report by the Carbon Tracker Initiative, identifies the 200 companies in the world with the largest fossil fuel reserves.⁷⁷ A number of Canadian energy companies appear on the list, albeit with the proviso that the reserves associated with oil sands and other unconventional oil and gas reserves may be underrepresented:

The figure for unconventional oil is artificially low, we believe, due to Canadian accounting practices which result in oil sands reserves not being booked upon discovery. Instead, they are only reported under Canadian rules once production is believed to be 'imminent'.... There has recently been more interest in unconventional gas deposits, for example shale gas, which are also not included in these figures and have a higher carbon factor than traditional gas. The current limited treatment of unconvensionals suggests the reserve figures may be even higher and more carbon intensive, cancelling out mitigation gains.⁷⁸

⁷⁵ Canada. Canada's Emission Trends. July 2011. Available on-line at <http://www.ec.gc.ca/doc/publications/cc/COM1374/ec-com1374-en-toc.htm>, last accessed 6 December 2011.

⁷⁶ For example, according to Environment Canada's Reported Facility Greenhouse Gas Data, Suncor Energy, in 2010, emitted 14.5 MT CO_{2eq} (including 13.9 MT CO₂) greenhouse gases; Syncrude Ltd. emitted 12.7 MT CO_{2eq} (11.9 MT CO₂); Imperial Oil Ltd. reported 9.9 MT CO_{2eq}, almost all of which was CO₂. This data obtained from http://www.ec.gc.ca/pdb/ghg/onlinedata/dataSearch_e.cfm, last accessed 14 September 2012.

⁷⁷ Carbon Tracking Initiative. *Unburnable Carbon*. (March 2012), available on-line at <http://www.carbontracker.org/wp-content/uploads/downloads/2012/08/Unburnable-Carbon-Full1.pdf>, last accessed 13 September 2012, at pp. 13-14.

⁷⁸ Ibid., p. 12.

This analysis focuses not only on how much a company emits each year, but how much they expect to emit in the coming years.

Another sector that is characterized by a relatively small number of large-scale emitters is the electrical sector, with a small number of coal fired generators being responsible for large emissions.⁷⁹

Are these amounts “significant” enough that a court could take notice of its contribution towards the violation of the public’s right to a healthy atmosphere?

What about when those emissions are considered alongside emissions from the same companies operating in different jurisdictions, or planned emissions from those companies?

A Canadian plaintiff, suing for damages which occurred in Canada, is not, of course, limited to suing Canadian defendants, but it is important to understand the relative responsibility of Canadian companies under public nuisance law.

Further judicial direction is required, and there are several approaches that might be adopted. However, several issues warrant comment, including:

- a) The concept of “Significant” contribution in general; (“Significant” Contributions”)
- b) Significance judged by contribution to global “carbon budget”; (“Carbon Budgets and significance”)
- c) Significance judged by measurable changes in global atmosphere. (“Measurable changes and significance”)

(a) “Significant” contribution

Much of the U.S. climate change litigation essentially assumes that the courts are capable of distinguishing

⁷⁹ According to the Environment Canada Greenhouse Gas Data, above, note 79, Canada’s largest single point-source of emissions is the Sundance Thermal Power Electrical Generating Plant, emitting 15.7 MT CO₂ in 2010, and run by TransAltaPower Generation Partnership. TransAlta, which operates a number such facilities, reported a total of 26.1 MT CO₂ emissions in 2010.

between major (significant) and minor (insignificant) emitters. Matt Pawa, a lawyer who has been critical in the development of climate litigation theory in the U.S., writes that on the basis of the judicial approach to multiple-polluters:

[I]t became clear that defendants who emit millions of tons of CO₂ to the atmosphere would be unable to defend the case on the basis that their emissions alone do not create the entire nuisance but merely contribute to it.⁸⁰

Pawa does not attempt to define a significance test, or *de minimis* level of contribution. His position appears to be that the largest emitters – the energy companies targeted in climate change litigation – clearly are substantial enough to be considered multi-polluters. Interestingly, the defendants in the *Kivalina* case have apparently not contested the suggestion that their contribution to the alleged nuisance is substantial and significant.⁸¹

Courts routinely make complicated determinations about matters that have a subjective component. Consequently, there is nothing illogical about asking the courts to recognize that these companies are some of the largest GHG emitters in the world, and that if anyone is liable for breaching the public’s right to a healthy atmosphere, they are. If this approach is adopted, it would presumably be a question of fact for the trial judge to determine whether the contribution was substantial.

That being said, it is all too easy for the “significance” of GHG emissions to be downplayed, as negligible globally,⁸² and we will examine two theories that

⁸⁰ Pawa, above, note 64, p. 137. Restatement on Torts, Restatement (Second) of Torts §840E (1979) (“the fact that other persons contribute to a nuisance is not a bar to the defendant’s liability for his own contribution”).

⁸¹ Brent Newell, Counsel for Kivalina, presentation at the Public Interest Environmental Law Conference, Eugene, Oregon, March 3, 2012.

⁸² An environmental assessment panel considering the Kearl Oil Sands project concluded that the environmental impact of its greenhouse gas emissions were not “significant” within the meaning of the *Canadian Environmental Assessment Act* despite **by itself** amounting to 1.7 % of Alberta’s total annual emissions, and 0.51 % of Canada’s: *Pembina v. Canada*, 80 Admin LR (4th) 74; 323 FTR 297, para 70. The Canadian Environmental Assessment Act does not, in fact, define “significant” and the panel in question did not state its definition. The panel was focused on the emissions from a single project, rather than the emissions of a particular defendant, and was clearly not consid-

provide greater direction on how to evaluate the impact of GHG emissions on the public right.

(b) Carbon budgets and Significance

It is well established that humans cannot continue to pour greenhouse gases into the global atmosphere without drastic and catastrophic impacts. A “carbon budget” refers to a measure of how much carbon dioxide, or equivalent greenhouse gases, the world (or a jurisdiction) can put into the atmosphere if it hopes to meet an agreed upon target. The significance of a defendant’s emissions might be assessed against their contribution to the emissions allowed under a “carbon budget” and/or their impact on the likelihood of a jurisdiction meeting their greenhouse gas reduction targets.

A contentious piece of this analysis would be how a court selects the appropriate “budget” and whether they are making policy in doing so. There are at least 3 possible approaches to fashioning a budget.

First, the analogy to the riparian rights cases which emphasize the right of riparian owners to unaltered flow and quality of water would suggest a carbon budget based upon maintaining the naturally occurring concentrations of greenhouse gases (and no increase in global temperature). Global concentrations have already passed that level, but noted NASA scientist, James Hansen and his colleagues have proposed a budget based on aggressive cuts to GHG emissions and reforestation efforts aimed at restoring global concentrations of CO₂ to pre-industrial levels by 2100:

We use Earth’s measured energy imbalance and paleoclimate data, along with simple, accurate representations of the global carbon cycle and temperature, to define emission reductions needed to stabilize climate and avoid potentially disastrous impacts on young people, future generations, and nature. We find that global CO₂ emissions reduction of about 6%/year is needed, along with massive reforestation.⁸³

ering the impact of the emissions upon a public right.

83 Hansen, J. et al. Scientific Case for Avoiding Dangerous Climate Change to Protect Young People and Nature. (2012), arXiv:1110.1365v3, Submitted to Proceedings of the National Academy of Science, available on-line at <http://arxiv.org/abs/1110.1365>, last accessed 13 September 2012.

Second, in some cases there may be a legislated budget or target. For example, British Columbia, in its *Greenhouse Gas Reduction Targets Act*, states:

The following targets are established for the purpose of reducing BC greenhouse gas emissions:

(a) by 2020 and for each subsequent calendar year, BC greenhouse gas emissions will be at least 33% less than the level of those emissions in 2007;

(b) by 2050 and for each subsequent calendar year, BC greenhouse gas emissions will be at least 80% less than the level of those emissions in 2007.⁸⁴

These targets could be used to determine an approximate quantity of GHGs that British Columbians should collectively emit in a given year.

Third, international law commitments might be used to calculate a carbon budget. Canada, and almost every country in the world, has committed to preventing temperatures from rising globally by more than 2°C above pre-industrial temperatures – a temperature increase above which scientists tell us runaway climate change is likely to occur.

A number of scientists have quantified how much CO₂ could be emitted while still remaining under a 2°C target. Due to uncertainties, the answer depends upon the desired level of confidence. Thus, to have 75% confidence that the world will get no warmer (on average) than a 2°C increase, humanity needs to limit GHG emissions between 2000 and 2050 to 1000 GT CO₂,⁸⁵ or a global average of 20 GT per year. Since humans have emitted approximately 362GT

84 SBC 2007, c. 42, s. 2.

85 M. Meinshausen et al. “Greenhouse-gas emission targets for limiting global warming to 2°C”. *Nature* 458, 1158-1162 (30 April 2009). A budget of 1440 GT CO₂ from 2000 to 2050, or an annual average of about 28.8 GT CO₂e would result in a 50% probability. For other attempts by scientists to calculate budgets based on limiting temperature increases to 2°C see Zickfeld et al. “Setting cumulative emissions targets to reduce the risk of dangerous climate change” 106(38) PNAS 16129–16134 (2009); and M. Allen et al. “Warming caused by cumulative carbon emissions towards the trillionth tonne” 458 *Nature* 1163-6 (April 30 2009). See B. McKibben. “Global Warming’s Terrifying New Math”, *Rolling Stones Magazine*, August 2, 2012 for a lay discussion of a carbon budget based on these figures.

CO₂⁸⁶ from 2000 to 2010, the global 2011-2050 budget is about 638 GT CO₂, or an annual average of about 16 GT CO₂.

Since Canada represents approximately .5% of the world's population, the Canadian share of emissions based on a per capita allocation would be about 80 MT CO₂ per year from 2011 to 2050.⁸⁷

In this context, it seems much clearer that the largest operations in the oil and gas or electrical generation sectors, emitting more than 10 MT CO_{2e} annually, is significant. TransAlta's emissions from its operations **by themselves** represent almost one third of an 80 MT CO₂ annual budget.⁸⁸

Unlike the first budget which is based on restoring natural concentrations of greenhouse gases and is more consistent with the right to a healthy global atmosphere, this third budget anticipates an average global temperature increase of 2°C. As such, it is a budget that does not guarantee that the health of the atmosphere remains unchanged, but rather would see more dramatic temperature increases in some parts of the globe, including Canada. However, even within this budget, which accepts a significant violation of the public's right to a healthy atmosphere, the emissions of many Canadian companies are easily seen to be significant.

(c) Measurable changes and significance

The riparian rights cases suggest another possible approach to what level of emissions is "substantial" or significant enough to give rise to liability. While some of the riparian case law suggests that individual emissions may be significant even at essentially undetectable levels,⁸⁹ the case law is clear that if a change in the quality or flow of water is detectable,

86 Tyndall Centre for Climate Change Research, Global Carbon Budget 2010, available on-line at <http://www.tyndall.ac.uk/global-carbon-budget-2010>, last accessed 14 September 2012.

87 Of course, it is generally assumed that the emissions in earlier years will be above this average, and that towards 2050 it will be below that average. However, as a crude guide to judging the significance of contributions, it is not necessary to know a precise year-by-year target. In addition, many people assume that developed countries will continue to emit more than their share in the short term, but there is no particular equitable or legal basis for this assumption.

88 Above, note 79.

89 Above, note 72.

then the riparian right has been violated, and the courts will intervene.

Thus, if the GHG emissions from an emitter can be detected at an atmospheric level, the emissions are clearly significant. This is challenging because large scale emitters are discharging their greenhouse gas emissions into the global atmosphere, diluting even large scale emissions, making them difficult to detect. The argument that individual emitter's contribution is individually inconsequential has plagued climate change litigation efforts, as well as campaigns for political action on climate change.

But while individual point-source emissions may or may not be detectable by themselves,⁹⁰ emissions, not from individual projects, but from, or attributable to, individual companies and governments, can certainly reach levels that approach or (depending on what is included), surpass levels that are detectable on a regional or global level.

According to Professor Andrew Black of the University of British Columbia the global network of sensors that detect changes in parts-per-million (ppm, a measure of the concentration, in this case of carbon dioxide in the atmosphere) can detect changes in the global atmospheric concentrations of CO₂ approaching 0.1 ppm.⁹¹

According to Neil Swart of the University of Victoria burning Canada's economically proven oil sands reserves would increase the global concentration of CO₂ by between 3-8 ppm, depending upon the timing. He has generated figure 1, demonstrating the impact on global GHG concentrations if the economically proven reserves were burnt at a constant rate over the next 50 years (2012 to 2062).

90 This is not certain, however. As noted above at note 79, TransAlta's Sundance Thermal Electrical Power Plant produced 15.7 MT CO₂ in 2010. Since Syncrude's 12.7 MT CO_{2eq} of reported GHG emissions are listed as coming from a single oil sands mine in Alberta, the "Mildred Lake and Aurora North Plant Sites". Similarly, Suncor Energy Ltd. operates an oil sands mine which produces in excess of 8 MT CO_{2eq}. Environment Canada, above, note 76. These levels, at least over time, approach what is detectable.

91 Personal Communications with the Author. Note, however, that that refers to the detection of CO₂, not the CO_{2eq} measures quoted in some places in this article (where those figures were most readily available) which include other gases, although approximately 80% of Canada's GHG emissions are CO₂.

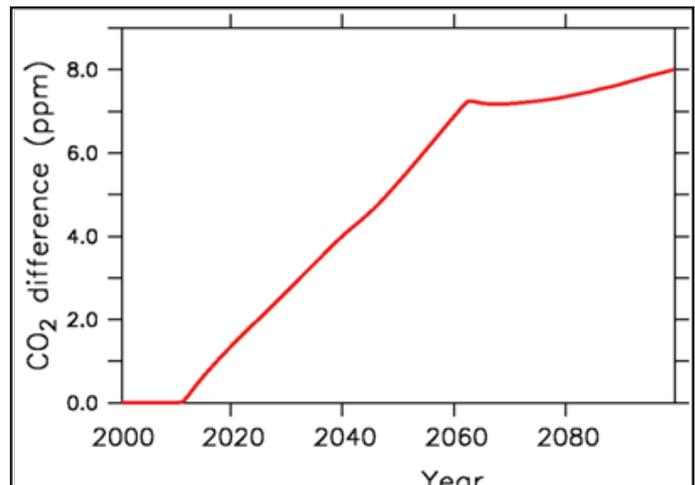
CO₂ difference refers to the increase in global CO₂ concentrations over what would occur without the oil sands extraction occurring.⁹²

The direct (non-downstream) emissions are more easily detectable at the regional level. While the impacts of climate change are felt globally, and the global concentration of CO₂ is currently about 390 ppm, at any one time the concentrations of ppm in a particular place will be higher or lower than that average. There is an area of science which examines regional variability in CO₂ concentrations as a way of detecting large-scale emissions (whether human-caused or naturally occurring). Since the oil sands emissions are less diluted at a regional level, the 0.1 ppm accuracy of the equipment may well be capable of detecting emissions from these sources in the atmosphere above Western Canada.

To draw the parallel to riparian rights cases, the question of whether water pollution is detectable focuses on pollution at the point where the riparian rights holder's property borders the water body; whether the pollution will be detectable once diffused through the entire river, lake or ocean ecosystem is irrelevant.

If a company's oil sands operations are regionally or globally detectable, they should be considered legally significant.

⁹² Neil Swart is co-author, with A. Weaver, of *Alberta Oil Sands and Climate Change*, doi:10.1038/nclimate1421 (2012). Mr. Swart explains (in personal correspondence with the author): "The temperature response to using the oil-sands is basically independent of the time-structure of the emissions. That is, in the long-term the amount of warming will be the same if you burnt them all instantly, or if you burn them slowly. The same is not true for atmospheric CO₂ concentration. The amount that atmospheric CO₂ will increase due to oil-sands usage is dependent on the timing of the emissions, because it depends on the amount of emissions that have occurred from other sources. [basically, the earlier they are burnt, the less atmospheric CO₂ will increase, the later they are burnt, the more atmospheric CO₂ will increase. This is because as total emissions increase, natural carbon sinks saturate, and are less able to take up additional emissions] That means, in asking how much will atmospheric CO₂ increase due to oil-sands use, we need to make some assumptions about the timing of the emissions, as well as assuming the level of background emissions from other sources. The way I have done this is to assume that background emissions are given by the IPCC SRES A2 scenario. I also assume that the carbon in the oil-sands is emitted over the period 2012-2062 (evenly, i.e. equal emissions every year). I place these emissions [SRESA2 + oilsands] into the UVic Earth System Climate Model, and then look at the atmospheric CO₂ concentration."



And the above discussion only considers oil sands operations. Many of the companies involved in the oil sands may have conventional oil or other fossil fuel operations elsewhere in Canada, or in the world, bringing even their direct emissions up to a globally detectable level.

As noted above, oil and gas operations in Canada amounted in 2010 to 22% of Canada's total emissions, or total emissions of 154 Megatonnes CO_{2eq} per year. This amounts to approximately 110 MT of CO₂ (not including the equivalent value of other gases), which means that the entire Canadian industry is contributing approximately .05 ppm each year in **direct emissions** to the global concentration of CO₂.⁹³ Again, with downstream emissions factored in the figure is higher. As noted, some of the larger players could become detectable over a period of just a few years, particularly when their downstream emissions and corporate emissions from sources in other countries are included.

The significance of government emissions

As discussed above,⁹⁴ the courts have held municipal governments liable in the context of riparian cases for infrastructure that enables individuals to pollute or otherwise change the flow of watercourses. This case law suggests that the construction of infrastructure which enables pollution may result in the government that built the infrastructure being liable for the collective levels of pollution or environmental impacts.

⁹³ National Inventory, above, note, 73, Part III, Appendix 12, p. 14.

⁹⁴ Above, notes 67 to 70.

So, in addition to considering the individual GHG emissions of oil and gas companies, it is worth considering the role of provincial governments in facilitating the development of the industry. Provincial governments own the oil and gas rights in each province. By selling those rights to private companies, and by giving approvals and authorizations for the projects, the provinces with significant oil and gas operations could be seen as having enabled the direct and indirect emissions of the industry as a whole.⁹⁵

Similarly, transportation is currently the single largest source of emissions in Canada (at 166 MT CO_{2eq} annually). While the individual emitters burning the fossil fuels in cars and trucks are far too small to detect, and would individually be considered trivial, this immense production of greenhouse gases is directly enabled by Canada's provincial and federal governments, through transportation infrastructure – roads, ports and airports. It is worth noting that choices about what transportation infrastructure is constructed and how and where to locate it has profound implications for how much GHG emissions will result.

Such situations are analogous to the cases, discussed above, in which governments have been held liable for pollution or flooding from infrastructure which they built or enabled. In these and other sectors it is possible that a government might be held to have enabled a significant level of emissions on the basis of one of the above theories.

Summary of “significant” causes

Causation may seem to be one of the most formidable barriers to a climate case. However, the reality is that there are large emitters that contribute significantly to the problem, even if no one emitter is “causing” the problem by itself.

The above approaches to identifying significant contributions are complementary – a carbon budget approach and an awareness of which emitters are measurably impacting the health of our global

⁹⁵ This paper has not examined whether there may be any statutory or other defenses available to such a province were a suit to be brought against it for having enabled the oil sands operations.

atmosphere can both help a court to determine which emitters are significant. Other approaches will no doubt be proposed.

The largest emitters in the world know that their emissions are causing major hardships, but persist in insisting that they are doing nothing wrong, and, indeed, that they are benefiting the economy. By recognizing the reality of the impact of these emissions, the common law could require these companies to internalize the costs that they have been inflicting on the global economy. By targeting the largest emitters, the economy itself will be forced to deal with the “elephant in the room” – global warming.

B. Causal connection to specific harm

Shifting the focus to the impact of large scale GHG emissions on the public's right to a healthy atmosphere simplifies issues of causation significantly. It would clarify that at common law the global atmosphere is not a dumping ground, and would open up the possibility for declaratory judgments and injunctive relief, or even monetary damages claimed on behalf of the public at large.⁹⁶

However, in order to claim damages for particular losses that a plaintiff attributes to climate change, the plaintiff would need to link his or her loss to the violation of the public's right to a healthy atmosphere and rising global temperatures.⁹⁷ This type of causal link may also be necessary to establish standing for a particular individual.⁹⁸

It is important to note that (unlike the general causation issues discussed above), the ability of a plaintiff to connect their own damages to climate change, while challenging, will depend to a very large extent on the facts of the particular case. In the right cases, it may well be possible to prove this connection even on the basis of a conventional

⁹⁶ Canfor, above, note 19, p. 114.

⁹⁷ As noted, the focus of this paper is on questions of causation. An important separate, although clearly related, question is how liability should be proportioned between the many large-scale emitters who contributed to climate-related damages. A number of possibilities exist, including but not limited to joint and several liability and apportionment on the basis of market share. We have not attempted to resolve these issues in this paper.

⁹⁸ See above, note 13.

standard of proof. This will depend both on the particular plaintiff bringing the claim⁹⁹ and on the types of damages alleged,¹⁰⁰ as well as on the state of the scientific evidence.¹⁰¹

But what, if anything, does a focus to a public right to a global healthy environment have to say about specific harm suffered as a result of climate change? It is worth considering a series of riparian/water rights cases in which, much like climate change cases, the courts have had to grapple with specific causation issues arising from uncertain and complicated scientific evidence.

In addition to the principles of water law discussed above, these cases have recognized the need to modify the rules of proof surrounding specific causation, holding that defendants who are carrying out activities likely to impact water flow and quality should bear the onus of proof in establishing that their activities did not (or will not, in the case of applications for injunctive relief to prevent harm to the watercourse) negatively impact the water flow. This approach seems to foreshadow the development of international law's precautionary principle, but in reality dates to at least the middle of the 19th century.

Thus in a case in which a plaintiff sought injunctive relief from the construction of a structure within the banks of a stream, the court wrote:

[A] riparian proprietor has no right to erect any building in *alveo fluminis*, and that if he does so,

99 Plaintiffs who are able to aggregate private loss may have a better chance at proving this type of causation. Government plaintiffs – both Canadian governments and foreign governments seeking to sue in Canadian courts – who can claim climate related damages throughout their jurisdiction, will have an advantage. Private insurance companies might also claim for documenting increased claims from their clients related to extreme weather related events. There might be similar possibilities for First Nations, logging companies or other entities that have rights in respect of lands or the resources covering of a wide geographic area that can be shown to suffer from the long-term impacts of a warming climate over time.

100 Damages that are connected to long-term shifts in climatic conditions (for example, damages associated with the spread of a pest or disease outside of its historic range) may, for example, be easier to connect to climate change than damages arising from a particular weather or other one-time event.

101 Scientists are increasingly willing to connect particular weather events to climate change. See, for example, P. Pall et al. "Anthropogenic greenhouse gas contribution to flood risk in England and Wales in Autumn 2000". *Nature*, Volume: 470, Pages: 382–385 Date published: (17 February 2011)

although the opposite proprietor may be unable to prove that any damage has actually happened to him by the erection, yet, if the encroachment is not of a slight and trivial but of a substantial description, it must always involve some risk of injury. Lord Benholme said, "Without my consent" (i.e., the consent of the proprietor of the other side of the river) "you are not to put up your building in the channel of the river, for that in some degree must affect the natural flow of the water. What may be the result no human being with certainty knows, but it is my right to prevent your doing it, and when you do it, you do me an injury whether I can prove damage or not." ... These views appear to me to be perfectly sound in principle, and to be supported by authority.¹⁰²

Similarly, in a claim for damages arising from the installation of an inadequate culvert during the construction of a railway, and the resulting flooding on the plaintiff's property, the Alberta Court of Appeal held that the defendant, Canadian National Railway, having interfered with the plaintiff's right to the ordinary flow of water in a watercourse, bore the onus of proving that the resulting harm was not caused by the violation of that right.

The next question raises considerable difficulty, viz., whether notwithstanding the insufficient outlet through the railway embankment the plaintiffs' damages are attributable to the extraordinary rainfall in 1920 and would have been sustained if the embankment had not been constructed.... I would think the burden of proving this was on the defendant.¹⁰³

A similar shift in onus, if adopted in climate change cases, could provide assistance to litigants seeking to establish that large-scale GHG emitters were responsible for specific damages.

102 *Bicket v. Morris* (1866), 14 LTS (N.S.) 835 (H.L.); This principle from *Bicket v. Morris* was adopted by the BC Supreme Court in *West Kootenay P. and L. Co. v. Nelson*, 1906 CarswellBC 42, but the majority in the Court of Appeal, while not disputing the existence of the principle, questioned its application to the fast moving rivers of British Columbia: (1906), WLR 239 (BCCA).

103 *Townsend v. Canadian Northern Railway* (1922), 65 D.L.R. 85 at p. 90 (Alta. C.A.).

Clearly a climate litigant seeking damages will face some real challenges. Nonetheless, there is potential, in the right case, for litigants to make the required causal link. For each case this issue of causation will hinge upon the specifics of the case, including the scientific evidence available to link the harm suffered to climate change and the type of harm claimed. However, a public rights theory of climate change litigation might provide some additional tools to such a litigant, and as science becomes better at drawing this type of connection, there will be more and more cases in which a plaintiff may be able to prove such a link on the balance of probabilities.

Part IV – Conclusion

Each year Canadians are suffering literally billions of dollars of damages due to human caused climate change, including major impacts on personal, property, Aboriginal and other legally recognized rights, and these amounts are rising. The law has long insisted that there must be a remedy for any violation of a right, and in many ways the suggestion that identifiable corporate and government entities can cause such wide-spread damage to so many defendants without incurring substantial liability should be considered remarkable.

Instead, due in large part to the perception that each contribution to climate change is insignificant, the problem has been framed as a political one – rather than a legal one, with the result that large scale emitters have been permitted to reap immense profits without paying for the damages that they are directly contributing to.

However, the reality is that the impacts of climate change are occurring because the health of our global atmosphere is being compromised. By focussing less on the on-the-ground impacts of climate change to particular legal rights, and more on the fact that we all depend on this global atmosphere for those rights and, indeed, for our very existence, it becomes clear that individual large-scale emitters are compromising our public right to a healthy atmosphere.

At the end of the day, however, the purpose of this article is not merely to pave the way for litigation to

compensate victims, important though that goal is. It is equally important, politically, that corporations and their investors, as well as politicians and the public, understand that the common law does not give a blank cheque to emitters of greenhouse gases – permission to use the global atmosphere as a dumping ground. When society recognizes that the large-scale GHG emitters cannot escape the consequences of their actions, then we can hope for real changes in how business is done, and how governments regulate greenhouse gas emissions.

West Coast Environmental Law is a non-profit group of environmental law strategists and analysts dedicated to safeguarding the environment through law. We believe in a just and sustainable society where people are empowered to protect the environment and where environmental protection is law. For almost 40 years we have played a role in shaping BC and Canada's most significant environmental laws, and have provided legal support to citizens, First Nations, and communities on practically every environmental issue imaginable.



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