

Navigating Environmental Risk: When and How to Apply the Precautionary Principle

By [Charles Birchall](#), Partner and Certified Environmental Law Specialist, [Julie Abouchar](#), Partner and Certified Specialist in Environmental Law and in Indigenous Legal Issues and [John Donihee](#), Of Counsel with the assistance of Raeya Jackiw, Student-at-Law.
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1 INTRODUCTION

The interpretation and application of the precautionary principle in Canada is far from settled. The Supreme Court of Canada has recognized one version of the precautionary principle: where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing cost-effective measures to prevent environmental degradation.¹

However, since its adoption by the Supreme Court, the precautionary principle has been interpreted and applied inconsistently in Canadian legislation and by Canadian courts and tribunals. Uncertainty and inconsistency in the precautionary principle's interpretation and application has caused some courts and tribunals to conclude that the principle is too vague to be of use. This is problematic for the public, industry participants and regulators alike because there is confusion about when and how the principle should be applied to large projects and to protect the environment.

Canada's approach to the precautionary principle stands in contrast to the approaches taken by other countries. Courts in Australia and New Zealand have developed detailed legal tests outlining how the precautionary principle should be interpreted and when it should be applied. Drawing from these examples, we propose an approach to the use of the precautionary principle in Canada which we suggest will result in a more consistent framework for its use in resource development and environmental protection.

Formulating an effective and predictable framework for application of the precautionary principle is of particular relevance to certain policy makers as the federal government conducts its review of core federal environmental legislation, including the *Canadian Environmental Assessment Act, 2012* ("CEAA")² and the *Fisheries Act*.³ Other jurisdictions undertaking legislative review of environmental legislation, such as the Northwest Territories, would also benefit from considering whether and how to integrate the precautionary principle into their regulatory schemes. Applied appropriately, the precautionary principle is an important tool for addressing risk of serious or irreversible environmental damage where there is a lack of scientific certainty.

¹ *114957 Canada Ltée (Spraytech, Société d'arrosage) v Hudson (Town)* 2001 CarswellQue 1268, 2001 CarswellQue 1269, 2001 SCC 40 at 31 [Spraytech].

² SC 2012, c 19, s 52 [CEAA].

³ RSC, 1985, c F-14 [Fisheries Act].

2 DEVELOPMENT OF THE PRECAUTIONARY PRINCIPLE

Broadly speaking, the precautionary principle embodies the idea that it is “better to be safe than sorry” when undertaking actions that pose environmental risk.⁴

In 1990, the Environment Ministers of 34 countries, including Canada, attended the Bergen Conference on Sustainable Development and set out the following formulation of the precautionary principle in a Ministerial Declaration:

In order to achieve sustainable development, policies must be based on the precautionary principle. Environmental measures must anticipate, prevent and attack the causes of environmental degradation. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.⁵

Shortly thereafter, at the 1992 United Nations Conference on Environment and Development, the Bergen formulation of the precautionary principle was largely incorporated into the *Rio Declaration on Environment and Development* [“*Rio Declaration*”], and labelled as a precautionary “approach”:

In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.⁶

The *Rio Declaration* formulation of the precautionary principle differed from the Bergen formulation in that it modified measures to include only the taking of *cost-effective* measures. Since the *Rio Declaration*, the precautionary principle has been included explicitly in most international environmental instruments.⁷

⁴ Di Salvo, CJP and Raymond, L. 2010. Defining the precautionary principle: an empirical analysis of elite discourse, *Environmental Politics*, 19:86-106 at pg. 86 [Di Salvo and Raymond].

⁵ Bergen Ministerial Declaration on Sustainable development (1990) at ART 7; Conference on "Action for a Common Future," Bergen, Norway, May 8-16, 1990

⁶ Rio Declaration on Environment and Development, Principle 15, UN Doc A/CONF 151/26 (vol I); 31 ILM 874 (1992).

⁷ Parsons, D. and Garnett, K. 2017. Multi-case review of the application of the precautionary principle in European Union law and case law, *Risk Analysis*, 37(3); Tollefson, C. 2012. A precautionary tale: Trials and tribulations of the precautionary principle, *A Symposium on Environment in the Courtroom: Key Environmental Concepts and the Unique Nature of Environmental Damage*, University of Calgary, March 23-24. Freestone D. and E. Hey. 1996. “Origins and Development of the Precautionary Principle, The Precautionary Principle and International law, *The Hague: Kluwer Law International*, at pg. 41. Note that formulations of the precautionary principle vary across international environmental instruments, and that the precautionary approach is often cited instead of the precautionary principle in many international environmental instruments. Several scholars have commented on the issues associated with defining and interpreting the precautionary principle internationally – these issues are not unique to Canada.

3 ADOPTION OF THE PRECAUTIONARY PRINCIPLE BY THE SUPREME COURT

In 2001, the Supreme Court of Canada officially recognized the *Rio Declaration* formulation of the precautionary principle in *114957 Canada Ltée (Spraytech, Société d'arrosage) v Hudson (Town)*.⁸ In *Spraytech*, the Court determined that the *Cities and Towns Act*,⁹ s. 410(1) permitted the Town of Hudson to validly enact a by-law restricting the use of pesticides.¹⁰ In interpreting the *Cities and Towns Act*, the Supreme Court considered the applicability of international law:

[T]he legislature is presumed to respect the values and principles enshrined in international law, both customary and conventional. These constitute a part of the legal context in which legislation is enacted and read. In so far as possible, therefore, interpretations that reflect these values and principles are preferred.¹¹

The Court held that its interpretation of the *Cities and Towns Act* was consistent with principles of international law and policy, and in particular, with the precautionary principle.¹² The Court recalled that Canada had “advocated inclusion of the precautionary principle” throughout the Bergen Conference and highlighted the principle’s codification in multiple Canadian statutes.¹³ The Court reasoned that:

Scholars have documented the precautionary principle’s inclusion ‘in virtually every recently adopted treaty and policy document related to the protection and preservation of the environment’ (D. Freestone and Ellen Hey, eds., *The Precautionary Principle and International Law* (The Hague: Kluwer Law International, 1996), at pg. 41. As a result, there may be ‘currently sufficient state practice to allow a good argument that the precautionary principle is a principle of customary international law’ (James Cameron and Julie Abouchar, “The Status of the Precautionary Principle in International Law” at pg. 52).

The precautionary principle, as articulated in the *Rio Declaration* and recognized by the Supreme Court in *Spraytech*, is only engaged where two conditions precedent are met, namely:

- 1 a threat of serious or irreversible damage; and
- 2 a lack of full scientific certainty.

Where these conditions are met, the lack of full scientific certainty as to the potential environmental consequences of an action should not be used as a reason for decision-makers to postpone cost-effective measures to prevent environmental degradation.

⁸ *Spraytech*.

⁹ RSQ, c C-19.

¹⁰ *Spraytech* at para 2.

¹¹ *Spraytech* at para 30, citing Driedger on the Construction of Statutes.

¹² *Spraytech* at para 30.

¹³ *Spraytech* at para 31.

However, the precautionary principle is not (as some courts have suggested) a “zero-tolerance” approach to development. Where both conditions are met, projects and proposals may still proceed. Properly defined and applied, the precautionary principle provides a consistent and prudent framework for decision-makers to determine if sufficient cost-effective measures have been put into place to prevent environmental degradation.

4 PRINCIPLE EXPRESSED VARIABLY IN LEGISLATION

The precautionary principle has been incorporated into a variety of Canadian federal, provincial and territorial environmental laws. However, the definition of the precautionary principle used in Canadian legislation has been variable at best. Existing formulations of the precautionary principle, in Canada and internationally, vary considerably, both in terms of the strength of precaution required and precision in terms of how or when precaution should be exercised.¹⁴

Many of the principle’s formulations in Canadian legislation differ from the *Rio Declaration* formulation recognized by the Supreme Court. Other pieces of legislation reference the precautionary principle, but do not define it. Federal, provincial and territorial governments offer little or no guidance on how to interpret and apply these different formulations of the principle.

4.1 LEGISLATIVE DEFINITION OF PRINCIPLE IS VARIABLE

The precautionary principle has been integrated into several Canadian federal statutes, with adjustments accounting for the statutory context.¹⁵ For example, Canada’s *Species at Risk Act* states:

...if there are threats of serious or irreversible damage to a wildlife species, cost-effective measures to prevent the reduction or loss of the species should not be postponed for a lack of full scientific certainty.¹⁶

Similarly, the *Canadian Environmental Protection Act* (“CEPA”) states the Government shall apply the precautionary principle when exercising its powers¹⁷ and when interpreting certain assessments, results, and decisions.¹⁸ CEPA also provides that the Government of Canada is committed to:

¹⁴ Sandin, P. 1999. Dimensions of the precautionary principle. *Human and ecological risk assessment: An international journal*, 5: 889-890 [Sandin].

¹⁵ See also the federal *Pest Control Products Act*, SC 2002, c 28 at s 20(2), which states that “where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent adverse health impact or environmental degradation.”

¹⁶ *Species at Risk Act* SC 2002, c 29 at preamble and s. 38 [SARA].

¹⁷ *Canadian Environmental Protection Act*, 1999 SC 1999, c 33 at ss. 2(1) [CEPA].

¹⁸ CEPA at s. 76.1.

... implementing the precautionary principle [such] that, where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.¹⁹

Nuances introduced in different versions of the principle serve to create uncertainty about the principle's scope and application. For instance, some statutes do not specify that the measures taken to prevent environmental harm must be cost effective. The *Canada National Marine Conservation Areas Act* says that Canada is committed to the principle that "where there are threats of environmental damage, lack of scientific certainty is not used as a reason for postponing preventative measures."²⁰ The *Ontario Water Resources Act* recognizes that "where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation."²¹ In Nova Scotia, the precautionary principle is referenced in the *Environment Act*, and provides that the "precautionary principle will be used in decision making so that where there are threats of serious or irreversible damage, the lack of full scientific certainty shall not be used as a reason for postponing measures to prevent environmental degradation."²²

Other statutes also do not specify whether measures employed to respond to uncertainty must *prevent* environmental degradation. The Ontario *Endangered Species Act, 2007* provides that individuals preparing a recovery strategy for a species at risk shall consider that "where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat."²³ The *Species at Risk (NWT) Act*,²⁴ s. 7 provides that "a person or body exercising powers or performing duties under this Act shall not use a lack of scientific certainty as a reason to delay measures to alleviate a threat to a species."

While most statutes reference lack of scientific certainty as a precondition for exercising the precautionary principle, the Nunavut *Wildlife Act* states that decision-making under the Act should be governed by the precautionary principle,²⁵ and that the precautionary principle should be applied in the preparation of a species recovery policy so that "if there are threats of serious or irreversible damage to the listed species, cost-effective measures to prevent the reduction or loss of the species are not postponed for a lack of certainty."²⁶

¹⁹ CEPA at preamble.

²⁰ SC 2002, c 18 at preamble and s 9(3) [CNMCAA].

²¹ RSO 1990, c O 40, s 34.4(2) [OWRA].

²² 1994-95, c 1, s 2 [EA].

²³ SO 2007, c 6, s 11(3), see also s 48 and preamble [ESA]; See also the Nova Scotia *Endangered Species Act* SNS 1998, c 11 s 2(1), which recognizes that "a lack of full scientific certainty must not be used as a reason for postponing measures to avoid or minimize the threat of a species at risk in the province."

²⁴ SNWT 2009, c 16.

²⁵ SNu 2003, c 26, s 130 s 1(2)(e) [WA].

²⁶ WA s 134(2).

In some instances, it is not clear whether the principle requires precautionary measures to be cost-effective or designed to prevent, minimize, or alleviate environmental harm. It is also unclear whether the principle is triggered by a lack of full scientific certainty as to the environmental risks posed by a project or proposal, or if it can be triggered by uncertainty in general.

4.2 PRINCIPLE OFTEN LEFT UNDEFINED IN LEGISLATION

Some statutes reference the precautionary principle but do not define it, leaving the precautionary concept completely open for interpretation by courts and administrative tribunal decision-makers. The CEAA states that the federal government must exercise its powers in a manner that applies the precautionary principle,²⁷ but does not define it. In Ontario, the *Lake Simcoe Protection Act, 2008* (“LSPA”) provides that the Lake Simcoe Science Committee shall provide advice to the Minister on “whether a proposed amendment to the Lake Simcoe Protection Plan is consistent with the precautionary principle.”²⁸ The LSPA does not define the precautionary principle for the Act’s purposes. In Manitoba, the *Water Resources Conservation Act* (“WRCA”) states in its preamble that water resource management schemes “should be based on the precautionary principle and on sustainable resource management practices.”²⁹ In Nova Scotia, the *Water Resources Protection Act* (“WPRA”) provides that the “management of [water] must be based on sustainability and reflect the precautionary principle relative to future supply requirements.”³⁰ Neither WRCA nor WPRA define the precautionary principle.

4.3 PRECAUTIONARY APPROACH REFERENCED INSTEAD OF PRINCIPLE

Other statutes reference the precautionary approach instead of the precautionary principle. The precautionary approach lacks the substantive content and conditions precedent found in most formulations of the precautionary principle. The federal *Oceans Act* states that “Canada promotes the wide application of the precautionary approach to conservation... that is, erring on the side of caution.”³¹ The CEAA states that its purpose is to ensure projects are “considered in a careful and precautionary manner to avoid significant adverse environmental effects”³² and that the Federal government must exercise its powers in a manner that applies the precautionary principle.³³ It is not clear that the application of the “precautionary manner” and “precautionary approach” are triggered by scientific uncertainty or threats of serious and irreversible damage. It is also not clear whether decisions made using a “precautionary approach” or in a “precautionary manner” require the implementation of cost-effective measures to prevent adverse environmental effects.

The Nova Scotia *Endangered Species Act* provides a standard definition of the principle, recognizing “that a lack of full scientific certainty must not be used as a reason for postponing measures to avoid or minimize the threat of a species at risk in the province.”³⁴ However, the

²⁷ 2012 SC 2012, c 19, s 52 at s 4(2) [CEAA 2012].

²⁸ SO 2008, c 23 [LSPA].

²⁹ SM 2000, c 11 [WRCA].

³⁰ 2000, c 10, s 1, preamble [WPRA].

³¹ SC 1996, c 31 at preamble and s. 30 [Oceans Act].

³² CEAA 2012.

³³ CEAA 2012 at s 4(2).

³⁴ SNS 1998, c 11 s 2(1) [ESA].

ESA goes on to state that the Minister may list endangered or threatened species on a “precautionary basis”, where there is a threat to the survival of the species, regardless of whether the scientific information is available.³⁵ It is not clear what “precautionary basis” means and what making a decision on a precautionary basis entails.

4.4 LITTLE OR NO GOVERNMENT GUIDANCE ON INTERPRETATION AND APPLICATION OF PRINCIPLE

Even when legislation makes reference to the precautionary principle or approach there is little or no governmental guidance on how and when to apply these concepts. The federal government has provided one guidance document on the application of precaution to science-based decision making in federal regulatory activities: *A framework for the application of precaution in science-based decision-making about risk*.³⁶ Although this framework is nearly 15 years old, it is reasonably thorough, and can provide decision-makers, courts, and tribunals some information about how to employ the precautionary principle. For instance, the framework explains that “precautionary measures”:

- ♦ Must be proportional to the potential severity of the risk being addressed and to society’s chosen level of protection;
- ♦ Should be consistent with measures taken in similar circumstances; and
- ♦ Should be cost-effective with the goal of generating an overall benefit for society at the lowest possible cost.³⁷

The framework also clarifies that where more than one precautionary measure meets these requirements, the least trade-restrictive measure should be chosen for application.³⁸

It bears noting that this framework has never been used by the courts or tribunals when interpreting or applying the precautionary principle. Further, it is not known how frequently decision-makers have applied the framework when assessing project approvals or permits that pose risk of serious or irreversible damage to the environment.

³⁵ ESA s 11(1). See also s 18(1).

³⁶ Government of Canada, 2003. *A framework for the application of precaution in science-based decision making about risk*, online at: <http://www.pco-bcp.gc.ca/docs/information/publications/precaution/Precaution-eng.pdfn> [Government of Canada].

³⁷ Government of Canada, pg. 11-12.

³⁸ Government of Canada, pg. 13.

5 COURTS AND TRIBUNALS INTERPRET AND APPLY PRINCIPLE INCONSISTENTLY

Canadian courts and tribunals have interpreted and applied the precautionary principle when reviewing the decisions of administrative decision-makers. To this end, courts and tribunals have made determinations on whether decision-makers are required to apply the precautionary principle in certain contexts, and whether decision-makers have reasonably interpreted and applied the principle when making decisions. However, to date, our courts and tribunals have disagreed on virtually every aspect of the precautionary principle, including its purpose, its status at law, its applicability and its content.

5.1 PURPOSE OF THE PRINCIPLE

Some courts and tribunals have argued that the precautionary principle prevents decision-makers and governmental administrators from taking a laissez-faire approach to environmental management.³⁹ In *Centre québécois du droit de l'environnement v Canada (Ministre de l'Environnement)*, the Federal Court opined that “any sustainable development requires the adoption of government policies based on the precautionary principle, especially since administrative laissez-faire contributes, along with uncontrolled – and irresponsible – human activity, to the destruction of natural habitats and the loss of wildlife species.”⁴⁰

In *Erickson v Ontario (Director, Ministry of Environment)*,⁴¹ the Ontario Environmental Review Tribunal stated that the precautionary principle:

...is an important development in environmental decision-making in light of historical examples where environmental measures came too late. The precautionary principle does not act as a mandatory condition precedent to the adoption of environmental measures ... What the principle does is prevent decision-makers from using uncertainty as an excuse for inaction when it comes to threats of serious or irreversible damage.⁴²

Other administrative decision makers have adopted the view that the precautionary principle presents a potentially paralyzing, uncompromising, and unrealistic “zero tolerance” approach to environmental risk.⁴³ In *Towes v British Columbia (Director of Environmental Management)*,⁴⁴ the British Columbia Environmental Appeal Board determined that the precautionary principle

³⁹ *Centre québécois du droit de l'environnement v Canada (Ministre de l'Environnement)* 2015 CarswellNat 2343, 2015 CarswellNat 2720, 2015 FC 773 at para 76 [*Centre québécois*].

⁴⁰ *Centre québécois* at para 8.

⁴¹ *Erickson v Ontario (Director, Ministry of Environment)*, [2011] OERTD No 29 [*Erickson*].

⁴² *Erickson* at para 525.

⁴³ *Canadian Parks & Wilderness Society v. Canada (Minister of Canadian Heritage)*, 2003 FCA 197, [2003] FCJ No 703 (Fed C.A.), at paras 24 and 56 [*Canadian Parks & Wilderness Society*]; *Towes v British Columbia (Director, Environmental Management Act)*, [2015] BCEA No 25 at para 227 and 232 [*Towes*]; *Shawnigan Residents Assn. v. British Columbia (Director's Delegate, Environmental Management Act)*, 2017 BCSC 107 at para 108-111 [*Shawnigan*].

⁴⁴ *Towes*.

did not apply to the *Environmental Management Act*⁴⁵ because “the legislation cannot reasonably be read as excluding any risk to public natural resources or the environment...”⁴⁶

Where courts and tribunals conclude that the precautionary principle is overly rigid or prohibitive to development, they have reached out to the concept of adaptive management as an alternative response to scientific uncertainty concerns.⁴⁷ In *Pembina Institute for Appropriate Development v Canada (Attorney General)*,⁴⁸ the Federal Court explained:

An approach that has developed in conjunction with the precautionary principle is that of ‘adaptive management.’ In *Canadian Parks & Wilderness Society v. Canada (Minister of Canadian Heritage)*, 2003 FCA 197, [2003] F.C.J. No. 703 (Fed. C.A.), at para. 24, Evans J.A. stated that ‘[t]he concept of ‘adaptive management’ responds to the difficulty, or impossibility, or predicting all the environmental consequences of a project on the basis of existing knowledge’ and indicated that adaptive management counters the potentially paralyzing effects of the precautionary principle... adaptive management permits projects with uncertain, yet potentially adverse environmental impacts to proceed based on flexible management strategies capable of adjusting to new information regarding adverse environmental impacts where sufficient information regarding those impacts and potential mitigation measures already exists” [emphasis added].⁴⁹

In other words, in certain cases, “adaptive management” measures have been incorporated as suitable cost-effective means for preventing serious or irreversible damage.

5.2 CURRENT STATUS OF THE PRINCIPLE

Courts and tribunals interpret *Spraytech*’s recognition of the principle differently depending on whether or not they want to apply or avoid the precautionary principle in their reasoning.

In *Morton v Canada (Minister of Fisheries and Oceans)*,⁵⁰ the Federal Court referred to the precautionary principle as an emerging principle of international law which informs the scope and application of legislation.⁵¹ The Federal Court concluded:

The precautionary principle recognizes, that as a matter of sound public policy the lack of complete scientific certainty should not be used as a basis for avoiding or postponing measures to protect the environment, as there are inherent limits in being able to predict environmental harm. Moving from the realm of public policy to the law, the precautionary principle is at a minimum, an established

⁴⁵ SBC 2003 Ch. 53.

⁴⁶ *Towes* at para 226.

⁴⁷ *Canadian Parks & Wilderness Society* at para 24.

⁴⁸ 2008 FC 302 [*Pembina*].

⁴⁹ *Pembina* at para 32.

⁵⁰ 2015 FC 575 [*Morton*].

⁵¹ *Morton* at para 41-42.

aspect of statutory interpretation, and arguably, has crystallized into a norm of customary international law and substantive domestic law.⁵²

Similarly, in *Centre québécois du droit de l'environnement v Canada (Ministre de l'Environnement)*,⁵³ the Federal Court reasoned that “the precautionary principle may now be a norm of customary international law, which justifies a dynamic and liberal interpretation of the provisions of the federal [Species at Risk Act]...”⁵⁴

Contrastingly, in *Burgoon v British Columbia (Regional Water Manager)*, the British Columbia Environmental Appeal Board determined that a Regional Water Manager was not required to apply the precautionary principle when deciding to issue a water license, in part, because there is no “evidence... that the precautionary principle routinely applies to decisions made under section 12 of the *Water Act*, nor is there evidence that there is ‘sufficient state practice’... to suggest that a regional water manager, or the Panel on appeal, must consider evidence of matters beyond that limited to site specific and application [of] specific concerns”⁵⁵ The absence of “sufficient state practice” means that the precautionary principle should not apply as it is not customary international law.

In *Towes v British Columbia (Director, Environmental Management Act)*, the British Columbia Environmental Appeal Board determined that the precautionary principle was inapplicable because in *Spraytech* the Supreme Court did not “conclude that the precautionary principle is such a widely accepted principle of customary international law that it should be presumed to inform the interpretation of Canadian environmental statutes.”⁵⁶ However, the relevant question for the British Columbia Environmental Appeal Board should have been whether the precautionary principle was customary law at that date rather than at the date of *Spraytech*.

5.3 WHEN THE PRINCIPLE CAN BE APPLIED

Courts and tribunals have found that administrative decision-makers are required to apply the precautionary principle in two situations:

- 1 The relevant statute references the precautionary principle, essentially instructing the decision-maker to apply the principle when making certain decisions; or
- 2 Even though the relevant statute does not reference the precautionary principle, it is “consistent with” or “embodies” the precautionary principle in spirit. In such situations, courts use the precautionary principle as a “principle of statutory interpretation”, effectively reading the principle into the relevant statute, as the Supreme Court did in *Spraytech*.

⁵² *Morton* at para 43.

⁵³ *Centre québécois*.

⁵⁴ *Centre québécois* at para 7.

⁵⁵ [2010] BCWLD 7558 at para 129 [Burgoon].

⁵⁶ *Towes* at para 228.

The issue remains that because the precautionary principle may be applied by courts and tribunals in contexts where the principle is not referenced in governing legislation, decision-makers and project proponents may be unaware that the precautionary principle can still apply.

5.3.1 PRINCIPLE REFERENCED IN LEGISLATION

As noted above, the precautionary principle is referenced in several pieces of domestic environmental legislation. However, due to variable definitions or lack of a definition of the principle, it is unclear what version of the precautionary principle will apply.

In *Canadian Transit Co v Canada (Minister of Transport)*, the federal Court considered whether responsible authorities under CEAA properly applied the precautionary principle when approving a proposed bridge across the Detroit River.⁵⁷ The responsible authorities determined that the bridge would not cause significant adverse environmental effects provided certain mitigation measures were implemented. Several groups, including the Sierra Club Canada, opposed the decision arguing that the responsible authorities improperly applied the precautionary principle by failing to specify feasible means of mitigating the adverse environments effects of road construction associated with the project on three endangered species. CEAA, s. 4(1)(a) states that a purpose of the Act is to ensure that projects are considered in a “careful and precautionary manner” before federal authorities take action in order to ensure that projects do not cause significant adverse environmental effects. The Federal Court determined that this language “enshrines the precautionary principle as an element of the environmental assessment regime” and, despite the lack of a definition of “precautionary manner” in CEAA, proceeded to apply the *Spraytech* definition of the precautionary principle.⁵⁸ The Court went on to uphold the approval concluding it was reasonable to apply adaptive management given the uncertainty about environmental impacts.⁵⁹

5.3.2 PRINCIPLE NOT REFERENCED IN LEGISLATION

Where the precautionary principle is not referenced in legislation, some courts and tribunals apply the principle regardless, provided the legislation embodies or is otherwise consistent with the principle.

In *Morton v Canada (Minister of Fisheries and Oceans)*, the Federal Court found that the *Fishery (General) Regulations*, passed pursuant to the federal *Fisheries Act*, while not explicitly referencing the precautionary principle, nevertheless embody the principle as formulated in *Spraytech*. Section 56(b) of the Regulations provides that the Minister may issue a licence for the release or transfer of fish if they do not have any disease or disease agent that “may be harmful to the protection and conservation of fish.” The Court held that the phrase “may be harmful” allowed for preventative action, namely the rejection of an application for a license to transfer diseased fish, where there was a lack of scientific certainty that harm would occur.⁶⁰ The Court determined that a fish transfer license condition that permitted the transfer of smolts which tested

⁵⁷ 2011 FC 515 [*Canadian Transit Co*].

⁵⁸ *Canadian Transit Co* at para 152.

⁵⁹ *Canadian Transit Co* at para 182.

⁶⁰ *Morton* at para 97.

positive for piscine reovirus (PVR) from a hatchery to a fish farm did not reflect the precautionary principle and because there is “a body of credible scientific study suggesting that disease agent PVR may be harmful to the protection and conservation of fish”, a lack of full scientific certainty should not be used as a reason for postponing measures to prevent harm to fish.⁶¹ The Court concluded that the license condition was invalid on other grounds, but also considered that the condition was invalid because license conditions could not derogate from section 56(b) and the precautionary principle it embodies.⁶²

In *Weir v British Columbia (Environmental Appeal Board)*,⁶³ Weir appealed the issuance of a permit to apply a federally registered pesticide in a forest district and Provincial Park. Weir’s appeal was dismissed at the Environmental Appeal Board, and Weir applied for a judicial review of the Board’s decision. Weir argued that in making its decision, the Board had inappropriately confined its analysis to considering site and application specific effects of the pesticide, contrary to the precautionary principle. The British Columbia Supreme Court held that although the *British Columbia Pesticide Control Act* does not expressly refer to the precautionary principle, “the precautionary principle, as articulated in [Spraytech], should help inform the process of statutory interpretation and judicial review.”⁶⁴ The Court determined that application of the precautionary principle permitted the Board to consider toxicity evidence beyond site and application specific concerns, and that the Board’s decision was unreasonable because it excluded such evidence.⁶⁵

In *Walker Aggregates Inc., Re*,⁶⁶ a quarry operator appealed the refusal of its application to develop a quarry in the Niagara Escarpment to a Joint Board of the Environmental Review Tribunal and the Ontario Municipal Board. Several community groups opposed the quarry operator’s appeal and argued that the precautionary principle should guide the Joint Board’s decision because the Ministry of Natural Resources and Forestry Statement of Environmental Values (“SEV”), which applied to the quarry proposal, states that in approving development applications the Ministry of Natural Resources and Forestry should exercise “caution in the face of uncertainty.”⁶⁷ The Joint Board held that while the SEV “does not go as far as some interpretations of the precautionary principle... it captures the essential elements and general intent of the precautionary principle referenced in [Spraytech] in that [the SEV] requires placing some priority on the protection of natural features, even when there is no absolute uncertainty regarding if, or in what manner, they may be affected by human actions.”⁶⁸ The Joint Board concluded that it was obligated to consider the precautionary principle when reviewing the potential impact of the quarry proposal.⁶⁹ The Joint Board ultimately approved the quarry

⁶¹ *Morton* at para 45.

⁶² *Morton* at para 43, 98 and 106.

⁶³ 2003 BCSC 1441 [*Weir*].

⁶⁴ *Weir* at para 32-28.

⁶⁵ *Weir* at para 38 and 48.

⁶⁶ [2012] OERTD No 29 [*Walker Aggregates*].

⁶⁷ *Walker Aggregates* at para 60-62.

⁶⁸ *Walker Aggregates* at para 66.

⁶⁹ *Walker Aggregates* at para 67.

proposal in modified form, stating that the proposal was “designed to minimize environmental risks through ongoing adaptive management measures.”⁷⁰

Similarly, in *Erickson v Ontario (Director, Ministry of Environment)*, the Ontario Environmental Review Board considered whether the precautionary principle applied in the interpretation of the *Environmental Protection Act*, s. 145.2.1(2), which governs appeals of Renewable Energy Approvals (“REA”). Under section 145.2.1(2) REA opponents must demonstrate that the renewable energy project will cause serious harm to human health or serious and irreversible harm to plant life, animal life or the natural environment. The Board concluded that the precautionary principle plays an important role in interpreting the renewable energy legislative scheme because the “precautionary approach” is referenced in the Ministry of the Environment and Climate Change’s SEV. However, even with the application of the precautionary principle, the Board decided that it could not revoke the REA where there was only a threat of serious harm since the test in section 145.2.1(2) requires appellants to prove that a renewable energy project “will cause” harm.⁷¹ While the Board considered the precautionary principle relevant to the legislative scheme due to its reference in the SEV, the Board did not permit the principle to override a clear legislative requirement.

These cases highlight instances where some courts and tribunals are willing to use the precautionary principle to interpret legislation that does not expressly contain the principle; however, other courts and tribunals have been unwilling to apply the principle where it is not expressly referenced in legislation.

In *Western Canada Wilderness Committee v British Columbia (Minister of Forests, South Island Forest District)*,⁷² a Ministry of Forests District Manager determined that a company’s Forest Development Plan (“FDP”) met the requirements of the *Forest Practices Code of British Columbia Act*, s. 41(1) in relation to the endangered spotted owl in a particular logging cutblock. Section 41(1) requires that FDPs “adequately manage and conserve the forest resource of the area to which it applies.”⁷³ The Western Canada Wilderness Committee (“WCWC”) argued that the District Manager failed to apply the precautionary principle in reaching her decision and that her decision was therefore patently unreasonable. The British Columbia Court of Appeal found that while the District Manager did not refer to the precautionary principle in her analysis she took “a cautious approach.”⁷⁴ The Court of Appeal concluded that although the District Manager “may not have given full effect to the precautionary principle... her decision reflects a degree of caution akin to that reflected in the precautionary principle. Since the precautionary principle was not incorporated in the Code, and since I am satisfied that s. 41(1)(b) does not preclude the approval of an FDP if there is an element of risk to a forest resource, I am unable to find that [the District Manager’s] failure to give full effect to the precautionary principle in her decision renders an otherwise reasonable decision, patently unreasonable.”⁷⁵

⁷⁰ *Walker Aggregates* at para 13.

⁷¹ *Erickson* at para 524.

⁷² 2003 BCCA 403 [*Western Canada Wilderness*].

⁷³ *Western Canadian Wilderness* at para 1.

⁷⁴ *Western Canada Wilderness* at para 79.

⁷⁵ *Western Canada Wilderness* at para 80.

The British Columbia Environmental Appeal Board has also “repeatedly held that the precautionary principle does not inform the interpretation of the permitting provisions in the [Environmental Management Act (EMA)]”, which does not reference the precautionary principle.⁷⁶ In *Towes*, the Board concluded that if the legislature had intended for decision-makers to apply the precautionary principle or use a precautionary approach in exercising their discretion to issue or amend permits under the EMA, the legislature could have expressly indicated that, but it did not.⁷⁷ Instead, the Board has “consistently held that a ‘cautious’ approach should be adopted in assessing applications to emit waste under the EMA.”⁷⁸

Courts and tribunals are understandably reluctant to apply the precautionary principle in the absence of clear statutory authority or guidance from government to do so.

5.4 CONTENT OF PRINCIPLE

Since its decision in *Spraytech*, the Supreme Court has considered the precautionary principle once in *R v Castonguay Blasting Ltd.*⁷⁹ Castonguay Blasting Ltd. was charged under the Ontario *Environmental Protection Act* (“EPA”), s. 15(1) with failing to report the discharge of a contaminant, specifically, the discharge of fly-rock, into the natural environment.⁸⁰ In interpreting s. 15(1) the Supreme Court applied the precautionary principle, despite the fact that the EPA does not refer to the principle. The Supreme Court held that s. 15(1) is consistent with the precautionary principle because it “gives effect to the concerns underlying the precautionary principle by ensuring that the Ministry of the Environment and Climate Change is notified and has the ability to respond once there has been a discharge of a contaminant out of the normal course of events, without waiting for proof that the natural environment has, in fact, been impaired.”⁸¹

Although in *Castonguay* the Supreme Court references the *Spraytech* formulation of the precautionary principle which requires as a condition precedent to its application the presence of scientific uncertainty, the Court proceeded to apply the principle to impacts associated with fly-rock (impacts completely absent scientific uncertainty). In other words, the Supreme Court applied the Bergen formulation of the precautionary principle in *Castonguay* even though one of the conditions precedent was clearly absent.

Several courts have complained that the precautionary principle’s content is too vague to be readily or reliably applied. In *Walker Aggregates Inc., Re the Joint Board* stated “that there is no single version of the precautionary principle and it can be applied in many ways.”⁸² In *Towes* the British Columbia Environmental Appeal Board noted that “the precautionary principle and precautionary approach have each been defined in more than one way in different international treaties and Canadian statutes, and therefore, it is unclear which definition or version would

⁷⁶ *Towes* at para 225.

⁷⁷ *Towes* at para 225.

⁷⁸ *Towes* at para 225.

⁷⁹ *R v Castonguay Blasting Ltd.*, 2013 SCC 52 [*Castonguay*].

⁸⁰ *Castonguay* at para 4, 7.

⁸¹ *Castonguay* at para 20.

⁸² *Walker Aggregates* at para 63.

apply” in a statute that does not expressly reference the precautionary principle.⁸³ The Board commented that “it is difficult to determine how statutory decision-makers would apply these concepts or approaches without a statutory definition... or a consistent legal meaning in other statutes.”⁸⁴

In *Burgoon*, the British Columbia Environmental Appeal Board also found that the meaning of the precautionary principle is uncertain. The Board highlighted how many legislative definitions of the precautionary principle differ from the formulation outlined in *Spraytech*. The Board concluded:

There appears to be more than one possible meaning of the ‘precautionary principle’ or ‘precautionary approach.’ Some sources expressly contemplate cost effective precautionary measures when full scientific proof is lacking, while others are silent on the role of economic considerations. Consequently, even if one accepts that the precautionary principle should be applied in this appeal, it is uncertain what version of the principle would apply for the purpose of interpreting the *Water Act*. In the absence of clear statutory direction regarding the applicability and meaning of the precautionary principle, it is difficult to determine how this principle should be applied to the appeal in question.⁸⁵

While some courts have questioned whether the precautionary principle has the same meaning as the precautionary approach, other courts have determined that they are one and the same. In *Erickson v Ontario (Director, Ministry of Environment)*, the Ontario Environmental Review Board concluded that “[i]n this case, it is unnecessary to determine whether there is a material difference between the precautionary ‘principle’ cited in *Spraytech* and the [precautionary approach cited in the Ministry of the Environment’s Statement of Environmental Values]” and referred to both the precautionary principle and approach as the “precautionary principle.”⁸⁶

In contrast, the Nunavut Impact Review Board (“NIRB”) uses different versions of the precautionary principle in different situations. In its Revised Final Hearing Report on the Sabina Gold & Silver Corp. Black River Gold Mine Project,⁸⁷ the NIRB stated that there are more protective and less protective versions of the precautionary principle and that the more protective version of the principle may apply in certain circumstances. In determining whether to apply a more stringent or protective version of the precautionary principle to the assessment of potential effects on specific ecosystem and socioeconomic components, the NIRB considered:

1 The seriousness or irreversibility of potential impacts posed by the project

⁸³ *Towes* at para 226.

⁸⁴ *Towes* at para 226.

⁸⁵ *Burgoon* at para 132.

⁸⁶ *Erickson* at para 523.

⁸⁷ Revised Final Hearing Report, Black River Gold Mine Project, Sabina Gold & Silver Corp NIRB File No 12MN036, Nunavut Impact Review Board (July, 2017) [Revised Final Hearing Report].

- 2 The likelihood potential impacts could be mitigated or reversed, and
- 3 Public concern.⁸⁸

The NIRB concluded that when a higher standard of precautionary principle is suitable, the NIRB requires:

- ◆ Evidence of positive and preventative actions that will be taken to ensure that where there is potential for serious risk of environmental degradation, and high levels of uncertainty, the measures proposed to limit or reduce the potential for adverse impacts are highly protective and do not require evidence of impact before they are triggered
- ◆ Proponents to incorporate a “safety margin” into monitoring and mitigation measures, and
- ◆ The design of adaptive responses that are proportional to the environmental risk.⁸⁹

6 THE PROBLEM WITH CANADA'S APPROACH TO THE PRINCIPLE

Uncertainty about the interpretation and application of the precautionary principle decreases the principle's effectiveness. If vague and malleable formulations of the precautionary principle persist, decision-makers, courts, and tribunals may understandably struggle to determine when and how they are required to apply the precautionary principle, thus potentially resulting in its disuse.

The *Spraytech* formulation of the principle guides decision-makers to consider cost effective measures where there is a threat of serious or irreversible harm in the context of a lack of full scientific certainty. Where the principle is not defined with conditions precedent, it can theoretically be raised in any development context, regardless of whether there is a likely threat of environmental risk and regardless of whether that risk is scientifically certain. In such circumstances, the precautionary principle then runs the risk of being dismissed as an unrealistic “zero-tolerance” or “zero harm” test.

To ensure that the precautionary principle remains a predictable and useful decision-making tool in Canada, the principle should be carefully defined in legislation. Expectations on how and when the principle should be applied by decision-makers and by courts and tribunals must be clarified in statutes, regulations and applicable guidance documents.

⁸⁸ Revised Final Hearing Report at pg. 65.

⁸⁹ Revised Final Hearing Report at pg. 66.

There is need for a specific consistent framework that sets out:

- ♦ Who can or must apply the precautionary principle, and whether legislation that does not expressly reference the precautionary principle can still require decision-makers to apply the principle to environmental decision, making;
- ♦ When to apply the precautionary principle, including what conditions precedent must be met before the principle can be engaged; and
- ♦ How to apply the principle.

7 BUILDING A BETTER FRAMEWORK: LESSONS FROM INTERNATIONAL JURISDICTIONS

Canada's confusing approach to the precautionary principle stands in contrast to approaches taken by other countries. Courts and Australia and New Zealand for example have developed detailed tests for when and how to apply the precautionary principle, and when and how the concerns raised by the principle can be met by adaptive management. Canadian policy makers should consider these cases in order to develop a rigorous and practical framework for applying the precautionary principle in Canada.

In *Telstra Corporation Limited v Hornsby Shire Council*,⁹⁰ the Land and Environment Court of New South Wales in Australia set out a step-wise test for applying the precautionary principle. Telstra, a telecommunications carrier, proposed erecting a facility in the suburb of Cheltenham to bring greater mobile telephone coverage to the Cheltenham area. The Cheltenham and Hornsby Shire Council refused the development of the proposal, arguing that the proposed facility would emit electromagnetic radiation that could negatively impact human health and safety. Telstra appealed to the Court seeking consent for the proposal, and the Council and select residents of Cheltenham opposed Telstra's appeal. The Court concluded that the proposed facility did not risk serious or irreversible harm to the environment or to human health because the electromagnetic radiation emitted by the facility was negligible.⁹¹ Accordingly, there was no basis on which the precautionary principle could be applied. Nonetheless, the Court went on to set out a detailed procedure for applying the principle.

The Court explained the purpose and scope of the precautionary principle, stating that "the precautionary principle permits the taking of preventative measures without having to wait until the reality and seriousness of the threats become fully known."⁹² A zero risk precautionary principle is inappropriate and the precautionary principle "should not be used to try to avoid all risks" because some risks are acceptable.⁹³ The Court went on to find that the precautionary principle "does not necessarily prohibit development."⁹⁴

⁹⁰ [2006] NSWLEC 133 [*Telstra*].

⁹¹ *Telstra* at para 184.

⁹² *Telstra* at para 156.

⁹³ *Telstra* at para 157 – 158.

⁹⁴ *Telstra* at para 179-181.

The Court also held that the precautionary principle can only be engaged where the two conditions precedents are met: (i) a threat of serious or irreversible harm; and (ii) a lack of full scientific certainty.⁹⁵ Where only one of the conditions is met, the precautionary principle does not apply.⁹⁶ The Court outlined several factors to consider when determining whether there is a threat of serious or irreversible harm or a lack of scientific certainty. Specifically, the Court stated that when determining whether a threat of serious or irreversible harm is present, the decision-maker should consider:

- ◆ The spatial scale of the threat
- ◆ The magnitude of potential impacts arising from the threat
- ◆ The perceived value of the threatened environment
- ◆ The temporal scale of possible impacts in terms of timing and persistence of impact
- ◆ The complexity and connectivity of impacts
- ◆ The manageability of possible impacts (having regard to availability and acceptability of means)
- ◆ The level of public concern and the rationality of such concern based on the scientific or other evidentiary basis underpinning the concern, and
- ◆ The reversibility of possible impacts and if reversible, the time frame, difficulty, and expense associated with reversing possible impacts.⁹⁷

When determining whether there is a lack of scientific certainty, decision-makers should consider:

- ◆ The sufficiency of evidence that there might be a threat
- ◆ The level of uncertainty
- ◆ The kind of uncertainty, and
- ◆ The potential to reduce the uncertainty having regard to what is possible in principle, economically and within a reasonable time frame.⁹⁸

The Court when on determine that decision-makers should use a test of “reasonable scientific plausibility” to identify the level of scientific certainty in a given situation. Theoretical but scientifically credible risks may meet this test.⁹⁹ Decision-makers are also encouraged to take

⁹⁵ *Telstra* at para 127.

⁹⁶ *Telstra* at para 149.

⁹⁷ *Telstra* at para 131.

⁹⁸ *Telstra* at para 141.

⁹⁹ *Telstra* at para 148.

precautionary measures where possible risks are “adequately backed up by the scientific data available at the time” but where “the reality and extent of the risk have not been ‘fully’ demonstrated by conclusive scientific evidence.”¹⁰⁰

The Court described the response required from governments and decision-makers where the precautionary principle is engaged and how to determine the degree of precaution required in given situations:

The type and level of precautionary measures that will be appropriate will depend on the combined effect of the degree of seriousness and irreversibility of the threat and the degree of uncertainty... The more significant and the more uncertain the threat, the greater the degree of precaution required.¹⁰¹

Further, precautionary responses should be proportionate to the environmental risk. In other words, “measures should not go beyond what is appropriate and necessary to achieve the objectives in question.”¹⁰² Decision-makers should maintain a precautionary margin of error “until all the consequences of the decision to proceed with the development plan, programme or project are known. This allows for potential errors in risk assessment and cost-benefit analysis.”¹⁰³

The Court clarified that “a margin of error” can be achieved through the use of adaptive management plans.¹⁰⁴ However, not every adaptive management plan is appropriate for addressing the concerns raised by the precautionary principle. An adequate adaptive management plan must be able to “detect emerging adverse impacts and enable the appropriate regulatory authority to require them to be addressed if and when they emerg[e].”¹⁰⁵

In *Sustain Our Sounds Inc v the New Zealand Salmon Co*,¹⁰⁶ the Supreme Court of New Zealand elaborated on the approach for assessing the adequacy and appropriateness of adaptive management regimes in responding to scientific uncertainty. The Court, citing *Newcastle & Hunter Valley Speleological Society Inc v Upper Hunter Shire Council*,¹⁰⁷ stated that “adaptive management is not a ‘suck it and see’, trial and error approach to management, but is an iterative approach involving explicit testing of the achievement of defined goals.”¹⁰⁸

The purpose of adaptive management is to sufficiently reduce scientific uncertainty and set out a plan for managing any remaining environmental risk. If an adaptive management plan cannot sufficiently diminish environmental risk, the precautionary principle may still lead a decision-maker to prohibit the risk causing activity. The Court in *Sustain Our Sounds* held that there “must be an adequate evidential foundation to have reasonable assurance that the adaptive

¹⁰⁰ *Telstra* at 159.

¹⁰¹ *Telstra* at para 161.

¹⁰² *Telstra* at para 166-167.

¹⁰³ *Telstra* at para 162.

¹⁰⁴ *Telstra* at para 162-164.

¹⁰⁵ *Telstra* at para 165.

¹⁰⁶ [2014] NZSC 40 [*Sustain Our Sounds*].

¹⁰⁷ [2010] NSWLEC 48 at para 184.

¹⁰⁸ *Sustain Our Sounds* at para 121.

management approach will achieve its goals of sufficiently reducing uncertainty and adequately managing any remaining risk.”¹⁰⁹ An adequate adaptive management approach must include:

- ◆ Good baseline information about the receiving environment
- ◆ Conditions that provide for effective monitoring of adverse effects using appropriate indicators
- ◆ Thresholds set to trigger remedial action before effects become overly damaging, and
- ◆ Procedures that ensure that effects that might arise can be remedied before they become irreversible.¹¹⁰

8 CONCLUSION

The precautionary principle has been applied inconsistently or misapplied in Canadian legislation and jurisprudence alike. In this regard, the principle is frequently poorly defined in legislation or not defined at all. The precautionary approach is often incorporated into legislation instead of the precautionary principle. It is not clear what certain formulations of the precautionary principle or the precautionary approach require of proponents or decision-makers. There is little to no government guidance on the interpretation and application of the precautionary principle to help remedy this uncertainty.

Courts and tribunals, for their part, disagree on virtually every aspect of the precautionary principle, including its purpose, its status at law, its applicability and its content. Consequently, certain courts and tribunals have shied away from applying the precautionary principle. The precautionary principle may ultimately fall into disuse if it is not interpreted and applied in a more consistent and rigorous fashion moving forward.

A clear framework, (preferably in legislation), is needed for interpreting and applying the precautionary principle, to ensure that the principle remains a useful tool for environmental decision-making. Such a framework must put forward a clear definition of the precautionary principle, and lay out when and how decision-makers must apply the principle. The framework should also set the role of adaptive management in the context of applying the precautionary principle.

In our view, cases from international jurisdictions that have recognized or adopted the precautionary principle, including *Telstra* and *Sustain Our Sounds*, lay the groundwork for such a framework. These cases should be consulted by policy makers and legislative drafters seeking to incorporate the precautionary principle and adaptive management into environmental legislation.

An overall framework for the interpretation and application of the precautionary principle in Canada would:

¹⁰⁹ *Sustain Our Sounds* at para 125.

¹¹⁰ *Sustain Our Sounds* at para 133.

- ◆ Help to overcome the misconception that the precautionary principle is a “zero risk” approach to environmental risk
- ◆ Allow developers or proponents to build the precautionary principle into their planning processes
- ◆ Allow developers or proponents to properly design and incorporate adaptive management into their planning processes
- ◆ Provide the public with a clear statement of principle that can be applied consistently to protect against unacceptable environmental risk
- ◆ Enable decision-makers to predictably and transparently apply the principle to address and reduce environmental risk in circumstances where there is threat of serious or irreversible damage, and
- ◆ assist courts in determining whether the principle has been appropriately applied so that courts do not shy away from applying the principle due to its “vagueness.”

The need for a clear framework for interpreting and applying the precautionary principle in Canada is particularly important and timely as the federal government, and other provincial and territorial governments are currently reviewing and crafting amended or new environmental legislation as well as developing jurisdictional and national policy responses to climate change. Legislative guidance is needed to ensure that the precautionary principle constitutes a useful addition to such new environmental legislation and climate change policies.

Charles (Chuck) J. Birchall, is a partner at Willms & Shier Environmental Lawyers LLP in Ottawa and certified as a Specialist in Environmental Law by the law Society of Upper Canada. Chuck may be reached at 613-761-2424 or by e-mail at cbirchall@willmsshier.com.

Julie Abouchar, is a partner at Willms & Shier Environmental Lawyers LLP in Toronto and certified as a Specialist in Environmental Law and in Indigenous Legal Issues by the Law Society of Upper Canada. Julie recently co-authored Ontario Water Law, published by Canada Law Book. Julie may be reached at 416-862-4836 or by e-mail at jabouchar@willmsshier.com.

John Donihee, is one of Canada’s foremost experts in environmental, regulatory, administrative and Aboriginal law in Canada’s North and a member of Willms & Shier’s Northern Team. John’s particular focus is on land claims implementation and modern treaties in the North. He can be reached at 613-217-8521 or by e-mail at jdonihee@willmsshier.com.

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