



International Environmental and Resources Law Joint Newsletter

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Message from the Chairs

Charles J. Birchall, Tim Clare, Amanda Cornwall, J. Brett Grosko, and Jennifer Wills
This newsletter is the product of an ambitious and unprecedented collaboration among the American Bar Association's International Environmental and Resources Law Committee, the Canadian Bar Association's National Environmental, Energy and Resources Section, Australia's National Environmental Law Association (NELA) and the United Kingdom Environmental Law Association (UKELA).

As the world's economies have become more tightly knitted together, we have seen the globalization of environmental law unfold. As the law professors Tseming Yang and Robert Percival have noted, this process entails the blurring of domestic and international environmental law and the borrowing and cross-fertilization of approaches to environmental regulation on a host of issues. The wide acceptance of environmental impact assessment requirements is but one example. Currently, new extractive technologies are posing similar challenges for decision makers all around the globe. Accordingly, we expected that, given the similarities in our legal systems and the friendships among our countries, it would not be surprising to find environmental law issues of common interest. In fact, we discovered that a single publication would be insufficient to begin to explore topics of common interest. We have therefore decided to release two joint issues.

In the first of those two issues, we address trade agreements and the environment; marine spatial planning; freshwater conservation; issues arising from wind energy projects impacts upon protected birds; and chemicals regulation. Our second issue, coming soon, will focus on domestic law and policy developments around unconventional oil and gas exploration and development activities.

In our first article, "[Trade Agreements and Environmental Protection—Compatible, Irreconcilable or Somewhere In Between?](#)", Jon R. Johnson (Toronto, Canada) helps us understand how domestic environmental rules can run afoul of a country's commitments under trade agreements. Provided a measure really is aimed at protecting the environment (rather than giving the "home team" an advantage in the guise of protecting the environment) and as long as it is done in the least trade restrictive way possible, it will likely be upheld. Measures to reduce greenhouse gas emissions are cited as an interesting example.

In the second article, "[Is Australia Still a World Leader in Oceans Management?](#)", Amanda Cornwall critiques Australian marine resources management, and provides a comparison with the approaches of other countries. The article suggests that while Australia has very strong nationally-mandated protection for its vast marine reserve areas, the way it manages resources in the rest of its marine waters falls well short of the emerging international practice of integrated marine spatial planning.

Next, in "[Water, Water Everywhere, Nor Any Drop to Drink](#)," Paul Davies, Michael Green and Charlotte Cook (Macfarlanes LLP) look at the growing complexity of managing water in the United Kingdom, in terms of maintaining supply and dealing with the drought and flooding associated with climate change. They predict that more regulation—and corresponding friction—are inevitable if the United Kingdom is to enjoy the benefits of sound water management going forward.

In "[Wind Energy Development and the Protection of Migratory Birds](#)," John Cossa analyzes how the Migratory Bird Treaty Act's prohibition on the "taking" of birds has, in numerous instances, been used to bring charges against businesses whose industrial activities lead to bird deaths. The MBTA should thus be taken into consideration in the planning of wind power projects to significantly limit bird mortality and the prospect of legal action.

Finally, in "[Canadian Regulation of Toxic Substances: Model or Muddle?](#)", Joe Castrilli (Canadian Environmental Law Association) provides his assessment of the relative strengths and weaknesses in Canada's approach to chemical regulation. He concludes that regulation could be significantly improved by changes to the implementation of risk assessment and risk management processes.

We hope that you find these articles stimulating and that the ideas advanced by our authors will help inform discussion in all of our members' countries. We would like to express our gratitude to Peter Murtha, co-editor of ABA's International Environmental and Resources Law Committee Newsletter, Katia Opalka, executive member, National Environmental Energy and Resources Law Section, Canadian Bar Association, and Tim Clare of UKELA who collaborated on the editing of this joint issue. Please contact Tim at tclare@environcorp.com, if you would like to contribute to future issues of our newsletter.

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Trade Agreements and Environmental Protection – Compatible, Irreconcilable or Somewhere In Between?

Jon R. Johnson

Trade agreements such as the *Agreement Establishing the World Trade Organization* (WTO Agreement), the *North American Free Trade Agreement* (NAFTA) and the many other bilateral and regional free trade agreements that now exist raise significant concerns for advocates of effective measures to protect the environment. Tension exists between these agreements and environmental protection programs because measures to protect the environment prohibit, restrict or impose costs on environmentally harmful activities and subsidize activities that benefit the environment. On the other hand, trade agreements limit the ability of governments to impose prohibitions or restrictions or to impose costs or to subsidize. The purpose of this article is to describe how this tension arises and to consider whether trade agreements impede the adoption by governments of effective measures to protect the environment in any fundamental way.

Introduction

The WTO Agreement, a multilateral trade agreement to which 158 countries and customs territories are members, is an umbrella agreement with annexes setting out agreements (WTO agreements) covering trade in goods and services, intellectual property and, for certain members, government procurement. The WTO Agreement also establishes a comprehensive dispute settlement mechanism.

There are many free trade agreements currently in existence, of which NAFTA is currently the largest. Each member country in a free trade area must eliminate trade restrictions such as tariffs on substantially all goods traded with other members but remains free to adopt its own policies as regards goods of non-members. Free trade agreements frequently repeat obligations in the WTO agreements, sometimes strengthen them and occasionally derogate from them.

This article will focus on the WTO agreements that contain provisions most likely to create conflicts with measures adopted to protect the environment. These agreements are the *General Agreement on Tariffs and Trade 1994* (GATT 1994), the *Agreement on Trade-Related Investment Measures* (TRIMs Agreement), the *Agreement on Technical Barriers to Trade* (TBT Agreement), the *Agreement on Sanitary and Phytosanitary Measures* (SPS Agreement) and the *Agreement on Subsidies and Countervailing Measures* (SCM Agreement).

Objectives of Trade Agreements

The overall objective of trade agreements is to reduce barriers to trade so that trade patterns are determined by market forces rather than by government mandate. There are a number of means by which this objective is achieved.

Reduction or Elimination of Tariffs

Tariffs are the most obvious government-mandated impediment to trade in goods. Tariff reduction through successive rounds of negotiations under the original *General Agreement on Tariffs and Trade* (GATT) has resulted in a significant reduction in the tariffs of all member countries. Border taxes such as duties can be no higher than the levels to which a member has agreed to be bound. Certain “border tax adjustments” (such as amounts equal to domestic sales taxes being levied on imports) are permitted. With some exceptions, free trade agreements such as NAFTA eliminate tariffs on qualifying goods traded among the member countries of the free trade area.

While tariff reduction or elimination is central to the overall objective of trade agreements, the environmental perspective may differ. The reduction or elimination of tariffs encourages greater expenditures of fuels to move goods longer distances and



arguably frustrates incentives to encourage people to buy locally made products.

Prohibition of Import and Export Restrictions

Subject to some exceptions, Article XI of GATT 1994 prohibits import and export restrictions.

Non-Discrimination Provisions

GATT 1994 establishes two fundamental non-discrimination principles.

The first is the most-favoured-nation (MFN) principle (Article I) that requires that any advantage such as a tariff reduction accorded to goods from any country be immediately accorded to goods of all member countries.

The second is the national treatment principle that requires that member countries not discriminate against goods imported from other member countries in the application of internal taxes (Article III:2) and that such goods receive treatment under government rules that is no less favourable than the treatment received by locally produced goods (Article III:4). The national treatment principle requires equality of competitive opportunities as between imported and domestic goods so that market forces rather than government fiat determine which goods are purchased by consumers and producers. The TRIMs Agreement reinforces the national treatment principle by listing measures that violate Article III:4, including requirements that an enterprise use domestic goods in order to obtain an advantage such as a subsidy.

Exceptions in GATT 1994

Article XX of GATT 1994 sets out exceptions, two of which are relevant to environmental measures. Article XX(b) provides an exception for measures to protect human, animal and plant life or health. Article XX(g) provides an exception for measures relating to the conservation of exhaustible natural resources provided that they are brought into effect with domestic conservation measures. A WTO panel first determines whether the measure falls within the policy objective of the exception (“protection of human, animal and plant life or health” or “conservation of exhaustible natural resources”). The panel then determines whether the measure satisfies the qualifying words in the exception, such as “necessary” or “relating to”. The panel finally determines whether the measure satisfies the convoluted language of the preamble to Article XX, which in essence requires that the measure not be arbitrarily applied or constitute a disguised restriction on trade.

Technical Barriers to Trade

The trade agreements have an overall objective of placing limits on non-tariff barriers. Technical regulations can be effective non-tariff barriers by imposing requirements that imported goods have difficulty meeting. The TBT Agreement requires that technical regulations and standards not discriminate between domestic and imported goods and not constitute disguised restrictions on trade. So long as environmental measures satisfy these requirements, there should be no issue of their complying with TBT requirements.

Sanitary and Phytosanitary Measures

The SPS Agreement sets out requirements respecting certain types of measures relating to the protection of human, animal and plant life or health. The key requirement in the SPS Agreement from an environmental perspective is that the measures that it covers have a scientific basis. This requirement conflicts with the precautionary principle.

Subsidies

From a trade perspective, subsidies are objectionable because subsidies create market-distorting advantages in favour of subsidized goods over goods that are not subsidized. The SCM Agreement sets out rules that prohibit certain subsidies outright and provides that certain other subsidies are actionable. The SCM Agreement also sets out a comprehensive code of conduct that must be followed by member countries in imposing countervailing duties to offset the effect of subsidies.

Environmental Measures and the Trade Agreements

Protection of the environment by governments necessitates the adoption of measures that restrict activities or impose costs such as by requiring that products comply with certain standards, or that encourage certain activities deemed environmentally beneficial through government incentives. The objective of the trade agreements is not to prevent the adoption of environmental measures. There are many provisions in the trade agreements that recognize the need for environmental protection. However, because of the essential conflict between the objective of disciplining government restrictions (trade agreements) and imposing them (environmental protection), environmental measures sometimes conflict with the trade agreements.

Banning or Regulating Products

Governments routinely ban or restrict the use of products that are considered to be dangerous or that have the potential to cause harm. Canada prohibits or restricts the importation of many products ranging from firearms, illegal drugs and dangerous or hazardous products. Import prohibitions are prohibited under Article XI:1 of GATT 1994. However, the exception in Article XX(b) for measures necessary for the protection of human, animal or plant life or health covers most measures that ban or restrict the importation of dangerous or hazardous products.

Product restrictions are sometimes challenged in WTO cases. In *European Communities—Measures Affecting Asbestos and Products Containing Asbestos* DS135 (EC—Asbestos), in which Canada challenged a French ban on asbestos-containing products, the Appellate Body upheld a panel finding that the exception in Article XX(b) applied and also found that the asbestos-containing Canadian products were not “like” the French products that did not contain asbestos and that there was no inconsistency with the requirement in Article III:4 of GATT 1994 that imported products receive no less favourable treatment than “like” domestic products. In this case the challenge was wholly unsuccessful.

Some product restrictions have been successfully challenged in WTO cases. In *United States—Standards for Reformulated and Conventional Gasoline* DS2 (U.S.—Reformulated Gasoline), the United States maintained certain specifications under the Clean Air Act for gasoline (reformulated gasoline) sold in “ozone ‘non-attainment’ areas” (i.e., major urban centres). The United States relied on exception in Article XX(g) to justify the measure as regards imports. The panel found and the Appellate Body confirmed that clean air is an exhaustible natural resource and that the policy objective of the measure fell within the exhaustible natural resources exception in Article XX(g). The Appellate Body confirmed that the measure satisfied the “relating to” language in Article XX(g) because the measure related to the conservation of exhaustible natural resources. However, the Appellate Body found that the application of the measure was discriminatory because the methodology for exporting countries to establish that their exports met the Clean Air Act requirements was rigid while domestic producers had flexibility as to the manner in which the requirements were satisfied. The measure itself satisfied WTO requirements but it was the manner in which it was applied that was inconsistent with trade rules. The United States modified the program to conform to the Appellate Body’s requirements.

The “scientific basis” requirement in the SPS Agreement was applied in *European Communities—EC Measures Concerning Meat and Meat Products* DS26 (EC—Hormones). Canada and the United States challenged a European Union ban on meat and meat products from animals treated with growth hormones. The Appellate Body confirmed that the ban did not have a scientific basis and rejected an argument that the precautionary principle should prevail over the requirements of the SPS Agreement on the grounds that the precautionary principle was part of customary international law. In this case, absent the development of a creditable scientific basis for the measure, the only way in which the measure could be brought into conformity with WTO requirements was to withdraw it.

Product Restrictions Based on Process

Product restrictions directed at the manner in which a product is produced as opposed to the product itself create more potential inconsistencies with the trade agreements. The environmental motivation for imposing restrictions based on process is to encourage the production of products using environmentally friendly processes and to discourage



the production of products using environmentally damaging processes.

The MFN and national treatment provisions do not permit discriminating between products based on the manner in which they are produced. The basis upon which discrimination is permitted is that the products are not “like”. Whether products are “like” is based on the physical characteristics of the products themselves and not on the manner in which they are produced. Discrimination between “like” products based on the manner in which they are produced, whether as between products from different countries or as between domestic products and imported products, is not permitted under the MFN or national treatment principles unless an exception in Article XX applies.

In *United States—Import Prohibition of Certain Shrimp and Shrimp Products* DS58 (U.S.—Shrimp), several countries challenged U.S. measures prohibiting the importation of shrimp and shrimp products harvested in a manner that did not protect sea turtles. The United States relied on the exhaustible natural resources exception in Article XX(g) to justify the measure. The Appellate Body found that the policy objective of Article XX(g) was satisfied because the exception covers both living resources (sea turtles) as well as non-living resources. In reaching this conclusion, the Appellate Body referred to the 1982 *United Nations Convention on the Law of the Sea*, which defines the jurisdictional rights of coastal states in their exclusive economic zones, to “natural resources both living and non-living”. The Appellate Body also found that the measure at issue satisfied the “relating to” qualifying language in Article XX(g). However, the Appellate Body found that the application of the measure did not satisfy the preamble of Article XX because it was both discriminatory and arbitrary. The measure was discriminatory because it required that exporting countries have the same regulatory regime as the United States for protecting sea turtles and did not take into account that conditions in these countries may be different and that different regulatory approaches in those countries may be more appropriate. The measure was arbitrary because the United States had negotiated with some exporting countries respecting their programs to protect turtles, while with imports from other countries the United States simply applied the requirement without any negotiation. The United States ultimately modified its measures to conform to the requirements of the Appellate Body. The measures survived the challenge subject only to modification.

Carbon Taxes and Cap-and-Trade Regimes

Global warming has been identified as a major environmental concern and has been linked to carbon dioxide emissions resulting from the burning of fossil fuels. The two means advocated for controlling carbon dioxide emissions are carbon taxes and cap-and-trade regimes. A carbon tax is a tax levied on fuels (coal, natural gas and oil products such as gasoline, diesel and home heating oil) that produce carbon dioxide emissions when consumed. Under a cap-and-trade regime, government regulators impose a limit or “cap” on the amount of carbon dioxide that an industrial producer can emit. Producers can earn credits by investing in technology that lowers emissions below their caps. These credits can be sold to producers who have difficulty staying within their caps.

The trade agreements do not affect the ability of governments to levy carbon taxes or impose cap-and-trade regimes on domestic producers. However, these measures impose costs on domestic producers that may not be imposed on producers in other countries. Imports from those countries will have a commercial advantage over like domestic products because the producers of the imported products are not subject to these costs. The commercial advantage enjoyed by imports from countries without carbon taxes or cap-and-trade regimes may be termed as “carbon leakage”.

Taxes on Imports to Offset Carbon Leakage

The integrity of a carbon tax regime can be preserved by offsetting the commercial advantage of imports from countries that do not impose carbon taxes by imposing a border tax. However, Article III:2 of GATT 1994 requires that products imported from other member countries not be subject to internal taxes or other charges in excess of those applied to like domestic products. There is some latitude to impose taxes on imported products that are the equivalent of domestic taxes on inputs used in producing domestic products. However, as a domestic carbon tax would most likely be considered a tax on producers of fuels rather than on the products resulting from the consumption of fuels, the equivalency required by Article III:2 would be difficult to establish. If equivalency was not established, the carbon tax would be inconsistent with Article III:2 of GATT 1994 unless one of the exceptions in Article XX of GATT 1994 applied.



Border taxes also raise issues under the MFN requirements of Article I of GATT 1994 because offsetting border taxes would only be applied to products imported from countries without carbon control regimes. Article I does not permit distinguishing between imports based on whether or not the exporting country maintains a carbon control regime unless one of the exceptions in Article XX of GATT 1994 applies. The only distinction permitted under Article I is whether or not the products are “like”.

Offsetting Carbon Leakage with Cap-and-Trade Regimes

Carbon leakage in a cap-and-trade regime can be prevented by requiring that importers of products from countries without carbon control regimes purchase emission allowances in order to sell their products in the domestic market and thereby eliminate the cost advantage enjoyed by foreign producers not being subject to a cap-and-trade regime. As noted above, Article III:4 of GATT 1994 requires equality of competitive opportunities as between imported and domestic products. A WTO panel considering such a requirement would examine the competitive effects of the allowance requirement and whether the allowance requirement put the imported products at a competitive disadvantage in the marketplace to like domestic products. If the product being imported was a product for which domestic producers were required to hold allowances, the comparison of competitive opportunities would be feasible. However, if the only persons required to hold allowances were producers of inputs for domestic like products or of fuels consumed in the production of the domestic like product, the comparison of competitive opportunities would be much more difficult. The difficulties in comparing competitive opportunities would be compounded if the importing country granted free allowances when its cap-and-trade regime went into effect.

There would also be inconsistencies with the MFN requirements of Article I of GATT 1994 as the allowance requirement would only be applied to products imported from countries without carbon control regimes and not to the products of all members.

If the allowance requirement did not comply with Article III:4 or Article I of GATT 1994, one of the exceptions in Article XX of GATT 1994 would have to apply in order for the requirement to be WTO-consistent.

Application of Exceptions to Carbon Leakage Measures

If the border tax imposed in respect of a carbon tax regime or a requirement to purchase allowance in a cap-and-trade regime is inconsistent with the MFN or the national treatment provisions in Articles I and III of GATT 1994, the measure would have to be justified under the human, animal or plant life or health exception in Article XX(b) or the conservation of exhaustible natural resources exception in Article XX(g).

The application of Article XX(b) to banning or restricting the distribution of hazardous or dangerous products is easy to justify because the connection to the danger to life or health is readily apparent. The high standard imposed by the qualifier “necessary” in the exception would be much more difficult with a measure to offset carbon leakage when human, animal or plant life or health is not subject to any immediate danger. The risks presented by global warming evolve only over a long period of time and are not readily predictable. There are some who take issue with the proposition that global warming is occurring or, if it is, that it poses a significant threat. However, the fact that many countries have signed the *Kyoto Protocol to the United Nations Framework Convention on Climate Change* is evidence that the threat of global warming is widely recognized. The Appellate Body does take international conventions into account when interpreting WTO provisions, as occurred in *U.S.—Shrimp* with its reliance upon the *1982 United Nations Convention on the Law of the Sea* in its conclusion that natural resources included living resources.

The application of the exception in Article XX(g) is more promising. In *U.S.—Reformulated Gasoline*, the Appellate Body considered that clean air was an exhaustible natural resource. However, the measure in that case was directed at the quality of U.S. air while measures to prevent carbon leakage are directed at emissions occurring in other countries. A country defending such a measure would have to argue that air is a global natural resource and that air free of levels of carbon dioxide that cause or exacerbate global warming is an exhaustible natural resource. While success is by no means assured, this argument is creditable and would be assisted by the fact that the country imposing the carbon leakage measure would clearly satisfy the requirement that the measure is being taken in conjunction with domestic restrictions.



Subsidies

Governments use subsidies to encourage environmentally friendly activity, such as adopting technology that reduces harmful environmental effects or using processes that are sustainable or using renewable rather than non-renewable resources. Most subsidies do not attract any attention from the trade agreements and governments have considerable flexibility in adopting programs based on subsidies. However, there are some problems with subsidies under the trade agreements that policy makers should keep in mind.

Subsidies and the Trade Agreements

Article 1.1 of the SCM Agreement provides that a subsidy exists if a government makes a financial contribution that confers a benefit. A financial contribution can take the form of direct transfers of funds (e.g., grants, loans, loan guarantees, and equity infusions), tax concessions, and the provision by the government of goods or services at below market prices or the purchase by the government of goods at prices above market prices.

There are three categories of subsidy that raise issues under the SCM Agreement: prohibited subsidies; actionable subsidies; and countervailable subsidies.

If a subsidy is contingent on export performance or on the use of domestic over imported goods, the subsidy is prohibited regardless of whether it is “specific” and it must be withdrawn. The trade effects of a prohibited subsidy are irrelevant.

A subsidy must be “specific” in order to be actionable or subject to countervailing duties. A subsidy conferred only on certain industries or enterprises as opposed to being generally available is “specific”.

A subsidy that is specific is actionable if it injures the domestic industry of another member or seriously prejudices the interests of another member. Unlike with a prohibited subsidy, the trade effects of the subsidy are relevant. For example, a subsidy to domestic producers that results in import displacement through consumers switching from imports to cheaper domestic goods could be actionable. There have been very few WTO cases challenging subsidies as actionable and the risk that a subsidy granted to encourage environmentally beneficial activity will be challenged as actionable is probably low.

A subsidy that is specific can be subject to offsetting countervailing duties if it is established that the subsidy causes or threatens material injury to domestic producers of like goods in the importing country. Countervailing duty actions are common and are initiated by domestic producers or industry associations representing them before the authorities in the importing country charged with the responsibility of administering its countervailing duty regime. If subsidization and material injury are found, countervailing duties offsetting the subsidy are levied.

Green Subsidies

Governments encourage the adoption of green technology through grants or tax concessions. Grants and tax concessions are clearly “financial contributions” that benefit the recipients and hence are “subsidies”. Feed-in tariffs, under which governments agree to purchase electricity produced from wind or solar sources at above market rates can also be found to be “financial contributions” that confer benefits and are hence “subsidies”.

Programs to encourage the development of green industries through subsidies can be challenged under the WTO agreements, as has occurred with Ontario’s feed-in tariff program. The Ontario government implemented a feed-in tariff program under which the Ontario Power Authority enters into contracts to purchase electricity from producers of wind and solar power at rates higher than electricity rates charged to domestic and industrial users of electricity from conventional sources. To be eligible for the program, a producer must source specified components in Ontario. Ontario’s feed-in tariff program has been challenged under the WTO by Japan in *Canada—Certain Measures Affecting the Renewable Energy Generation Sector* (DS412) and by the European Union (EU) in *Canada—Measures Relating to the Feed-in Tariff Program* (DS426). The challenge alleged violations of Article III:4 of GATT 1994 and the TRIMs Agreement. Japan and the European Union also alleged that the feed-in tariff based on use of



Ontario-sourced components was a prohibited subsidy. The panels in these cases were consolidated and the panel issued its report on December 19, 2012.

The panel found that the program was inconsistent with both Article III:4 of GATT 1994 and with Article 2.1 of the TRIMs Agreement because of the condition that a recipient of a feed-in tariff use components sourced in Ontario. However, the panel did not find that a subsidy had been conferred because it did not consider that the rates published by the Independent Electricity System Operator (IESO), the metric against which the feed-in tariff rates were assessed, reflected market rates. If the feed-in tariff had been found to be a subsidy, the condition requiring Ontario-sourced components would have made the subsidy prohibited. Canada is appealing the panel's findings to the Appellate Body.

There was no problem from a trade agreement perspective with a program paying generators higher than normal rates in order to encourage generation in Ontario of electricity from renewable sources. The aspect of the program that contravened trade agreement rules was the requirement that receipt of the feed-in tariff was conditional upon using domestic components, which discriminates against components sourced in other countries. The requirement that components be domestically sourced was in fact an industrial strategy rather than a program to protect the environment. Difficulties under the trade agreements with measures designed to encourage green activities can be substantially reduced if not entirely eliminated if such programs do not serve a dual purpose of encouraging industrial development at the expense of foreign producers.

In *China—Measures Concerning Wind Power Equipment* (DS419), the United States has challenged grants provided by China to enterprises manufacturing wind power equipment on the basis that the grants are contingent on the use of domestic over imported goods and as such are prohibited subsidies that must be withdrawn. The European Union and Japan have joined the United States in this dispute. If these grants are found to be prohibited subsidies, the problem will have arisen because the grants are being used for industrial development purposes. The grants by themselves would not attract attention under the SCM Agreement.

Subsidies and Countervailing Duties

There is a relatively low risk of countervailing duties with most subsidies conferred to encourage environmental protection such as through the adoption of green technology or the production of environmentally friendly products. The subsidy must be conferred on a company that exports its goods. The subsidy must be sufficiently high for producers of like goods in the importing country to be able to make a convincing case to the authorities that administer its countervailing duty regime that the subsidies are causing material injury. Even if a subsidy is found by the domestic authorities in the importing country to be countervailable, the only result is that the exporter's goods will be subject to countervailing duties. While this imposes a financial burden on the exporter, there is no requirement that the subsidy be withdrawn.

There are examples of successful countervailing duty actions against products benefitting from subsidies conferred for environmental reasons. The European Union has levied fairly high countervailing duties on biodiesel fuel imported from the United States. The production of biodiesel fuel in the United States benefits from a variety of subsidies both at the federal and state levels. The rationale for providing these subsidies is to encourage greater use of biodiesel fuels, which are produced from a variety of organic sources, and less use of diesel fuel produced from petroleum. The European Union countervailing duties do not frustrate the objective of encouraging greater consumption of biodiesel fuels in the United States but they negatively impact the margins of U.S. biodiesel producers in the EU market.

Cap-and-Trade Systems and Subsidies

A cap-and-trade regime that grants free emission allowances to domestic producers could be subject to the disciplines of the SCM Agreement. There would be a strong incentive to grant free emission allowances when the regime is introduced to make the regime politically palatable. If the recipient of a free allowance can sell the allowance in the marketplace to a producer who needs the allowance to fall within its cap, the government will have given the producer an asset from which the producer can raise funds. It would not be difficult to argue that there has been a direct transfer of funds to the producer. The producer has clearly received a benefit and the resulting subsidy would be considered "specific". The producer's goods could be subject to countervailing duties in the producer's export markets. If the market value of the allowances is high, the countervailing duties could be considerable.



Dispute Resolution Under the Trade Agreements

An assessment of the potential threat that the trade agreements present as regards the ability of governments to adopt measures to protect the environment must take dispute settlement mechanisms into account.

The WTO Agreement establishes a comprehensive process for the settlement of disputes. A member country initiates the process by filing a complaint. A panel is established and the complaining member country and the defending member country file submissions setting out their respective positions. A hearing takes place and the panel makes a decision as to whether the complaint is valid. The complaining member country and the defending member country may appeal the decision to the WTO Appellate Body, whose decision is final. A final decision is adopted by the Dispute Settlement Body and the defending member country is given a certain period of time to bring its measures into conformity with the decision. If the member country fails to do so, the complaining member country may retaliate by withdrawing benefits negotiated under the WTO agreements as permitted through a separate panel process.

There are several aspects of this process that are significant from an environmental perspective. First, the only parties with standing to file complaints and to participate in proceedings are the federal or central governments of member countries. While this means that environmental non-governmental organizations have no right to intervene in proceedings in which an environmental measure may be under attack, by the same token corporations have no ability under this process to challenge environmental measures that they do not like. If a corporation wants to challenge an environmental measure, it can only do so by lobbying its government to file a complaint. Unlike corporations, government officials consider the broader implications of a victory on their own ability to enact measures.

Second, decisions by WTO panels or the WTO Appellate Body are not self-executing. A government can never be forced to modify or withdraw a measure if it chooses not to. Retaliation by the complaining member country can take a number of forms including raising tariffs or imposing quotas on selected products or withdrawing other benefits. When faced with the prospect of retaliation, the government can choose between modifying or withdrawing the measure as required by the adverse decision or leaving the measure intact and accepting the retaliation.

The free trade agreements all contain dispute settlement procedures. However, the Canadian experience under NAFTA and the other free trade agreements to which Canada is a party is that these procedures are very rarely used. The sole exception is the NAFTA investor/state procedures for settling investment disputes between NAFTA federal governments and investors claiming damages for breaches of the NAFTA investment provisions. These procedures are subject matter for a separate article.

Concluding Observations

The trade agreements achieve their objectives by placing limits on the means used by environmental regulators to protect the environment, namely through imposing prohibitions or restrictions, increasing the cost of environmentally unfriendly products or activities, and through the use of subsidies. However, as the foregoing survey demonstrates, these differences in approach to achieving objectives do not result in irreconcilable differences.

As is apparent from the product ban cases considered above, WTO panels and the Appellate Body can be quite sensitive to environmental concerns. The lesson to be drawn from U.S.—Reformulated Gasoline and U.S.—Shrimp is that the manner in which an environmental measure is applied can be a greater area of vulnerability to challenge than the substance of the measure. If regulators drafting environmental measures make an effort to eliminate arbitrary or discriminatory means of applying the measure, successful challenges under the trade agreements are much less likely. Also in order to avoid “disguised restriction” provisions, environmental measures must not be crafted with a secondary purpose of protecting domestic enterprises and creating non-tariff barriers. Provisions such as the requirement in the SPS Agreement that the measures covered by it have a scientific basis are in direct conflict with the precautionary principle. The



scientific basis requirement has been applied in a few cases but cannot be considered as a serious impediment on the ability of governments to adopt environmental measures.

Measures to offset carbon leakage in carbon tax and cap-and-trade programs raise a number of potential inconsistencies with the trade agreements that have yet to be tested. If a large country such as the United States adopted a carbon tax or cap-and-trade regime with comprehensive measures to prevent carbon leakage, a major trade war could develop with a large exporting country such as China that has not adopted carbon control measures. Success or failure in a WTO challenge would depend as much upon the manner in which the carbon leakage provisions were applied as upon the substance of the provisions. If the manner of application avoids arbitrary elements and is scrupulously non-discriminatory, the chances of a successful challenge would be diminished, though certainly not eliminated. If the carbon leakage provisions in any way serve a dual purpose of protecting domestic producers, the chance of a successful challenge would be substantially increased because one of the principal objectives of the trade agreements is to reduce non-tariff barriers.

Green subsidies need not attract any attention under the trade agreements so long as they are not also used as industrial development programs. As demonstrated by Ontario's experience, subsidizing industrial development by tying subsidies or entitlement to participate in programs to using domestic products can leave a green program open to successful challenge under the WTO.

One negative aspect of the WTO dispute settlement procedure from an environmental perspective is the lack of standing accorded to environmental nongovernmental organizations to participate in the process. However, one positive aspect of WTO dispute settlement procedure from an environmental perspective is that a government that loses a challenge can never be forced to withdraw an environmental measure.

While the trade agreements are not wholly compatible with environmental protection, the differences are not irreconcilable. If environmental regulators take the objectives and the provisions of the trade agreements into account when formulating environmental policy, they should be able to achieve their environmental objectives without conflict with the trade agreements.

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Is Australia Still a World Leader in Oceans Management?

Amanda Cornwall

Introduction

Australia has long been regarded as a global leader in oceans management and in November 2012 it took the lead again when it declared one of the largest networks of marine reserves in the world.

But outside the reserves, Australia has fallen behind the international trend to integrate conservation objectives into mainstream marine sector management, under a national oceans policy. Worse, during 2012 several incidents tarnished Australia's reputation for sound management of its oceans environment. In June the United Nations World Heritage Committee warned that the Great Barrier Reef World Heritage site may be "in danger" as a result of proposed port expansions and urban development to cater to the needs of the burgeoning resources export industry in north Queensland (UNESCO World Heritage Committee, 36COM 7B.8 Great Barrier Reef (Australia) (N 154)).

Then, in September, the federal Parliament passed emergency legislation to ban the Dutch-owned super trawler FV Abel Tasman (formerly named FV *Margiris*) from fishing in Australian waters, reversing the assessment of the Australian Fisheries Management Authority (AFMA). Both incidents may well have been avoided if Australia had an integrated national marine planning system under a national oceans policy.

Australia's Ocean Resources

Australia's oceans territory is the third largest in the world, spanning three oceans and covering around 12 million square kilometres (<http://australia.gov.au/about-australia/our-country/our-natural-environment>). They contain an extraordinary diversity of seascapes, marine vegetation and large numbers of species found nowhere else and provide habitat and breeding grounds for many significant migratory marine and bird species. They include iconic areas such as the World Heritage Great Barrier Reef, the Ningaloo Reef in Western Australia, and the subantarctic Macquarie Island.

Australia's oceans also contain significant fisheries and reserves of oil and natural gas that bring Australia great wealth, conservatively estimated at \$44b in 2008–2009, more than Australia's entire agricultural sector (Australian Institute of Marine Science, "The AIMS Index of Marine Industry 2010", http://www.aims.gov.au/c/document_library/get_file?uuid=01a3d93f-a3a2-44dc-8b2b-eab6e13880ba&groupId=30301).

Compared with the marine waters of other nations, Australia's oceans are in good condition according to the Australian State of the Environment 2011 report. It says this is a testament to the limited pressures of the past century, combined with relatively good management of high-priority and emerging issues in recent years. However, ecosystems in areas near the coast in the most populous east, south-east and south-west are in poor to very poor condition, mostly because of unregulated human activities. (State of the Environment 2011, Independent report to the Australian Government Minister for Sustainability, Environment, Water, Population and Communities, Australian State of the Environment Committee, chapter 6 Marine environment, available at <http://www.environment.gov.au/soe/2011/report/marine-environment/index.html>)

The report also found the cumulative pressures on Australia's marine ecosystems are rapidly growing with the impacts from climate change beginning to escalate, population pressures and coastal development continuing to grow, globalisation of marine industries and increasing risks to tropical waters from oil and gas developments.



Managing Australia's Oceans

Managing Australia's vast ocean resources is complicated by the fact that the federal government, the six state governments and the Northern Territory all have responsibility for parts of Australia's maritime territory.

Australia has sovereignty over its territorial sea, and sovereign rights to explore and exploit all the living and non-living natural resources of the water column, the seabed and the subsoil of its exclusive economic zone (EEZ). These rights and associated obligations are recognised in the UN Convention on the Law of the Sea (UNCLOS), which Australia ratified in 1994. Australia's EEZ extends for some 200 nautical miles from shore, and in some areas Australia's jurisdiction stretches even farther, over an area of extended continental shelf which goes beyond the EEZ, and in parts of the Antarctic.

The federal government's area of responsibility starts at the edge of state and territory waters and extends to the outer limits of Australia's EEZ—referred to in this article as “Commonwealth waters”. The states and the Northern Territory are responsible for all activities in coastal waters, generally defined from the low water mark out to three nautical miles under Australia's Constitution and the 1979 Offshore Constitutional Settlement. As a result, the states and the Northern Territory have parallel responsibility for regulating commercial and recreational fishing, oil and gas resources, conservation, shipping, tourism and marine pollution in their respective territories.

Australia as a World Leader

Australia gained a reputation as a leader in marine conservation in 1981 when the Great Barrier Reef was declared a World Heritage Area, recognising the reef as one of the most remarkable places on earth. To protect the reef the Australian government created one of the largest marine reserves in the world under the *Great Barrier Reef Marine Park Act 1975*. The stand-alone Great Barrier Reef Marine Park Authority created a ground-breaking framework to address multiple pressures on the values of the reserve, including pressures from activities outside the park boundaries. It used an integrated approach to managing natural heritage values, focused on achieving specific objectives for the natural ecosystems of the park. (2011 Australian State of the Environment report, part 4.4) In 1998 Australia was the first country in the world to produce a national oceans policy to implement its obligations under UNCLOS. *Australia's Oceans Policy 1998* was widely recognised as setting an international benchmark in taking an integrated approach and a long-term view to maintain the health of Australia's oceans. (*Australia's Oceans Policy 1998*, Commonwealth Government of Australia)

Why State Marine Territories Matter

The states own almost all of the land along Australia's coasts, are responsible for pollution control laws and are a major government stakeholder in coastal land-use planning and catchment management. State governments are also responsible for regulating shipping in state waters and ports.

Although state coastal waters are relatively small, their human uses—for shipping, ports and fishing—are much more intensive.

State coastal waters account for about 85 per cent of the gross value of Australian commercial fisheries production. Most fish species in these waters are regarded as fully fished or overfished, though the exact status of many populations is unknown, according to the State of the Environment report. The report says the federal government has a fisheries harvest strategy that aims to maintain populations of targeted species at 20 to 40 per cent of pre-fishing levels, but most state fisheries do not apply this benchmark. And because the federal and state governments have not been able to agree on national management objectives or benchmarks for fisheries, the sector is left without national strategic planning (Australian Government Department of Agriculture, Fisheries and Forestry, “Commonwealth Fisheries Harvest Strategy—Policy and Guidelines”, 2007; Australian Bureau of Agricultural and Resource Economics and Sciences, “Australian Fisheries Statistics 2010”, 2011, p. 1).



State and local government is responsible for managing and planning land-based activities such as agriculture and urban development, which have a significant impact on marine ecosystems. Over 70 per cent of marine pollution in Australia comes from land. (State of the Environment report, above)

State governments have created marine reserves over the past 20 years but there is no standardisation in planning, design or reporting. And because the extent of state marine reserves is patchy, the shoreline is largely unprotected, just where biodiversity values are most under pressure. (State of Environment report, chapter 6, part 4.2)

Representative system of marine reserves

The Australian government made an international commitment to establish a national representative network of marine protected areas by 2012 when it ratified the Convention on Biological Diversity (CBD) in 1993. When the Australian government proclaimed the new network of marine reserves on November 16, 2012, it was the culmination of many years work.

<http://www.environment.gov.au/marinereserves/index.html>

The reserves cover vast areas—a total area of some 430 million hectares, or 41 per cent of Commonwealth waters. They give Australia one of the most extensive representative systems of marine reserves in the world. The Coral Sea Marine Reserve, at just under 200 million hectares, will be the largest single marine reserve in the world. The reserves (and zones) are declared under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) and have legislative force.

In preparing the reserves the federal government assessed the cumulative impacts of multiple activities. These assessments provide the basis for a range of permitted or prohibited uses and zones. There are multiple use zones, in which nearly all commercial activities are permitted, to highly protected marine national park zones, in which many commercial activities are prohibited. In the extensive multiple use zones, for example, extractive uses are permitted, such as mining, oil and gas exploration and development and fishing. The zones are based on the International Union for Conservation of Nature's protected area management categories.

The marine reserves are part of a broader program of marine bioregional planning, which provides a framework for conservation management in all Commonwealth waters. Marine bioregional planning aims to improve management of whole marine ecosystems. There are six marine regions and marine bioregional plans have been developed for four – the South-west, North-west, North and Temperate East. The planning process is based on scientific analysis of the marine environment, analysis of socioeconomic factors and community consultation and input.

<http://www.environment.gov.au/coasts/mbp/publications/mbp-plans.html>

The EPBC Act provides that the minister can prepare a bioregional plan to inform the minister's decisions under the EPBC Act (s176 EPBC Act 1999). Those decisions commonly include environmental assessments and approvals for proposed actions in Commonwealth waters (Parts 3, 7, 8, 9 and 10); assessments for fisheries export approvals (Parts 10 and 13A) and strategic assessments; listing and recovery of species and ecological communities (Part 13); and the protection of heritage values and places in the marine environment.

Bioregional marine plans describe the marine environment and conservation values of each region, set out broad biodiversity objectives, identify regional priorities and outline strategies and actions to address these priorities. The plans are not legislative instruments.

<http://www.environment.gov.au/coasts/marineplans/index.html>

Limitations of the Federal Reserves

While Australia's federal marine reserves and the bioregional planning program are impressive, they still leave most of Australia's marine areas—state coastal waters and Commonwealth waters that lie outside the reserves—without a plan for sustainably managing the interplay of fisheries, shipping, oil and gas, tourism and conservation.



Only the federal minister for the environment is required to consider marine bioregional plans, and only in the context of the limited scope of the EPBC Act. No other minister is required to take the plans into account in his or her decision making.

The federal government sought to establish an integrated approach to managing Australia's oceans in 1998 under Australia's Oceans Policy. The policy aimed for the states and the federal government to prepare joint ecosystem-based regional marine plans that would apply across state and federal waters. The plans were also to apply to all the sectors with an interest in marine resources—fisheries, oil and gas, tourism, shipping and conservation.

(<http://www.environment.gov.au/about/publications/archive.html#oceans-policy>)

But the process for the federal government to involve the states broke down and was never implemented. Since 2003 the federal government has concentrated on developing the marine bioregional plans and marine reserves in Commonwealth waters.

Science of Fisheries Regulator Questioned

The federal fisheries regulator AFMA has long claimed a reputation for world class decisions based on the best scientific information available. But its reputation was seriously tarnished in 2012 over its assessment for the FV *Abel Tasman*, a 142-metre fishing trawler, to take 18,000 tonnes of baitfish from Australia's southern fisheries.

With an onboard processing facility that extends its time at sea and increases its catch, the FV *Abel Tasman* drew public protest well before it arrived in Australia in August 2012. The ship was brought to Australia by a Dutch-Australian joint venture, which had invested millions of dollars. The owners had worked closely with AFMA and had been given high-level assurances that approvals would be given.

Critics claimed the scientific assessments relied on by the authority were defective and vital data had been omitted—essentially an allegation of poor standards. An independent Federal MP also claimed AFMA had breached the *Fisheries Act* (Cth) by allowing one of the owners of the *Abel Tasman*, Seafish Tasmania director Gerry Green, to participate in a resource assessment group meeting that set catch limits. AFMA responded to the claim saying quotas are set by its independent commission, not resource assessment groups. The federal ombudsman agreed to investigate AFMA's process for determining the total allowable catch for the super trawler FV *Abel Tasman*.

(<http://www.ombudsman.gov.au/media-releases/show/212>)

In the face of a mounting public campaign the government introduced urgent legislation to the Parliament in mid-September 2012 seeking new powers for the environment minister to ban fishing activities deemed risky to the environment. The legislation was passed (with some amendments). (*Environment Protection and Biodiversity Conservation Amendment (Declared Commercial Fishing Activities) Bill 2012* (Cth), Bill digest available at

http://www.aph.gov.au/Parliamentary_Business/Bills_Legislation/bd/bd1213a/13bd018)

On 19 November 2012 the environment minister made a declaration prohibiting large mid-water trawl freezer vessels from operating in this fishery for two years pending the findings of an expert panel. (Media release, The Honourable Tony Burke MP, available at

<http://www.environment.gov.au/minister/burke/2012/mr20121119.html>)

The last minute ban had international ramifications. The Dutch Deputy Prime Minister Maxime Verhagen raised concerns about it with the Australian fisheries minister, and the Dutch government took the issue to the European Union. Dutch deputy head of mission Nico Schermers told the Australian media that "if the Australian government is changing the rules at the last minute, foreign direct investment might be endangered". (<http://www.smh.com.au/opinion/political-news/netherlands-raises-trawler-ban-with-eu-20120913-25v7t.html#ixzz2DrzZexEy>)



International Trend to Integrated Marine Planning

Many countries around the world are adopting integrated marine spatial planning and national oceans strategies as the key to better managing all of their oceans and coastal areas, not just conservation areas. Those countries include South Korea, Japan, the United Kingdom, the United States of America, Germany, Belgium, the Netherlands, China and Canada.

Many other countries are in the process of formulating new approaches and looking for guidance from international experience. Resolutions at the 2010 Conference of the Parties (COP) under the CBD invited the parties and other governments to increase efforts to apply marine spatial planning for better integration of conservation objectives in marine and other sectoral programs and in overall plans for economic development. (Conference of the Parties Decision X/29, paragraph 28)

Marine spatial planning practices vary around the world, as do definitions of ecosystem-based planning and management. UNESCO defines marine spatial planning as

a public process of analyzing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic and social objectives that have been specified through a political process.

(UNESCO, “Marine Spatial Planning Initiative”, <http://www.unesco-ioc-marinesp.be/>)

A key element is the use of the best scientific information available about local ecosystems and considering the cumulative impacts of all uses of marine resources—fisheries (commercial and recreational), oil and gas, shipping, tourism, emerging marine industries and the environmental and marine science sectors. Other key elements are the use of regional marine plans that are designed to achieve ecological, economic and social objectives, and the use of a public process to develop the plans, in which all stakeholders have a say.

As UNESCO points out, “. . . sector policies will have to be subsidiary to the principles and standards of a common National Ocean Policy, i.e. that objectives, programs and measures (policies) to manage the marine environment and its resources will be developed in such a way that the different . . . measures are mutually consistent across different sectors. . . . This requires that the instrument that fixes the national policy be explicit in setting the standards, baselines and benchmarks upon which that consistency will be measured.” (UNESCO 2007)

An example of this model is the United Kingdom’s *Marine and Coastal Access Act 2009* and the UK *Marine Policy Statement 2011*, which was jointly developed and adopted by all the UK administrations. All public authorities taking authorisation or enforcement decisions that affect or might affect the UK marine area must do so in accordance with the UK Marine Policy Statement unless relevant considerations indicate otherwise. The Marine Policy Statement will also guide the development of marine plans across the United Kingdom.
(<http://www.defra.gov.uk/news/2011/03/18/marine-policy-statement/>)

The United States’s National Policy for the Stewardship of the Ocean, Coasts, and Great Lakes 2010 is an executive order that strengthens ocean governance and coordination, establishes guiding principles for ocean management, and adopts a flexible framework for effective coastal and marine spatial planning to address conservation, economic activity, user conflict and sustainable use of the ocean, our coasts and the Great Lakes. (Executive Order 13547, July 2010). It is administered by a National Oceans Office that incorporates a wide range of federal government agencies.
(<http://www.whitehouse.gov/administration/eop/oceans>)

In Canada the *Oceans Act 1997* incorporates principles of “sustainable development”, “integrated management” and “precautionary approach”. The Federal Department of Fisheries and Oceans and Minister for Fisheries and Oceans have jurisdiction over Canadian marine waters. The Canadian National Oceans Management Strategy 2010 provides for collaboration among all levels of government, shared responsibility for common objectives, engaging Canadians in decisions they have a stake in, which is applied through integrated management plans. It is a management-based process—there are no changes in governance structures or reconsideration of regulatory policies.



NELA's proposal

According to the 2011 Australian State of the Environment report, Australian governments are paying little attention to managing the cumulative impacts of the multiple pressures on Australia's oceans—ocean acidification, ocean warming, increased extreme weather events, coastal urban development, ports, oil and gas exploration and production, fishing, shipping, mining and industry. It concludes that “without an integrated and genuinely national system of multilevel governance for conservation and management, it will be difficult to properly maintain the natural wealth of [Australia's] oceans in the face of the challenges ahead”. (State of the Environment report at pp. 417–419)

The National Environmental Law Association of Australia proposes that state and federal governments should build on the work of the marine bioregional planning program to develop a marine spatial planning system for all Australian waters. It proposes that governments work together to agree on a national oceans policy that sets objectives and provides national strategies and benchmarks for each marine sector, supported by ecosystem-based regional oceans plans. The national policy and regional oceans plans would be implemented through federal, state and Northern Territory marine sector management programs such as fisheries quotas and licencing decisions.

NELA proposes national and regional advisory committees to facilitate effective community and industry engagement in the development of the plans.

NELA supports strong national institutions with a national oceans commission with expertise from across the marine sectors to prepare and monitor the regional oceans plans and advise government agencies. NELA wants oversight of the scheme by the Council of Australian Governments—quarterly meetings of the Australia prime minister and state premiers at which national policies are decided. NELA also proposes a National Oceans Act to establish the National Oceans Commission and to provide a legislative basis for the regional marine plans. If the 1998 Australia's Oceans Policy had been adopted into law it would not have been so easily dismantled once the political champions who started it had moved on.

The complex arrangements for federal and state government responsibilities for managing marine territories make the task of a national oceans plan challenging, but it can be done. Canada and the United States have far more complicated federal systems of government.

Conclusion

Conflict over competing claims on marine resources is a hot political topic in Australia. In New South Wales, Victoria and South Australia, public inquiries into state marine reserves and fisheries interests are currently running or recently concluded.

The Queensland and federal governments continue to argue over the level of protection required for the Great Barrier Reef Marine Park from the impact of large-scale urban and industrial development associated with major coal and gas projects. Partly in response to the World Heritage Commission's criticisms in 2012, the federal environment minister moved for a joint strategic impact assessment under the EPBC Act (section 146) in mid-2012. The Australian and Queensland governments eventually agreed to an arrangement under which the Great Barrier Reef Marine Park Authority will assess the impacts of expanding port facilities and increased shipping through waters inside the park, and the Queensland government will assess the impacts of activities on land that impact on the park.

The strategic assessments enable a “big-picture” approach by determining the areas to be protected from development and where development can go ahead, the type of development that will be allowed and the conditions under which development may proceed.

(<http://www.environment.gov.au/epbc/notices/assessments/great-barrier-reef.html>)

The successful public campaign against the FV *Abel Tasman* demonstrates how fisheries regulators can make themselves vulnerable if they fail to consider, and manage public expectations.



Integrated marine planning seeks to address this conflict by setting up a dialogue for examining all uses of oceans resources, and doing so through a public process in which all stakeholders have a say. The Queensland and federal government strategic assessments for the Great Barrier Reef Marine Park present an opportunity to provide an integrated marine spatial plan for that important conservation area. It remains to be seen whether or not they will adopt this approach.

Australia's state and federal governments should take another look at Australia's Oceans Policy given the level of public interest and increasing conflict over marine resources. Australia's oceans should have a coherent regulatory framework that provides certainty for fisheries and other sectors. And the Australian public deserves enough information to know if its marine resources are being sustainably managed.

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"Water, Water Everywhere, Nor Any Drop to Drink"

Paul Davies, Michael Green, and Charlotte Cook

I. Introduction

The *Rime of the Ancient Mariner* appears to have foretold the conflicting trends that underlie the global obstacles we face in respect of water. There appears to be too much of the wrong kind of water and too little of the right kind—encompassed by the issues of sustainability of supply and catastrophic flooding. The position is further complicated by the fact that water is a sensitive subject, with many regarding ready access to water as a right rather than a commodity.

This article will therefore consider the current regulatory developments in respect of water and how future trends may further develop the regulation of water. To do so, we will first consider the global trends associated with water usage and regulation. This will set in context the current regulatory developments in the European Union and United Kingdom. We will then go on to consider the future trends that may further stretch demand for water and how regulation may respond to this.

II. Global trends

Pursuant to its Millennium Declaration, the United Nations developed the Millennium Development Goals (MDGs)—eight non-binding, aspirational goals that were unanimously adopted by the international community at the UN Millennium Summit in 2000. Each UN member state committed to achieve these goals by 2015. Despite the drinking water target under the MDGs being met five years early (to halve the proportion of the population without sustainable access to safe drinking water and basic sanitation), the UN reported in 2012 that 11 per cent of the global population remain without sustainable access to safe drinking water. This demonstrates the stark reality that for a significant part of the world, access to water for basic purposes is an ambition rather than a reality.

Conversely, we have seen a rapid increase in the number of incidents of severe flooding, including most recently Hurricane Sandy. The problem is compounded by the fact that high levels of flooding often result in poor sanitary conditions and a shortage in the availability of uncontaminated drinking water. For example, in 2010 and 2011 Pakistan suffered devastating floods and according to the charity Oxfam, in 2010 up to one-fifth of the country was flooded. It is beyond the remit of this article to consider climate change in detail (although we will look at it briefly in "Future Trends", below), but clearly any permanent changes in global weather/climatic patterns will be of relevance to flood risk and the frequency and severity of drought.

Having set the global context, we will now consider the particular developments in the European Union and the United Kingdom.

III. Regulation and Its Effect in the European Union and United Kingdom

A. Regulation in the European Union and the United Kingdom

The principal piece of water-related legislation in the European Union is the *Water Framework Directive 2000* (WFD). The WFD establishes a strategic framework for managing the water environment in Europe and the key objectives are intended to (1) develop and integrate the management of surface water bodies (e.g., rivers and lakes) and groundwater (water found in aquifers); (2) reduce the pollution of water by preventing the discharge of "priority" and "priority hazardous" (chemical) substances into water; (3) enhance the status and prevent further deterioration of aquatic ecosystems; and (4) promote the sustainable use of water.

Article 4 of the WFD sets out specific environmental objectives that are to be achieved



in respect of each category of water body (for example, surface water and groundwater). In particular, these standards require all surface water bodies to achieve “good ecological” and “good chemical” status by 2015 and for all groundwater bodies to achieve “good groundwater quantitative and chemical” status by 2015. In addition, Article 11 introduces a programme of basic and supplementary measures, with the aim of achieving the objectives of the WFD, and Article 17 outlines strategies to prevent and control pollution of groundwater.

The implementing regulations for the purposes of the WFD in England and Wales are the *Environment (Water Framework Directive) (England and Wales) Regulations 2003*. Together, the Environment Agency (EA), the Department for Environment, Food and Rural Affairs (Defra) and the Welsh government are the “competent authority” responsible for implementing the WFD. Notwithstanding the implementing regulations referred to above, the United Kingdom has not chosen one overarching piece of legislation, but rather, there are a number of regimes that provide for the protection and remediation of water. Therefore, for this article, we will focus on what we consider to be the key pieces of legislation.

B. Water Quality Issues

The WFD’s environmental objectives in respect of surface water and groundwater—particularly those in Article 17—are reflected in Environmental Permitting regime (EP regime). The EP regime was implemented by the *Environmental Permitting Regulations 2010* (EP Regulations 2010) and came into force on 6 April 2010. In addition to consolidating existing legal framework, the EP Regulations 2010 also extended the EP regime to incorporate water discharge consents and groundwater authorisations.

As such, subject to any applicable exemptions (which, in any case, are usually registered), an operator is required to apply to the EA for a permit to undertake discharge or groundwater activities. Either the EA or the applicable local authority will have responsibility for regulating that discharge. There are two types of permit—standard and bespoke and which permit is required will depend upon the nature and risks associated with the regulated activity. Generally, bespoke permits are required where a regulated activity is complex or is undertaken near to a sensitive area, such as a protected habitat. Bespoke permits will include site-specific conditions, which are formulated by undertaking specific site assessments and consultation with the relevant regulator. Standard permits contain just one condition, which refers to a set of general rules that each operator must comply with.

While the EP regime focuses on the prevention and/or mitigation of the contamination of water, other regimes prevail in the context of historical contamination and the regulation of a contamination incident that impacts water. We will focus on the two most fundamental pieces of legislation, which are both based around the “polluter pays” principle. (It is notable that the WFD does not provide for particular remediation obligations or strategies for the cleanup of water that has already been impacted.)

The *Contaminated Land Regime* (the Regime) is the primary regulatory driver for retroactive liability. The Regime provides a statutory basis for the remediation of contaminated land.

The definition of “contaminated land” under the Regime (section 78A) includes any land which, by reason of substances in, on or under the land, appears to be in such a condition that “significant pollution of controlled waters is being caused, or there is a significant possibility of such harm being caused”. Under section 78A(9) of the Regime, the meaning of “pollution of controlled waters” is the “entry into controlled waters of any poisonous, noxious or polluting matter or any solid waste matter”. Further, the statutory guidance applicable to the Regime provides for the types of water pollution that must be considered “significant” by the applicable local authority. For example, this includes water that is being extracted for human consumption. Where a site is designated as contaminated land, the land must be remediated such that it is deemed suitable for use.

Complimentary to the WFD, the European Union implemented one of the most controversial pieces of environmental legislation, the *Environmental Liability Directive* (ELD) (Directive 2004/35/EC). The ELD is also based on the “polluter pays” principle and seeks to prevent or remediate environmental damage, at the cost of the polluter. (Unlike the Regime, ELD is not retrospective and, therefore, does not cover historical contamination prior to 1 March 2009.) The ELD is implemented in England by the *Environmental Damage (Prevention*



and Remediation) Regulations 2009 (EDR) and applies to “environmental damage”, including to surface water and groundwater. This damage is assessed in the context of whether there has been a change so as to lower the status of the body of water. The definition of “environmental damage” and the “status” of the body of water are linked back to the standards under the WFD. It remains to be seen how effective ELD will be, as regulators in EU member states so far appear to be very reluctant to use their powers under it (the European Union itself acknowledges that experience is “limited”).

Whilst the WFD has provided an effective framework for the regulation and protection of water, there are a number of difficulties associated with its implementation. The changing standards in respect of water can create uncertainty. Water that was once considered to comply with all associated regulations can suddenly become designated as contaminated or fall below certain drinking or other water-related standards. (In the United Kingdom, a good example was the saga of Cambridge Water. This was a case which pre-dated the WFD, but in which a change in the drinking water standard resulted in a nuisance action, notwithstanding that the tannery’s operations—and the extent of the tannery’s impact to the groundwater—had remained unchanged after a number of years of operation.)

Ironically, despite significant regulation, the heightened requirements in terms of water quality appear to have been felt most strongly in the context of voluntary redevelopment of brownfield sites. Our experience suggests that the regulators are taking a much tougher line in terms of quality of groundwater and are being far more demanding in the terms of remediation requirements—leading to longer time frames for remediation and increased costs for major development projects.

C. Water Security

Despite being surrounded by water, the increase in water usage means that water sustainability has become a major issue in the United Kingdom. In April 2012, the EA announced that unusually dry weather in previous months had led to rivers and reservoirs running low and certain areas in England were declared official “drought zones”. Naturally enough, the declaration of drought led to unprecedented rainfall and flooding. However, as a serious point, it was only the unprecedented levels of rainfall that succeeded in restoring rivers and reservoirs to acceptable levels. This illustrates how fragile the water reserves are in the United Kingdom.

Currently, government policy (for England) on water security is primarily comprised of *Future Water: The Government’s Strategy for England*. Published in 2008, this policy sets out a strategy that endeavours to provide security in water supply and demand, improve water quality in the natural environment and prevent river and coastal flooding by 2030. However, the strategy identifies that the management of demand alone is unlikely to be sufficient in improving water security and that water supply, such as developing new reservoirs, may be necessary in certain areas of the country. Further, it is acknowledged that levels of water abstraction in 2008 were already unsustainably high in certain areas. As such, the abstraction regime needs to ensure that excessive use of water (for whatever purpose) does not prevent the realisation of objectives, both from the perspective of the UK government’s strategy, and in terms of the applicable EU environmental legislation.

For this reason, the abstraction regime has undergone significant reform and is likely to face still further changes. In England and Wales, the abstraction and impoundment of water are regulated by the *Water Resources Act 1991* (as amended). A water abstraction licence is necessary when an entity or person wishes to abstract water from surface waters and groundwater.

However, despite this licencing regime, the Defra-issued *Water for Life White Paper* sets out the “challenges facing the water and sewerage sectors in the coming decades”. The government has suggested that the issues of “pollution and over-abstraction” have meant that only a quarter of the United Kingdom’s water bodies are fully functioning ecosystems, and pressure on water resources is becoming unsustainable. As such, in July 2012 the government published a draft water bill, which is currently undergoing “pre-legislative scrutiny” and sets out even further changes. The draft water bill includes proposals for the water abstraction regime, particularly in respect of the inclusion of abstraction in the EP Regime.

D. Flood and Water Management

While so far we have focused on water quality and security, water management and flooding are also becoming a controversial topic in the United Kingdom, not least due



to the exceptional rainfall that led to unprecedented flooding in 2000, 2007 and, most recently, 2012. According to the EA, over five million people in England and Wales live or work in properties that are at risk of flooding from rivers or the sea. Climate change is likely to lead to an increase in extreme weather events and, as such, it is imperative that the United Kingdom is able to effectively understand, mitigate and manage flood risk.

As a result of the flooding in 2007, the government asked Sir Michael Pitt to undertake a review of the related flood emergencies. The final report—*The Pitt Review: Lessons Learned from the 2007 Floods*—identified urgent recommendations and areas of improvement, notably, developing tools to enhance flood mapping and identifying the issue of impermeable surfaces (development has resulted in increasing “built up” impermeable areas, therefore increasing the risk of surface water flooding). Further, many drainage networks are insufficient to cope with a large amount of rainfall and with increased urbanisation, the rainwater has no way of soaking into the ground, as it would in more rural areas.

Consequently, the aims of reducing risk and mitigating flooding are having an impact on planning and development, including restricting development in flood risk areas and taking a risk-based approach to development. In addition, the *Pitt Review* identified the need for enhanced flood defences that are not merely “temporary and demountable”. This again affects developers.

However, flood management requirements have also hit the UK government hard. Whilst the government has pledged to enhance defences, the prevailing economic conditions have meant that the government has cut the amount of money it intended to make available. This, in turn, has led to warnings that the government’s pact with the insurance industry (which did not fully subject home insurance to market pricing on the basis of the government’s commitment to improve flood defence) will be terminated when it reaches the end of its initial time commitment (summer of 2013). After this, insurers will be subjecting home insurance to full market pricing. Many will find their home insurance costs exorbitant or, in some instances, simply uninsurable. This is already driving a market for flood reports on the acquisition of property (whether residential or commercial) and we are seeing many industrial players consider flood risk as part of their real estate strategies, far more seriously than they did previously.

IV. Future Trends

Notwithstanding the significant body of regulation that already exists—both in terms of water security and quality, but also flood management—we can continue to expect to see the development of further standards and regulation on a national and global scale. The MDGs have been hailed as a success, but these may not go far enough given the statistics in the UN report. As a result of developing standards and regulation, increased water reporting by businesses and increased water awareness for businesses and householders should be expected. Similar to the idea of a “carbon footprint”, our “water footprint” or the impact of businesses and householders on water is likely to be measured as a standard part of business reporting. A report compiled by KPMG entitled *Sustainable Insight—Water Scarcity: A Dive into Global Reporting Trends*—identified that 76 per cent of the world’s 250 largest companies now address water issues in their corporate responsibility (CR) reporting. However, only around one in ten of these companies is adapting its business to changes in water availability and the majority (60%) do not yet demonstrate a long-term strategy to deal with water scarcity in their CR reporting.

Water is fast becoming one of the key “commodities”. Indeed, in the United Kingdom under the draft water bill, increased competition for the provision of water in the UK water industry is provided for, whilst bulk transfers of water are being encouraged. One might also suggest that innovative water trading, such as bulk transfers could be incentivised similarly to the renewables industry (although, the United Kingdom government’s provision of incentives for renewables has been less than satisfactory). Arguably, a greater price for water will mean a greater incentive to supply. As such, this may also have a wider benefit to certain business sectors. However, it is likely that despite increased awareness of water usage and potentially increased costs, there will be an increased demand for water in certain sectors—notably energy. For example, the development of unconventional gas sources—particularly fracking for shale gas—requires a considerable volume of water.



V. Conclusion

The UK government's *Future Water* strategy begins with the statement "water is essential for life". Whilst this is more than an obvious point to make, it keeps in mind what is truly behind the multifaceted and ever-changing regulation and standards and why water will remain a divisive subject. Water scarcity, combined with the effects of changing weather patterns and the resulting increased flooding, requires a fundamental change in the way water is managed. However, if the "commoditisation" of water becomes a reality, this will have to be carefully managed in a context where consumers often consider water to be a right (or, as the UN report reminds us, where people simply do not have access to clean water at all).

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Wind Energy Development and the Protection of Migratory Birds

John Cossa

Wind power is the world's most rapidly growing source of electricity, and although growth tends to be slower in the United States, wind generating capacity has been steadily increasing. Despite the fact that wind energy projects have for decades been touted as environmentally preferable alternatives to traditional energy sources such as coal, the wind energy industry is currently grappling with its own environmental issues, particularly those related to impacts on migratory birds, of which there are over a thousand species. See 50 C.F.R. § 10.13.

Unlike generating power from coal, operating a wind facility does not involve the wholesale demolition of mountaintop habitats or emitting pollutants into the atmosphere that can kill large numbers of migratory birds. It does, however, involve very direct and sometimes spectacular impacts to avian species as birds fly headlong into the spinning turbines. Some land-based wind farms have been responsible for ongoing fatalities of protected avian species, most conspicuously the wind farm at Altamont Pass in California, which has been dubbed by critics as the “condor cuisinart.”

The simple fact is that all wind energy projects will very likely kill or “take” a migratory bird at some point. Even in the offshore environment, where the concentration of avian species decreases dramatically, it is virtually certain that any wind project will result in at least some direct, albeit unintentional deaths of migratory birds. See, e.g., Cape Wind Energy Project Environmental Assessment, OCS EIS/EA BOEMRE 2011-024, at 18–20 (Apr. 18, 2011), [available at http://www.boem.gov/uploadedFiles/BOEM/Renewable_Energy_Program/Studies/EA_FONNSI_4_2011.pdf](http://www.boem.gov/uploadedFiles/BOEM/Renewable_Energy_Program/Studies/EA_FONNSI_4_2011.pdf).

In the United States, this inevitably brings wind energy developers and, in some cases, government agencies issuing licenses to wind developers into direct conflict with the Migratory Bird Treaty Act (MBTA), 16 U.S.C. §§ 703–12, which makes it a crime to “take” migratory birds without authorization from the secretary of the interior. Unfortunately, the nature and language of this unusual statute, coupled with the piecemeal approach the government has taken to its enforcement, have conspired to create an unsettled area of law that has frustrated consistent application for almost a century. Unlike those practicing in neighboring Canada, with whom the United States shares the obligation to protect migratory birds, U.S. practitioners face a daunting task in advising their wind energy clients on the nature and degree of legal risk they face under the wide-ranging interpretations of the MBTA.

The Migratory Bird Treaty Act and Associated Treaties

One of the oldest natural conservation laws, the MBTA was originally enacted in 1918 for the purpose of implementing a 1916 bilateral treaty between the United States and Great Britain, which was acting for Canada, in the attempt to protect migratory birds from unregulated hunting. *Missouri v. Holland*, 252 U.S. 416 (1920). (The U.S. Supreme Court recently granted a writ of certiorari in the case of *U.S. v. Bond*, 681 F.3d 149 (3d Cir. 2012), which challenges the basis of the Court's 1920 decision to uphold the constitutionality of the MBTA in *Holland. Bond v. U.S.*, 2013 U.S. LEXIS 914 (U.S. Jan. 18, 2013); *Bond v. U.S.*, 2012 U.S. Briefs 80504, 2012 U.S. S. Ct. Briefs LEXIS 3855 (U.S. Aug. 31, 2012) (challenging the notion that a treaty can expand the legislative power of Congress).

To that end, the signatories, “being desirous of saving from indiscriminate slaughter and of insuring the preservation of such migratory birds as are either useful to man or are harmless, have resolved to adopt some uniform system of protection which shall effectively accomplish such objects.” Convention between the United States and Great Britain (for Canada) for the Protection of Migratory Birds; 39 Stat. 1702; TS 628 (1916) (Canada Convention). Canada's companion statute is the Migratory Birds Convention Act, S.C. 1994, c.22 (1917) (MBCA), which focuses primarily on the protection of bird nests and eggs, as well as unregulated hunting and unintentional take of birds with chemicals.



The MBTA was subsequently amended to implement three additional bilateral conventions between the United States and neighboring countries; the Convention Between the United States of America and the United Mexican States for the Protection of Migratory Birds and Game Mammals, 50 Stat. 311, TS 912 (1936); Convention Between the Government of the United States of America and the Government of Japan for the Protection of Migratory Birds and Birds in Danger of Extinction, and Their Environment, 25 UST 3329, TIAS 7990 (1972); and the Convention Between the United States of America and the Union of Soviet Socialist Republics Concerning the Conservation of Migratory Birds and Their Environment, 92 Stat. 3110, TIAS 9073 (1976).

Both the MBTA and the MBCA are criminal statutes, subjecting violators to prosecution for misdemeanors or even felonies. The fundamental prohibition in the MBTA makes it a crime “to pursue, hunt, take, capture, kill, [or] attempt to take, capture, or kill . . . [a]t any time by any means or in any manner” any migratory bird protected by the treaties except as permitted by regulations promulgated by the secretary of the interior. 16 U.S.C. §§ 703(a), 704(a). The MBCA is much less prescriptive, making a crime the taking of the eggs or nests of migratory birds, as well as hunting or incidentally killing migratory birds with chemicals without a permit.

Under the MBTA, the secretary of the interior is authorized to promulgate rules that allow for exceptions to the MBTA’s expansive prohibitions. Specifically, the Secretary is directed to determine

when, to what extent, if at all, and by what means, it is compatible with the terms of the conventions to allow for the hunting, taking, capturing, [and] killing . . . [of migratory birds] . . . and to adopt suitable regulations permitting and governing the same. . . .

16 U.S.C. § 704(a); see also 16 U.S.C. § 712(2) (authorizing the secretary to promulgate regulations “necessary to implement the provisions of the convention[s]” with the UK, Mexico, Japan, and the U.S.S.R.).

The secretary delegated this responsibility to the U.S. Fish and Wildlife Service (FWS) which promulgated regulations at 50 C.F.R. parts 10, 20, and 21. FWS regulations establish a program that prohibits the taking, possessing, importation, exportation, transportation, selling, or purchasing of any migratory birds unless as authorized by a valid FWS permit. 50 C.F.R. § 21.11. The term, “take” is defined to include “pursue, hunt, shoot, wound, kill, capture, or collect.” 50 C.F.R. § 10.12.

FWS has also promulgated regulations making permits available for a limited number of activities including falconry, scientific collection, raptor propagation, rehabilitation and education, take of depredating birds, taxidermy, and waterfowl sale and disposal. See 50 C.F.R. pts. 20 and 21. Permits for “special” uses are also provided for under the regulations, although an applicant must make “a sufficient showing of benefit to the migratory bird resource, important research reasons, reasons of human concern for individual birds, or other compelling justification” in order to obtain one. 50 C.F.R. § 21.27.

None of the MBTA regulations expressly address the issuance of permits for unintentional, incidental take of migratory birds, such as that which would be associated with the operation of a wind energy facility. *E.g.*, 69 Fed. Reg. 31,074 (June 2, 2004). The FWS has not generally made permits available for otherwise lawful activities that incidentally take migratory birds. *Newton County Wildlife Ass’n v. U.S. Forest Serv.*, 113 F.3d 110, 115 (8th Cir. 1997). Although the conventional wisdom has been that none of the regulations contemplate issuing such a permit (*e.g.*, U.S. Department of the Interior, Office of the Inspector General, Investigative Report, *Cape Wind Associates, LLC*, at 20 (Jan. 8, 2010)), this view may be changing.

Strict Criminal Liability for Incidental Take of Migratory Birds

Since it appears that there are no regulations allowing for the incidental take of migratory birds, the MBTA, as currently implemented, makes the unintentional, incidental take of migratory birds, such as that associated with a wind facility, a crime, subjecting the one responsible for *any* “take” of migratory birds to potential federal prosecution.

Environment Canada has made clear that its current regulations simply do not allow for



an incidental take permit for violations of its MBCA. However, the MBCA only makes the unintentional incidental take of migratory bird eggs and nests a criminal offense. It does not appear that the MBCA prohibits the type of incidental “take” of migratory birds that would be associated with the operation of a wind energy facility.

Both the MBTA and MBCA are strict liability criminal statutes. *Cf., United States v. Corrow*, 119 F.3d 796 (10th Cir. 1997), *cert. denied*, 522 U.S. 1133 (1998). Strict liability crimes are uncommon because criminal intent, or “mens rea,” is an essential element of most criminal offenses. In typical criminal prosecutions, two essential elements must be established in order to show that a crime was committed: (1) *actus reus*—the defendant actually engaged in the prohibited act; and (2) *mens rea*—the defendant had necessary intent to commit the criminal act. In the case of the MBTA and the MBCA, this *mens rea*— or “guilty mind”—element is dispensed with; a person or entity could be held criminally liable under these statutes even if there was no intent to harm a bird or act in a reckless fashion. *E.g., United States v. Stephens*, 142 Fed. Appx. 821, 822 (5th Cir. 2005) (“Violations of [the MBTA] are strict liability offenses, requiring no proof of specific intent to commit the crime.”).

In the United States, the fact that all unintentional take of migratory birds constitutes a strict liability crime has raised the specter of criminal prosecution for anyone engaged in mundane and otherwise lawful activities such as driving cars, piloting airplanes, constructing buildings—even children playing in the street—if they inadvertently “take” a migratory bird without a permit. *See United States v. Moon Lake Electric Ass’n*, 45 F. Supp. 2d 1070, 1081–82, 1085 (D. Colo. 1999), for an entertaining discussion of the subject. In order to avoid such “absurd results” and in the attempt to avoid simply leaving the issue of which activities trigger criminal liability to the sole discretion of prosecutors on a case-by-case basis, the courts have each been adopting their own standards for determining whether an activity subjects one to criminal liability under the MBTA. *See Mahler v. United States Forest Service*, 927 F. Supp. 1559, 1582–83 (S.D. Ind. 1996); *United States v. CITGO*, 2012 U.S. Dist. LEXIS 125996, 14–21 (S.D. Tex. Sept. 5, 2012).

Some courts maintain that, because the MBTA was originally intended as a hunting and poaching statute, its provisions could only be enforced against those engaged in hunting, poaching, or trapping activities. *E.g., Newton Cty. Wildlife Ass’n*, 113 F.3d at 115; *Seattle Audubon Soc’y v. Evans*, 952 F.2d 297, 303 (9th Cir. 1991); *Mahler*, 927 F. Supp. at 1579 (“Properly interpreted, the MBTA applies to activities that are intended to harm birds or to exploit harm to birds such as hunting or trapping, and trafficking in birds and bird parts. The MBTA does not apply to other activities that result in unintended deaths of migratory birds.”). In such jurisdictions, courts will not hold those who are engaged in other activities, such as oil and gas development or forestry or engineering projects, criminally liable for the unintentional, incidental take of migratory birds. *E.g., United States v. Brigham Oil & Gas L.P.*, 840 F. Supp. 2d 1202, 1212 (D.N.D. 2012) (“Like timber harvesting, oil development and production activities are not the sort of physical conduct engaged in by hunters and poachers, and such activities do not fall under the prohibitions of the [MBTA.]”); *see also United States v. Chevron*, 2009 U.S. Dist. LEXIS 102682, *8 (W.D. La. Oct 30, 2009) (“These [MBTA] regulations were clearly not intended to apply to commercial ventures where, occasionally, protected species might be incidentally killed as a result of totally legal and permissible activities . . .”). Also in such jurisdictions, a wind operator would likely be insulated from prosecution under the MBTA.

However, many courts hold that criminal liability under the MBTA applies to the unintentional take of migratory birds associated with activities unrelated to hunting. These courts focus on the language of the statute rather than interpretations of the original intent of the MBTA; because section 703 expressly states that it is illegal to kill migratory birds “by *any* means or in *any* manner,” these courts find that prosecution is not limited to hunting or poaching activities. 16 U.S.C. § 703(a) (emphasis added). *E.g., United States v. Corbin Farm Service*, 444 F. Supp. 510, 532 (E.D. Cal. 1978) (farmer criminally liable for accidental poisoning of migratory birds when applying pesticides to alfalfa crop); *Moon Lake*, 45 F. Supp. 2d 1070 (defendant criminally liable for incidental take of birds associated with operation of transmission line); *United States v. Apollo Energies, Inc.*, 611 F.3d 679 (10th Cir. 2010) (oil and gas company criminally liable for death of migratory birds lodged in drilling equipment); *CITGO*, 2012 U.S. Dist. LEXIS 125996 (MBTA conviction upheld for incidental death of birds exposed to waste oil in open tanks). In the attempt to reconcile this broad application of the MBTA with the obvious pitfalls of transforming even the most mundane activity into a crime if it happens to harm a bird, the courts have developed various and inconsistent standards for determining whether an individual violated the act.



In some jurisdictions, if the defendant unintentionally takes a migratory bird while engaged in otherwise lawful activity, he has not violated the MBTA. *Brigham Oil*, 840 F. Supp. 2d at 1213–14 (defendant not criminally liable for bird deaths associated with oil reserve pits because “the criminalization of lawful, commercial activity which may indirectly injure or kill migratory birds is not warranted under the MBTA”); *United States v. Rollins*, 706 F. Supp. 742 (D. Idaho 1989) (because farmer applied pesticide as directed, he was not criminally liable for take of migratory birds under the MBTA). In other jurisdictions, whether the action that takes the birds is lawful or not makes no difference. Instead, the principles of due process and criminal “proximate cause” control the outcome. In these jurisdictions, a defendant who unintentionally takes migratory birds will be held criminally liable only if it was *reasonably foreseeable* that the activity would result in the take of migratory birds. *Corbin Farm*, 444 F. Supp. at 532 (defendant found criminally liable for poisoning protected birds because it was foreseeable that spreading pesticide on alfalfa crop may kill birds).

CITGO appears to establish a hybrid standard, requiring that the defendant be engaged in unlawful conduct that would foreseeably lead to bird deaths in order to be found guilty of an MBTA violation for unintentional take. *CITGO*, 2012 U.S. Dist. LEXIS 125996, *20–21 (oil company violated MBTA by keeping open oil tanks in violation of Texas law and it was reasonably foreseeable that these tanks would take birds). Another hybrid standard worthy of note was established in *Moon Lake*, 45 F. Supp. 2d at 1084–85, where the district court held that the incidental take of migratory birds associated with construction of a electric transmission line constituted a violation of the MBTA because (1) the take of birds was reasonably foreseeable; and (2) the defendant utility failed to take reasonable measures to mitigate the likelihood of take. The Tenth Circuit appears to have adopted this standard in *Apollo Energies, Inc.*, where the court upheld MBTA convictions where FWS alerted two oil and gas exploration companies that their equipment may result in migratory bird deaths, the companies took no prophylactic measures to prevent or mitigate, and birds were subsequently killed. 611 F.3d 679. This judicial standard is analogous to the Canadian “due diligence” defense, where there is no violation of the MBCA regulations so long as reasonable steps are taken to ensure that birds would not be harmed. *R. v. Syncrude Canada Ltd.*, 2010 ABPC 229.

Still, other U.S. jurisdictions have held that those engaged in “extrahazardous” activities will always be subject to criminal liability for incidental take under the MBTA even if the utmost care has been taken to prevent such harm. *United States v. FMC Corp.*, 572 F.2d 902, 907 (2d Cir. 1978) (although dumping wastewater from pesticide manufacture into pond was otherwise lawful, criminal conviction proper because take of migratory birds was incidental to inherently “hazardous” activity).

Given that FWS has not brought an MBTA enforcement action against a wind energy operator, it is unclear how the take of migratory birds related to the operation of a wind energy facility would be treated under any of these judicial standards. It is unquestionable that such take is reasonably foreseeable—indeed almost unavoidable—as a result of operating a wind facility. Whether, and under what circumstance, a wind operator would be found criminally liable if prosecuted would depend greatly on the jurisdiction in which the case is tried, and how the court applies its standards in the context of wind energy. On the one hand, the operation of a wind energy facility is an otherwise lawful activity. Under *Brigham Oil*, prosecution would fail. One can assume that wind operators would at least attempt to take some measure to mitigate the take of migratory birds. What would constitute sufficient mitigation to avoid conviction under the *Moon Lake* and *Apollo Energies* standard remains to be seen. Whether a court using the *FMC* standard would consider the operation of a wind energy facility an “extrahazardous” activity for the purpose of evaluating impacts to birds, and therefore constituting a *de jure* violation of the MBTA, also remains to be seen. See M. Blaydes Lilley & J. Firestone, *Wind Power, Wildlife, and the Migratory Bird Treaty Act: A Way Forward*, 38 *Envtl. L.* 1167, at 1186–93 (Fall 2008) (where authors debate the standards by which a wind energy operator could be prosecuted in light of disparate case law).

Perhaps in recognition of this fact, it has been the policy of FWS to work cooperatively with wind developers to promote the minimization of the impacts of their projects rather than to seek criminal prosecution under the MBTA. See U.S. Government Accountability Office, GAO 09-05-906, *Wind Power: Impacts on Wildlife and Government Responsibilities for Regulating Development and Protecting Wildlife* 36 (2005). Indeed, FWS has published comprehensive guidelines for developers designed to minimize the impacts of their projects. U.S. Fish and Wildlife Service, *Land-Based Wind Energy Guidelines*, OMB No. 1018-0148, available at http://www.fws.gov/windenergy/docs/WEG_final.pdf.



Although FWS guidelines and recommendations clearly indicate that acting in accordance with the recommendations of the service does not insulate a developer from criminal liability, it may be reasonable to assume that a developer who follows the direction of FWS with respect to migratory bird protection will not likely find itself prosecuted for a crime under the MBTA. See U.S. Fish and Wildlife Service, Interim Guidance on Avoiding and Minimizing Wildlife Impacts from Wind Turbines 2 (May 2003), available at <http://www.fws.gov/habitatconservation/wind.pdf> (explaining that FWS and the Department of Justice will likely exercise prosecutorial discretion in such cases, as “it must be recognized that some birds may be killed at structures such as wind turbines even if all reasonable measures to avoid it are implemented”). Environment Canada has adopted a similar policy, indicating that those in substantive compliance with the MBCA may avoid prosecution. See Environment Canada’s “Approach to Incidental Take of Migratory Birds Under the *Migratory Birds Convention Act, 1994*” Web site, available at <http://www.ec.gc.ca/paom-itmb/default.asp?lang=En&n=1AC34678-1>. However, if the facts behind cases such as *Moon Lake* or *Apollo Energy* serve as any guide, a wind energy operator may find itself subject to prosecution for violating the MBTA if the operator disregards the recommendations of FWS. And in such a circumstance, the defense options would likely be limited.

Agency Vulnerability Under the MBTA

Another significant and often overlooked issue facing the wind energy industry in the United States is the fact that many wind facilities require some form of approval or authorization of the federal government. It is these federal approvals that may be vulnerable to challenge by third parties if they authorize a project that results in the incidental, unintentional take of migratory birds. The MBTA, in conjunction with the Administrative Procedure Act (APA), 5 U.S.C. § 1551 et seq., could potentially be used by anyone with standing to challenge government decisions authorizing third-party projects if the operation of the project would result in a violation of the MBTA’s strict prohibition on incidental take. See, e.g., *Sierra Club v. Martin*, 933 F. Supp. 1559 (N.D. Ga. 1996) (granting preliminary injunction of U.S. Forest Service issuance of logging permits under APA and the MBTA where permittees’ logging activities would likely take migratory birds), *rev’d*, 110 F.3d 1551 (11th Cir. 1997); see also Pls.’ Opp. to Fed. Defs.’ Mot. for Summ. J. and Reply in Supp. of Their Mot. for Summ. J. at 19–21 (Doc. No. 222), *Public Employees for Environmental Responsibility v. Beaudreau*, Civ. No. 1:10-cv-01067-RBW-DAR (D.D.C. filed Aug. 2010). This is because APA allows private parties to challenge government agencies to prevent them from taking any “final action” that is “arbitrary, capricious and an abuse of discretion, or otherwise not in accordance with law.” *Sierra Club*, 933 F. Supp. at 1564; 5 U.S.C. § 706(2)(A); 72 Fed. Reg. 8932 (Feb. 28, 2007).

Until very recently, MBTA permits for incidental, unintentional take were no more available to the federal government than they were to private parties. This exposed federal agency actions that incidentally took protected birds as well as agency approvals of third-party activities that would result in the incidental take of protected birds subject to challenge under the MBTA and APA. See *Center for Biological Diversity v. Pirie*, 191 F. Supp. 2d 161 (D.D.C. 2002) (holding that that the Department of the Navy violated the MBTA and APA by using an island in the Pacific as a bombing range without an incidental take authorization); *Humane Soc’y v. Glickman*, 217 F.3d 882 (D.C. Cir. 2000) (holding that Department of Agriculture’s Goose Management plan killed migratory birds without an authorization and therefore violated the MBTA); see also *Sierra Club*, 933 F. Supp. 1559; *Am. Bird Conservancy, Inc. v. FCC*, 516 F.3d 1027 (D.C. Cir. 2008) (finding that the MBTA would apply through APA when FCC approves communication towers that could take migratory birds).

However, some circuits have held that the MBTA does not apply to actions or approvals issued by federal agencies at all, making their decisions immune to the APA/MBTA challenge. *Sierra Club*, 110 F.3d at 555 (reversing district court and finding only persons, associations, partnerships, or corporations subject to the MBTA; neither agency action nor agency approval of third-party action can be challenged for violation of the MBTA under APA); *Newton Cty.*, 113 F.3d at 115 (MBTA does not apply to actions by agencies because the term “person” does not include “sovereign”).

Under Executive Order 13186, all federal agencies are directed to take actions to protect and conserve migratory birds consistent with the migratory bird conventions, and to ensure that their own actions do not violate the MBTA. The order is silent on the issue of the authority of the secretary of the interior to promulgate regulations authorizing



incidental take of migratory birds. See 66 Fed. Reg. at 3853, 3856. Under the order, every federal agency taking actions that are likely to have a measurable negative effect on migratory bird populations is required to enter into a memorandum of understanding (MOU) with FWS outlining how the agency will promote conservation of migratory birds. 66 Fed. Reg. 3853 at 3854–56 (Jan. 17, 2001). E.O. 13186 and the associated MOUs acknowledge the inevitability that agency actions will result in the unintentional take of migratory birds.

Therefore, in many jurisdictions, authorizations and approvals by federal agencies of wind energy projects, and the projects dependent on their authorizations, may be vulnerable to challenge under the MBTA. One of the more recent high-profile MBTA cases involves the Cape Wind project intended to be developed on the Outer Continental Shelf offshore Massachusetts. In *Public Employees for Environmental Responsibility v. Beaudreau*, Civ. No. 1:10-cv-01067-RBW-DAR (D.D.C. filed Aug. 2010) (PEER), various groups and a municipality challenged the Minerals Management Service's (now the Bureau of Ocean Energy Management (BOEM)) issuance of a lease for and subsequent approval of the construction and operation of a large-scale wind turbine array to be located in Nantucket Sound approximately 12 miles offshore Massachusetts. BOEM and FWS have been in close consultation for years regarding how best to minimize potential take of migratory species, and have been working under an MOU executed pursuant to E.O. 13186. Nevertheless, plaintiffs are challenging the approval of the project on the grounds that, inter alia, BOEM violated the MBTA's strict prohibition on unauthorized take by failing to obtain an incidental take permit. Neither BOEM nor the lessee currently has an MBTA permit from FWS. The government argues, inter alia, that the MBTA does not require it to obtain a permit before authorizing a third party to construct an offshore wind energy project. *Id.*, Fed. Defs.' Mot. for Summ. J. and Opp. to PEER Pl.'s Mot. for Summ. J. at 30–31 (Doc. No. 205).

Permits for Incidental Take

To date, FWS has issued very few incidental take permits. The first was issued in response to *Pirie*, where the district court held that the Department of the Navy violated the MBTA and APA by using an island in the Pacific as a bombing range without MBTA authorization. 191 F. Supp. 2d at 161. The court enjoined the Navy from conducting further bombing exercises, and ordered it to obtain an incidental take permit from FWS. However, in the 2003 Defense Authorization Act, the Congress gave the military an interim period during which it was exempt from FWS's regulatory prohibition on incidental take. Further, Congress ordered FWS to promulgate regulations exempting the Armed Forces from the prohibition against incidental take during authorized military readiness exercises. See 72 Fed. Reg. 8931 (Feb. 28, 2007). In its final rulemaking, FWS pointed out that Congress made the necessary determination under 16 U.S.C. § 704(a) that permitting incidental take for such purposes was "consistent with the MBTA and the Treaties." 72 Fed. Reg. 8932, 8934; see also H.R. Rep. No. 107-722, at 624 (2002) ("The conferees believe this provision to be entirely consistent with the underlying terms of all treaty obligations of the United States."). Only the Department of Defense can take advantage of these incidental take permits.

On August 24, 2012, FWS issued a "special purpose permit" to the National Marine Fisheries Service (NMFS) pursuant to 50 C.F.R. § 21.27 authorizing the incidental take of Laysan albatrosses in connection with longline fishing offshore Hawaii. See U.S. Fish and Wildlife Service, Environmental Assessment: *Issuance of an MBTA Permit to the National Marine Fisheries Service Authorizing Take of Seabirds in the Hawaii-based Shallow-set Longline Fishery* (July 27, 2012), available at <http://www.fws.gov/pacific/migratorybirds/nepa.html>. It is now clear that FWS believes it currently has the authority to issue incidental take permits to other agencies under its existing regulations, although it is uncertain whether such permits are necessary.

In this instance, NMFS is the agency responsible for issuing authorizations to fishermen for the use of a fishery, and it is the fishermen's activities that will result in incidental take of migratory birds. The intent is that this "take" will be "covered" by the permit FWS issued to NMFS. The validity of this special purpose permit is currently being challenged in the District Court for the District of Hawaii on a number of grounds, including allegations that FWS failed to make the necessary showing under 50 C.F.R. § 21.27 that there is a "compelling justification" for the permit. *Turtle Island Restoration Network v. U.S. Dep't of Commerce*, ___ Civ. No. ___, D. Haw. (filed Nov. 2, 2012). Plaintiffs are also challenging FWS's finding that the issuance of the



permit is “consistent” with the conservation purposes of the Migratory Bird Conventions under 16 U.S.C. § 704(a).

It is unclear whether this piecemeal approach of issuing customized special purpose permits under 50 C.F.R. § 21.27 for the purpose of authorizing incidental take of migratory birds represents an approach FWS intends to pursue in the future or whether it is a temporary means of authorizing important government projects. Reliance on 50 C.F.R. § 21.27, which by regulation and statute requires case-by-case determinations regarding importance of the project and compatibility with the conventions, does not appear to be susceptible of use as a regularized permitting process, and may not provide much certainty for the industry, permitting agencies, or bird advocates. Perhaps the resolution of the *PEER* and *Turtle Island* cases will help clarify the legal standards by which the actions of federal agencies are to be judged under the MBTA, determine whether a defense of substantial compliance exists or whether the MBTA applies to government authorizations of third-party activities, and help clarify the extent of FWS’s ability to authorize incidental take under its existing regulations. That said, it does not appear that anything in the four Migratory Bird Conventions, the MBTA, its regulations, or E.O. 13186 precludes the service from promulgating regulations establishing a regularized system for authorizing the incidental take of migratory birds that may resolve some of the uncertainty and conflicting jurisprudence associated with the history and status quo of MBTA enforcement.

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Canadian Regulation of Toxic Substances: Model or Muddle?

Joseph F. Castrilli

There are sound reasons why countries seek to regulate the manufacture, import, export, processing, distribution, use and disposal of natural and human-produced substances. The *Canadian Environmental Protection Act, 1999* (CEPA or the act) is clear in this regard: “[P]rotection of the environment is essential to the well-being of Canadians . . . [T]he primary purpose of [the] Act is to contribute to sustainable development through pollution prevention”. In fact, the preamble to CEPA specifically refers to virtually eliminating the most persistent and bioaccumulative substances; implementing the precautionary principle; recognizing that the risk posed by toxic substances is of national concern and often cannot be contained within national borders; applying the “polluter pays” principle; and removing threats to biodiversity posed by toxic substances.

In Canada as elsewhere, drafting the law is the easy part. Achieving its purpose is another thing altogether. To show you what I mean, I propose to examine certain key authorities and their implementation under CEPA.

Overview of CEPA

CEPA is Canada’s premier pollution prevention law, granting the federal government authority to identify, assess and control substances that may pose a risk to human health and the environment. In 1997, in *R. v. Hydro-Quebec*, [1997] 3 S.C.R. 213, the constitutionality of the CEPA toxics provisions was upheld by the Supreme Court of Canada as a valid exercise of exclusive federal legislative authority to enact criminal law.

Below I describe CEPA rules on information gathering, pollution prevention and the assessment and control of substances.

Information Gathering

Part 3 of the act establishes Canada’s pollutant release and transfer register, known as the National Pollutant Release Inventory (NPRI). The NPRI exists to help the government track—and allow the public to access information on—pollutant releases to land, water and air from industrial and transportation sources. Under the act, when the Minister of the Environment publishes a notice (which now occurs annually) in the *Canada Gazette*, persons owning facilities meeting the requirements set out in the notice must submit specified information to the minister by the date set out in the notice. In general, facilities with ten or more full-time employees and manufacturing ten tonnes or more per year of a substance listed in a schedule to the notice must report to the minister. Currently, over 350 substances are listed in the annual notice issued by the minister.

The legal authority for part 3 of CEPA was challenged in an action that claimed that the NPRI was unconstitutional and the minister lacked statutory authority to operate the NPRI or to demand information from a company and then publish it as part of the inventory. The case was dismissed on appeal by the Saskatchewan Court of Appeal in *IPSCO Inc. v. Canada (Minister of the Environment)* (2002), 287 W.A.C. 113 (Sask. C.A.) on procedural grounds, with the court of appeal holding that only the Federal Court of Canada has jurisdiction to decide these issues.

The NPRI has been instrumental in providing the government and the Canadian public with basic information about the release of substances that may pose risks to the environment and human health. However, there have been key problems with the program. For example: Until directed to do so by a federal court judge in 2009, the minister did not require annual NPRI reporting by mining facilities of releases or transfers of pollutants to tailings impoundment and waste rock storage areas. This represented a major gap in coverage under the program. In *Great Lakes United v. Canada (Minister of the Environment)*



(2009), 42 C.E.L.R. (3d) 159 (F.C.), the federal court granted an application for judicial review brought by environmental groups and held that the minister's discretion to gather information under one section of the act could not be used to escape the minister's duty to publish the information under other sections of the act;

The NPRI's focus is on releases of substances to the environment and off-site transfers, not the use of such substances. It is this limitation, among others, that caused Ontario, the province with the largest population and manufacturing base in Canada, to enact its own law, the *Toxics Reduction Act, 2009*, to specifically address reporting on, and reducing the use and creation of, toxic substances. Industries operating in the province collectively make Ontario one of the largest emitters of toxic substances in North America and the number one discharger in Canada. As the province's environmental commissioner has observed, the NPRI focuses on gathering and publishing information on industrial emissions, while the driving intent of the provincial law is toxics reduction;

The NPRI does not require reporting on substances that are being phased out (e.g., PCBs), are subject to reporting requirements under other laws (e.g., pesticides), or are generated in amounts smaller than the ten tonnes per year reporting threshold. It is this last limitation in particular that caused Toronto to promulgate a by-law, in force since 2010, requiring businesses to report to the city medical officer of health annually on the release, manufacture, processing or use of 25 priority substances above thresholds of 100 kg per year. The low threshold reporting levels are designed to track the use and release of these substances by businesses that generally are not reporting under the NPRI.

Pollution Prevention

Part 4 of CEPA, which has been characterized as a cornerstone of the Act, gives the minister authority to require industry to develop pollution prevention plans for substances that (1) are designated as toxic under part 5 of the act, (2) contribute to air and water pollution in another country, or (3) are released to the environment under conditions that cause Canada to be in violation of its obligations under international agreements. The act defines pollution prevention as the use of processes, practices, materials, products, substances or energy that avoid or minimize the creation of pollutants and waste and reduce the overall risk to the environment or human health. The minister has used the authority to require pollution prevention planning far too infrequently for it to constitute a systematic response to the risks posed by toxic substances in Canada. This is yet another reason why Ontario recently enacted its own toxics reduction legislation.

Assessment and Control

Part 5 of CEPA is a complex regime for the scientific assessment, regulation and management of substances determined to be toxic under the Act. A substance is considered toxic if it is entering or may enter the environment in a quantity or concentration or under conditions that (1) have or may have an immediate or long-term harmful effect on the environment or biological diversity, (2) constitute or may constitute a danger to the environment on which life depends, or (3) constitute or may constitute a danger in Canada to human life or health. Once a substance is determined to be toxic, it is entered on schedule 1 and may be regulated (which may include measures for its virtual elimination) or made subject to pollution prevention planning.

The process for determining that a substance is toxic has been described by some as the Achilles heel of the act, with only 126 substances having been entered on schedule 1 of CEPA in 25 years of assessment work. There were over 23,000 substances in commerce in Canada when CEPA took effect in 1988. At the time, all these substances were placed on the domestic substances list (DSL).

Substances were eventually grouped into categories based on their known characteristics: persistence, bioaccumulative, toxic and potential for human and environmental exposure. Any substance not on the DSL may not be manufactured or imported into Canada unless the minister is first provided with requested information. Under the act, non-DSL substances constitute substances new to Canada whereas DSL substances constitute "existing" substances. New substances are subject to the New Substances Notification Regulations. The rest of this article focuses on the process for evaluating and controlling existing substances under CEPA.



The process of categorizing existing substances under CEPA was not designed to assess risks to the environment or human health but rather to identify substances that required a risk assessment. By 2006, the process had identified approximately 4300 substances as requiring further assessment and the federal government announced an initiative, the Chemicals Management Plan (CMP), designed to evaluate all 4300 substances by 2020.

To date, only about 200 substances have undergone preliminary screening risk assessments or been the object of ministerial information requests. In some cases, further assessments have been ordered. The remaining thousands of substances, viewed as posing only medium and low-level risks, will be subject to a process of rapid screening.

Grouping substances into categories and then prioritizing them for screening assessments is felt to be a vast improvement over the past practice of conducting a full-blown risk assessment for each priority substance, because this had led to long delays and frequent criticism by auditors, parliamentary committees and the public. However, the approaches taken under categorization between 1999 and 2006, and under the CMP since 2006, have produced their own problems, including:

During categorization, over 250 chemicals considered persistent and bioaccumulative but not inherently toxic to aquatic organisms were not considered for further screening or management under the process;

Health effects assessments during categorization considered carcinogenicity, genotoxicity, reproductive toxicity, developmental toxicity and mutagenicity, but did not consider endocrine toxicity;

Categorization largely relied on existing data. Data gaps were filled by the use of models and analogues (i.e., information from a similar but not identical chemical). Categorization made limited use of surveys to gather data from industry and did not consider breakdown products of parent chemicals, or toxicity for parent chemicals' full life cycle;

Chemicals identified as problematic under categorization generally have not been listed in annual NPRI notices that would allow for tracking releases or transfers thereof;

The categorization process applied very stringent criteria for concluding that a substance is persistent, bioaccumulative or toxic. For example, substances were deemed persistent only if their half-life in water was equal to or greater than 26 weeks. This criterion seems arbitrary when one considers that under the Canada-U.S. Great Lakes Water Quality Agreement it is 8 weeks, the European REACH program uses 5.7 weeks, the U.S. Environmental Protection Agency standards put the number at 8.5 weeks, and the Stockholm Convention on Persistent Organic Pollutants also uses 8.5 weeks. In other words, if Canada had applied these criteria, more chemicals would have been considered for further assessment under CEPA;

Risk management options for chemicals deemed toxic and entered on CEPA schedule 1 generally have not focused on phasing out or eliminating such substances from the environment, or using safer alternatives.

Conclusions and Recommendations

This review suggests the need for improvements to the risk assessment and risk management processes for substances covered by CEPA. Risk assessments need to better address data gaps and the potential for harm at lower exposures, and consider more health end points, such as endocrine disruption. Improvements to risk management need to include, at a minimum, much more extensive use of the pollution prevention authority, identifying and using safer substances as alternatives to those identified as toxic and applying the precautionary principle where data are absent or inadequate. These, and many other improvements, were advanced by standing committees of the House and Senate five years ago but have not been acted upon. Implementing the recommendations made by standing committees of Parliament to enhance the efficacy of CEPA would serve as a true model domestically and beyond Canada's borders.



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