



**Environmental
Law Centre**
UNIVERSITY OF VICTORIA



A National Strategy to Combat Marine Plastic Pollution: A Blueprint for Federal Action

An ELC Clinic report prepared for:
T. Buck Suzuki Environmental Foundation

Students: Meaghan Partridge, Nick Acker
Articled Student: Renata Colwell
Supervisor: Calvin Sandborn, ELC Legal Director

APRIL 2018



Background*

Marine plastic pollution is an increasingly urgent global problem. From 8 to 20 million tons of debris enters the oceans every year. Plastic bags, bottles, caps, lids, straws, stirrers, containers, wrappers, microfibres and pellets all find their way to the sea. Marine activities add plasticized fishing nets, fishing lines, traps, aquaculture gear, and debris from shipping and other industries. On average, 18,000 pieces of plastic litter float on every km² of ocean. In areas where currents concentrate plastics (gyres), the number of pieces can exceed 300,000 per km². By 2050, the world's oceans could contain more plastic than fish.¹

Every year, plastic litter kills one million seabirds and 100,000 turtles and marine mammals like dolphins, whales and seals. Six-pack holders strangle marine birds and other animals. Nets, ropes, fishing lines and traps entangle and drown both mammals and birds. Animals can swim into bags and be trapped or suffocated, or ingest them and die. Plastic litter pollutes coastal habitat at an average rate of 1 piece per m² of shoreline around the world – and Canada, with the world's longest coastline, is particularly at risk.²

Most marine plastic debris eventually breaks down into much smaller microplastics. 90% of plastics found in the open ocean are tiny (<5 mm) microplastics. Recent studies of bottled water and sea salt samples from around the world found plastic particles in 93% of the tested bottled water and 94% of the sea salt. Another study found over 3,000 plastic particles *per m³* of seawater in the Strait of Georgia, and more than double that in remote Queen Charlotte Sound. Returning adult salmon may be ingesting up to 90 plastic particles a day. As plastics degrade, they can release carcinogens and endocrine inhibitors – and concentrate contaminants like PCBs, PAHs, DDT, PBDES, and BPA, exposing wildlife to these toxins.³

The current plastics economy is a colossal waste of resources. 95% of plastic value is lost to the economy after one use. Plastics-related industry consumes 7-8% of global oil and gas production, and production has doubled in the last 20 years. By 2050, plastics could consume 20% of total world oil production and 15% of the annual carbon budget. Left unaddressed, this could spell disaster for oceans and ocean life.⁴

The world is beginning to recognize the need for action. The 2015 G7 Summit Leaders' Declaration agreed to an *Action Plan to Combat Marine Litter* with an emphasis on plastic debris. The *Rio+20 Agenda* aims to prevent and reduce marine pollution by 2025. UN Environment has launched the Clean Seas Campaign to eliminate major sources of marine litter by 2022.⁵ However, marine plastic pollution also requires coordinated action at every domestic level of government. If Canada is to do its part to meet this global challenge, the federal government, provinces, territories, local and Indigenous governments, and civil society will all have to mobilize under a shared national vision – and federal leadership will be crucial, as it was in Canada's implementation of international agreements on biodiversity and ozone.⁶ Canada has announced it will seek a Zero-Plastics Waste Charter at this year's G7.⁷

Building on our report, *Seven Reforms to Address Marine Plastic Pollution*,⁸ **we now propose a National Strategy to Combat Marine Plastic Pollution** to ensure the federal government takes the lead on a coordinated interjurisdictional plan to a) **remove existing plastic pollution** from our oceans, and **prevent future Canadian plastic pollution** from exacerbating this global problem.

The Federal Government's Authority to Combat Marine Plastic Pollution

The global threat that marine plastic pollution poses to our oceans is far too big a problem for any province to tackle alone. Fortunately, the federal government has jurisdiction to take concrete legislative steps while coordinating a broader nationwide response with all levels of government.

Existing federal legislation provides preliminary tools for tackling marine plastic pollution. Under the *Canadian Environmental Protection Act*, the federal government can add substances that may have immediate or long-term harmful environmental effects to the Schedule 1 List of Toxic Substances, and regulate their use.⁹ The *Fisheries Act* empowers the federal government to regulate pollution that may negatively affect fisheries via industry-specific regulations and fishing gear and equipment rules.¹⁰ Under the *Canada Water Act*, the federal government can create resource management plans, designate water quality management areas, and set standards for non-federal waters if reasonable efforts to work with the provinces fail.¹¹ Other federal Acts should also be reviewed for useful powers – for example, the *Tobacco Act* could be used to address cigarette filters that litter our beaches.¹²

The federal government also has the constitutional authority to enact new laws to combat marine plastic pollution.¹³ For example, Parliament has exclusive jurisdiction over Canada's territorial sea beyond provincial boundaries, navigation and shipping, and sea coast and inland fisheries. This authority could be used to ground new federal laws addressing marine plastic pollution that originates in federal waters or affects fish or navigation.¹⁴ There is also authority supporting the enactment of federal laws that regulate the release of plastics into *provincial* marine waters. The Supreme Court of Canada has recognized that marine pollution's international and interprovincial implications make pollution originating in provincial marine waters a matter of 'national concern' that falls under federal jurisdiction.¹⁵ Provincial inability to single-handedly deal with marine plastic pollution could help ground a federal law banning or regulating its release into federal or provincial marine waters.¹⁶ Parliament could also use the 'national concern' doctrine to reduce plastic pollution from all sources less directly, *e.g.* by setting national targets and letting provinces choose their own means of meeting them.¹⁷

There are many other federal powers that provide constitutional authority for various forms of action. The spending power¹⁸ could facilitate provincial action on marine plastic pollution, incentivize provincial compliance with federal targets by making transfers conditional on performance, and fund scientific and technological research that will allow industry and citizens to move towards a circular economy that could eliminate plastic pollution.¹⁹ The criminal law power could ground new federal measures creating plastic-related prohibitions and penalties to protect the environment, including regulating²⁰ or banning the sale or use of particular products or types of plastic.²¹ Federal taxes with the dominant purpose of raising revenue could be applied to the import of plastic products, and possibly sale and manufacture.²² Parliament could also target plastic imports under the interprovincial/international trade and commerce power, or use it to regulate all domestic industries that use plastic components or packaging.²³ The general trade and commerce power is also available, and could possibly ground a cap and trade scheme for plastic waste.²⁴ There is also a remote possibility that Parliament could use the emergency power (on a short-term basis) or declare a class of works or undertakings to be for Canada's general advantage.²⁵

Key Components of a National Strategy to Combat Marine Plastic Pollution

A National Strategy to Combat Marine Plastic Pollution should, at minimum, include the following **overarching components**:

- ❖ A federal commitment to reduce Canada's marine plastics pollution by setting **legally binding national targets** in collaboration with provincial, territorial, municipal, and Indigenous governments. We recommend a reduction to **50% of 2018 levels by 2025, 80% by 2030, and 100% by 2050.**²⁶
- ❖ A federal commitment to **create national standards and best practices** to help Canada meet national reduction targets, and to make best efforts to persuade and incentivize other levels of government to adopt them.
- ❖ A federal commitment to **fund and coordinate interjurisdictional efforts** to meet national reduction targets.
- ❖ A federal commitment to **enact legislation** to address aspects of the marine plastic issue that are **clearly within federal jurisdiction.**
- ❖ A federal commitment to **put marine plastic pollution on the Canadian Council of Ministers of the Environment (CCME) agenda** and make best efforts to establish a CCME working group on the issue.
- ❖ A federal commitment to work with the provinces and territories to **extend plastic producer responsibility** for the full life-cycle costs of plastic products and plastic packaging produced in or imported into Canada.²⁷
- ❖ A federal commitment to **facilitate technological transfers** between governments across Canada – and between domestic governments, scientists, and industry innovators – in order to meet national targets.²⁸
- ❖ A federal commitment to spearhead efforts to **educate the Canadian public** about the importance of reducing marine plastic pollution, in collaboration with organizations that are already engaged in this work.
- ❖ A federal commitment to **build on Canada's Zero-Plastics Waste Charter initiative** and **set a global example** by combatting marine plastic pollution swiftly and decisively at home.²⁹
- ❖ A federal commitment to **measure Canada's progress** on marine plastics pollution by developing effective measurement criteria, monitoring key metrics, evaluating and **reporting to Parliament** on its progress at regular intervals, and **reviewing its approach** to marine plastics reduction at regular intervals.

Specific, Practical Commitments to Combat Marine Plastic Pollution

To help the federal government achieve these broad commitments, a National Strategy should also include specific, practical commitments to take action in a number of key areas:

1. Reducing Consumer and Industrial Use of Single-Use Plastics³⁰

Single-use plastics, including beverage containers and plastic bags, make up the bulk of plastic debris on Canadian beaches.³¹ The federal government could make progress in this area by committing to:

- Ban single-use plastics in national parks, federal buildings, and/or on federal Crown lands.³²
- Explore the legality of introducing federal bans or taxes on specific single-use plastic products.³³
- Encourage provinces to tax or ban (or empower municipalities to ban or set minimum fees for) single-use bags, plastic water bottles, straws and tableware, and polystyrene products.³⁴
- Encourage provinces and territories to expand existing container deposit refund schemes.³⁵
- Encourage the manufacture and use of refillable beverage containers, *e.g.* through federal tax credits and funding for public education, research, and technology transfer.³⁶
- Reduce cigarette filter pollution by banning smoking in national parks, funding cigarette butt recycling programs, banning the sale of cigarettes with plastic filters, and/or assessing the existing health science on filtered cigarettes and banning their sale if supported by the science.³⁷
- Issue a *Fisheries Act* regulation naming certain types/concentrations of plastic as a ‘deleterious substance’, and fine people who leave these where they might enter water frequented by fish.³⁸
- Add polypropylene, polyethylene, polystyrene, and hard-to-recycle plastics (and/or particular products) to *CEPA* Schedule 1 and enact regulations³⁹ that do some or all of the following:
 - Reduce and/or tax the importation of products that contain these substances.
 - Reduce the use of these substances in Canadian manufacturing.
 - Improve the efficiency of Canadian manufacturing activities involving these substances.
 - Mandate a minimum quantity of post-consumer plastic content in all products made from these substances that are manufactured in or imported into Canada.
 - Improve the reusability and recyclability of products made from these materials.
 - Incentivize the reuse and recycling of products made from these materials.
 - Tax or ban certain uses of these substances by manufacturers, retailers, and consumers.
 - Mandate use of mechanisms to prevent these substances from entering waterways.⁴⁰

2. Reducing Plastic Debris Discharge from Stormwater Outfalls⁴¹

Plastic debris often ends up in the ocean via storm drain systems that carry urban runoff to the sea. The federal government could make progress in this area by committing to:

- Fund or otherwise incentivize municipalities to install screens and catchment inserts.⁴²
- Use *Canada Water Act* powers to prevent plastic pollution from compromising water quality.⁴³
- Include plastics in the *Fisheries Act* definition of a ‘deleterious substance’, as discussed above.⁴⁴
- Enforce other *Fisheries Act* provisions to control stormwater plastic debris discharge.⁴⁵
- Fund improved recycling programs, and incentivize industry to reduce waste and increase reuse.

3. Reducing Microplastic Pollution⁴⁶

Microbeads, nurdles (pre-production plastic pellets), microfibres shed by synthetic fabrics, degraded plastic particles, and polystyrene fragments permeate the marine environment, and may pose more risk than larger plastic debris.⁴⁷ The federal government could make progress in this area by committing to:

- Expand the incoming *CEPA* ban on microbeads in toiletries to cover microbeads in cleaning products, printer toners, abrasive media, and other products.⁴⁸
- Add nurdles to *CEPA* Schedule 1 and regulate their transportation and use to minimize escape.⁴⁹
- Add polyester, polyamides (e.g. nylon), and polystyrene (and/or particular products made from these materials) to *CEPA* Schedule 1 and enact regulations⁵⁰ that do some or all of the following:
 - Reduce the use of these substances in Canadian manufacturing, including clothing.
 - Reduce the importation of products that contain these substances.⁵¹
 - Improve the efficiency of Canadian manufacturing activities involving these substances.
 - Ban particular uses of these substances by manufacturers, retailers, and consumers.
 - Tax particular uses of these substances by manufacturers, retailers, and consumers.
 - Mandate use of mechanisms to prevent these substances from entering waterways.⁵²
- Address laundry-induced microfibre pollution⁵³ through some of the following methods:
 - Fund the study and development of best practices for preventing microfibre pollution.⁵⁴
 - Fund the development of efficient, affordable microfibre capture technologies.
 - Require product labeling to communicate the microfibre impacts of washing machines.⁵⁵
 - Incentivize the use of cleaner front-load washing machines via tax credits or subsidies.⁵⁶
 - Work with provinces to require the use of external microfibre filters or internal capture devices in all washing machines, and provide federal subsidies to ease the transition.⁵⁷
 - Mandate washing machine filter mechanisms through regulation, e.g. via *CEPA*.⁵⁸
- Make best efforts to persuade other nations to ban microbeads⁵⁹ and regulate microplastics.

4. Cleaning Up Derelict Fishing and Aquaculture Gear⁶⁰

Lost or abandoned plasticized fishing and aquaculture gear takes hundreds of years to decompose – and traps and kills wildlife in the meantime. Removing existing ‘ghost’ gear from our oceans and preventing further gear loss is crucial.⁶¹ The federal government could make progress in this area by committing to:

- Increase enforcement of *Fisheries Act* s 25(2) and create financial bounties and incentives to ensure untended fishing and aquaculture gear is promptly removed, reported, or recovered.⁶²
- Fund gear recovery partnerships with Indigenous communities,⁶³ fish harvesters, seafood farmers, and volunteer groups.⁶⁴
- Expand requirements that traps and other gear decompose to avoid unnecessary mortality.⁶⁵
- Improve or create facilities to recycle or dispose of redundant gear.
- Encourage technological measures to minimize gear loss and reduce its impacts, e.g. by developing better biodegradable traps, green nets, and better markers and electronic tags.
- Use *Fisheries Act* powers to ensure these technological measures are adopted.⁶⁶
- Use government’s proposed *Fisheries Act* changes to target plastic pollution via the new ‘fish habitat’ definition, e.g. by deeming all federal ocean waters an ‘ecologically significant area’.⁶⁷
- Extend producer responsibility for fishing/aquaculture gear manufacturers.

5. Extending Producer Responsibility⁶⁸

Requiring plastic producers to take responsibility for the full life-cycle costs of their products and packaging will internalize cleanup costs that have historically been borne by Canadian taxpayers and the environment, and incentivize industry to adopt more sustainable practices at every stage, from design to disposal. The federal government could make progress in this area by committing to:

- Build on the 2009 Canada-wide Action Plan for Extended Producer Responsibility (EPR), the Canada-wide Strategy for Sustainable Packaging, and existing provincial EPR programs to harmonize legislated EPR requirements across the country, in collaboration with the provinces.⁶⁹
- Issue industry-specific *Fisheries Act* regulations to target heavy producers of plastic waste.
- Mandate an industry-funded technology clearinghouse for plastic industries to exchange technical information, encourage best practices, standardize production, and ensure standards are met.⁷⁰

6. Redesigning the Plastics Economy⁷¹

The current plastics economy constantly extracts petroleum resources and produces new plastics for brief use and disposal. Tackling marine plastic pollution effectively will require replacing this wasteful linear supply chain model with a non-wasteful, circular or 'closed loop' system that reduces overall use and also maximizes reuse. The federal government could make progress in this area by committing to:

- Analyze tax and subsidy systems to identify how they can move Canada toward a circular plastic economy⁷² (e.g. via tax incentives & subsidies for circular innovation, disincentives for wasteful use, and an end to grants inconsistent with the Strategy⁷³) and make comprehensive reforms.
- Encourage recycling efforts by funding technology⁷⁴ and using *CEPA* Schedule I and other tools to ban hard-to-recycle plastics, such as those with certain dyes or mixes of plastic materials.
- Implement as many of the measures suggested in the *European Strategy for Plastics in a Circular Economy* as practicable, in collaboration with other levels of government.⁷⁵
- Adopt an enforceable Zero-Plastics Waste Charter that commits Canada to 100% reusable, recyclable, or compostable packaging by 2030 and includes plastic product reduction targets.⁷⁶

7. Increasing Education and Outreach⁷⁷

Public education and outreach campaigns on the root causes and negative environmental effects of plastic pollution in and around marine waters (and waters that flow to the ocean) are crucial to reducing marine plastic pollution. The federal government could make progress in this area by committing to:

- Provide stable funding to organizations that are already teaching the public about this issue.
- Collaborate with existing organizations on a national education campaign about the importance of tackling marine plastic pollution through reduction, reuse, and recycling, marine cleanups, and support for broader laws and policies aimed at solving the plastics problem.
- Provide stable funding for community-led beach cleanups and shoreline cleanups.⁷⁸
- Provide stable funding, training, and support for community-based monitoring of plastic pollution in marine waters and ocean-bound waterways, use the data to inform government actions and reporting, and make them available to the public through an online database.

References

* The Environmental Law Centre thanks Kathy Chan and Meinhard Doelle for their helpful feedback on this Strategy.

¹ See Meaghan Partridge & Calvin Sandborn, *Seven Reforms to Address Marine Plastic Pollution* (Victoria: Environmental Law Centre, August 2017) at 4-5, online: <www.elc.uvic.ca/publications/seven-reforms-to-address-marine-plastic-pollution/>.

² *Ibid*; United States of America, Central Intelligence Agency, “The World Factbook – North America – Canada” (22 February 2018), online: <www.cia.gov/library/publications/the-world-factbook/geos/ca.html>.

³ Partridge & Sandborn, *supra* note 1 at 5-6; Christopher Tyree and Dan Morrison, “Plus Plastic: Microplastics Found in Global Bottled Water” *Orb Media* (2018), online: <<https://orbmedia.org/stories/plus-plastic/multimedia>>. Heavy metals are also a concern – see B Munier & LI Bendell, “macro and micro plastics sorb and desorb metals and act as a point source of trace metals to coastal ecosystems” (2018) 13:2 PLoS ONE, online: <journals.plos.org/plosone/article?id=10.1371/journal.pone.0191759>.

⁴ Partridge & Sandborn, *supra* note 1 at 7.

⁵ *Ibid* at 8-9.

⁶ On the implementation of the *Convention on Biological Diversity* in Canada, see Government of Canada, “The Accord for the Protection of Species at Risk” (3 October 2014), online: <www.registrelep-sararegistry.gc.ca/default.asp?lang=En&n=EDA4979C-1>. On the implementation of the *Montreal Protocol on Substances that Deplete the Ozone Layer* in Canada, see Government of Canada, “Ozone layer depletion: Montreal Protocol” (10 August 2017), online: <www.canada.ca/en/environment-climate-change/corporate/international-affairs/partnerships-organizations/ozone-layer-depletion-montreal-convention.html>.

⁷ In a positive move, the federal government has promised to use the upcoming G7 summit to push other G7 countries to adopt a Zero-Plastics Waste Charter that would require all plastic packaging to be reusable, recyclable, or compostable. However, multiple commentators are also calling on the federal government to take meaningful domestic action on marine plastics. A Ministry of Environment and Climate Change spokesperson has recently indicated that in 2018 and 2019, “ECCC will work with the provinces and territories, municipalities, [I]ndigenous communities, industry and civil society... to develop a national zero waste plastic commitment and strategy that complements its G7 efforts”. Any meaningful Zero-Plastics Waste Charter will need to address waste from plastic products as well as packaging, and include an enforceable timeline. See Mia Rabson, “Canada will push G7 partners to sign no plastics pledge to save the oceans” *iPolitics* (25 January 2018), online: <<https://ipolitics.ca/2018/01/25/canada-will-push-g7-partners-sign-no-plastics-pledge-save-oceans/>>; Bob Weber, “Canada to push for ambitious ‘plastics charter’ at G7, Environment Minister McKenna says” *The Toronto Star* (7 March 2018), online: <www.thestar.com/news/canada/2018/03/07/canada-to-push-for-ambitious-plastics-charter-at-g7-environment-minister-mckenna-says.html>; see Tony R Walker & Dirk Xanthos, “A call for Canada to move toward zero plastic waste by reducing and recycling single-use plastics” (2018) 133 *Resources, Conservation & Recycling* 99; Anna Dimoff, “BC shoreline clean-up groups frustrated after feds propose ‘no plastics’ pledge to G7” *CBC* (30 January 2018), online: <www.cbc.ca/beta/news/canada/british-columbia/ocean-plastics-fed-funding-1.4509805>; *House of Commons Debates*, 42nd Parl, 1st Sess, No 262 (12 February 2018) at 1915 (Gord Johns), online: <www.ourcommons.ca/DocumentViewer/en/42-1/house/sitting-262/hansard>; and see Alia Dharssi, “Plastic pollution pileup on Canada’s beaches exposes environmental policy gaps” *The Discourse* (3 April 2018), online: <<https://www.thediscourse.ca/sustainability/plastic-pollution-pileup-canada-beaches-exposes-environmental-policy-gaps>>.

⁸ Partridge & Sandborn, *supra* note 1.

⁹ *Canadian Environmental Protection Act*, SC 1999, c 33, ss 64(a), 90, 93 [CEPA]. The federal government has already used this process to ban microbeads: see Government of Canada, “Microbeads” (6 February 2018), online: <www.canada.ca/en/health-canada/services/chemical-substances/other-chemical-substances-interest/microbeads.html#a4>. CEPA ss 120-121 also give the federal government the power to issue environmental objectives and create guidelines and codes of practice to prevent and reduce marine pollution from land based sources.

¹⁰ *Fisheries Act*, RSC 1985 c F-14, ss 43(1)(b), (e), (h) [Fisheries Act]. Current industry-specific regulations include the *Wastewater Systems Effluent Regulations*, SOR/2012-139, and *Pulp and Paper Effluent Regulations*, SOR/92-259.

For example, similar regulations could be developed to control industries that produce, ship and use nurdles (pre-production plastic pellets) that escape and pollute waterways. The federal government could also increase enforcement of s 25(2) (removal of gear) and/or s 36(a) (throwing overboard of certain substances), or issue a regulation under s 34(2) of the *Fisheries Act* to explicitly include particular types and/or particular concentrations of plastics in the s 34(1) definition of ‘deleterious substance’, creating other enforcement possibilities. Additional options will likely become available upon the passage of Bill C-68, which intends to make “the conservation and protection of fish and fish habitat, including by preventing pollution” one of the two purposes of the *Fisheries Act*, and would empower the Minister to make regulations for the conservation and protection of marine biodiversity. See Bill C-68, *An Act to amend the Fisheries Act and other Acts in consequence*, 1st Sess, 42nd Parl, 2018, online: <www.parl.ca/DocumentViewer/en/42-1/bill/C-68/first-reading>. Useful amendments could include those contained in cl 1(5) (future s 2(1)), cl 3 (future ss 2.1 & 2.2(1)), cl 11 (future s 9.1(1)(b)), cl 20 (future s 34(1)), cl 21 (future s 34.2(1)) & cl 23 (future ss 35.2(1) & 35.2(9)).

¹¹ *Canada Water Act*, RSC 1985, c C-11, ss 5-13 [CWA]. The federal government’s power to unilaterally create resource plans is limited to federal waters and, in the absence of provincial agreement, inter-jurisdictional, international, or boundary waters where there is a significant national interest in the water management thereof. Its power to unilaterally designate water quality management areas and set water quality standards is limited to federal waters and, in the absence of provincial agreement, inter-jurisdictional waters where water quality management has become a matter of urgent national concern. If a water quality management area has been designated, it becomes an offence to deposit any waste into water except in accordance with regulations, but no areas have ever been designated and the Act as a whole has been underutilized. See Deborah Curran, “Water law as a Watershed Endeavour: Federal Inactivity as an Opportunity for Local Initiative” (2015) 28 J Envtl L & Prac 53 at 54, 63.

¹² *Tobacco Act*, SC 1997, c 13, ss 2, 5, 7(a). Regulations targeting plastic cigarette filters might need to have overriding health objectives to conform to the purpose of the Act (s 4), and could thus be dependent on the outcome of ongoing scientific research into the comparative health risks of filtered and unfiltered cigarettes. See James Hamblin, “If My Friend Smokes Sometimes, Should the Cigarettes Have Filters?” *The Atlantic* (14 July 2017), online: <www.theatlantic.com/health/archive/2017/07/cigarette-filters/533379/>; L T Kozlowski & R J O’Connor, “Cigarette filter ventilation is a defective design because of misleading taste, bigger puffs, and blocked vents” (2002) 11 Tobacco Control 40; Hannah Gould, “Why cigarette butts threaten to stub out marine life” *The Guardian* (9 June 2015), online: <www.theguardian.com/sustainable-business/2015/jun/09/why-cigarette-butts-threaten-to-stub-out-marine-life>. Under s.7(1)(1), the Governor in Council could also conceivably add cellulose acetate (cigarette filter plastic) to the list of ‘prohibited additives’ in the Schedule to the *Tobacco Act*.

¹³ For a full list of federal statutes related to oceans that could possibly be amended to address marine plastic pollution, see Oceans Directorate, Fisheries and Oceans Canada, “The Role of the Canadian Government in the Oceans Sector” (2009) at 39-44, online: <waves-vagues.dfo-mpo.gc.ca/Library/337909.pdf>.

¹⁴ *Constitution Act, 1867* (UK), 30 & 31 Vict, c 3, reprinted in RSC 1985, Appendix II, No 5, ss 91(10) & 91(12) [*Constitution Act, 1867*]. On the complexities of identifying spheres of federal and provincial marine jurisdiction, see Canadian Hydrographic Service, Fisheries and Oceans Canada, “Defining Canada’s Maritime Zones” (2011), online: <publications.gc.ca/collections/collection_2012/mpo-dfo/Fs23-571-2011-eng.pdf>; Library of Parliament, “Background Paper: Federal and Provincial Jurisdiction to Regulate Environmental Issues” by Penny Becklumb, Publication No 2013-86-E (Ottawa: Library of Parliament, 24 September 2013) at 3.1.4, online: <<https://lop.parl.ca/Content/LOP/ResearchPublications/2013-86-e.pdf>>; Michael D Sutherland, *Marine Boundaries and Good Governance of Marine Spaces* (PhD Thesis, University of New Brunswick Department of Geodesy and Geomatics Engineering, 2005), Tech Rpt No 232, online: <www2.unb.ca/gge/Pubs/TR232.pdf>; Susan Nichols, David Monahan & Michael Sutherland, “Good Governance of Canada’s Offshore and Coastal Zone: Towards an Understanding of the Marine Boundary Issues” (2000) 54:4 Geomatica, online: <www2.unb.ca/gge/Research/GEG/OceanGov/documents/geomatica.doc>.

¹⁵ *R v Crown Zellerbach Canada Ltd*, [1988] 1 SCR 401 (SCC) at paras 33, 39-40. [*Crown Zellerbach*]; *Constitution Act, 1867*, *supra* note 14 at s 91; Nathalie J Chalifour, “Canadian Climate Federalism: Parliament’s Ample Constitutional Authority to Legislate GHG Emissions through Regulations, a National Cap and Trade Program, or a National Carbon Tax” (2016) 36 NJCL 331 at 364-365. The national concern doctrine is a branch of the federal government’s

peace, order, and good government power that can only be used if the issue has a “singleness, distinctiveness and indivisibility that clearly distinguishes it from matters of provincial concern and a scale of impact on provincial jurisdiction that is reconcilable with the fundamental distribution of legislative power under the Constitution.” The majority in *Crown Zellerbach* decided a federal ban on intentional dumping in provincial marine waters was valid because polluting marine waters was “sufficiently distinguishable from the pollution of fresh waters by such dumping” and this marine-freshwater distinction created an ascertainable and reasonable limit on the federal law’s impact on provincial jurisdiction.

¹⁶ On the ‘provincial inability’ test, see *Crown Zellerbach*, *supra* note 15 at paras 33-35; Chalifour, *supra* note 15 at 365. Because the majority’s decision in *Crown Zellerbach* turned on the distinction between provincial marine waters and fresh water, this precedent may be more useful for targeting marine plastic pollution that originates at sea (or is dumped into the ocean via stormwater outfalls) than for targeting plastic waste that makes its way to the ocean via fresh water. However, unlike the very broad law at issue in *Crown Zellerbach*, federal legislation on marine plastic pollution would target a particular type of pollution and could be supported by evidence of dispersal and negative effects on marine life, both of which were absent in that case. Dispersal evidence could possibly help to extend federal legislation’s valid reach to include freshwater sources of marine plastic pollution, but could also be interpreted as undermining the marine-fresh water distinction that helped marine pollution fall under the national concern doctrine in the first place. As an alternative, the federal government could collaborate with the provinces to address freshwater sources of marine plastic pollution in a way that would be more likely to withstand an industry challenge on constitutional grounds, *e.g.* under the CWA framework, *supra* note 11.

¹⁷ For an analysis of the national concern doctrine and its potential to justify various federal actions on the analogous issue of greenhouse gas reduction, see Chalifour, *supra* note 15 at 364-376. See also Peter W Hogg “Environmental Law as Criminal Law (for constitutional purposes)” (Paper delivered at the Environmental, Energy and Resources Law Summit Canadian Bar Association conference, Vancouver, 26-27 April 2012) at 8-9, online: <www.cba.org/cba/cle/PDF/ENV12_hogg_paper.pdf>.

¹⁸ As the Supreme Court of Canada held in *YMHA Jewish Community Centre of Winnipeg Inc v Brown*, [1989] 1 SCR 1532 (SCC), the federal spending power is “inferred from the power to levy taxes... legislate in relation to public property... [and] appropriate federal funds” found in ss 91(3), 91(1A) & 106 of the *Constitution Act, 1867*, *supra* note 14. For an analysis of the spending power and its potential to justify various federal actions on the analogous issue of greenhouse gas reduction, see Chalifour, *supra* note 15 at 352-356. See also Hogg, *supra* note 17 at 11.

¹⁹ On the circular economy, see Partridge & Sandborn, *supra* note 1 at 36-40.

²⁰ As the Supreme Court of Canada noted regarding federal tobacco legislation in *RJR MacDonald Inc v Canada (Attorney General)*, [1995] 3 SCR 199 (SCC), controlling the sale or use of an undesirable substance rather than banning it completely can still qualify as a ‘prohibition’ that can be justified under the criminal law power. See Chalifour, *supra* note 15 at 379.

²¹ *E.g.* hard-to-recycle or environmentally harmful plastics. See *Constitution Act, 1867*, *supra* note 15 at s 91(27); *R v Hydro-Québec*, [1997] 3 SCR 213 (SCC); *Synchrude Canada Ltd v Canada (Attorney General)*, 2016 FCA 160. For an analysis of the criminal law power and its potential to justify various federal actions on the analogous issue of greenhouse gas reduction, see Chalifour, *supra* note 15 at 376-384. See also Hogg, *supra* note 17.

²² *Constitution Act, 1867*, *supra* note 15 at s 91(3). The relevant ‘taxable event(s)’ should be determined with attention to the distinction between genuine taxes and regulatory charges, which do not fall under the tax power and must be covered by another head of federal power to withstand a constitutional challenge. For a discussion of regulatory charges and an analysis of the tax power’s potential to justify various federal actions on the analogous issue of greenhouse gas reduction, see Chalifour, *supra* note 15 at 384-394. See also Hogg, *supra* note 17 at 10-11.

²³ *Constitution Act, 1867*, *supra* note 15 at s 91(2). For example, the import of unrecyclable plastic products from other countries could likely be targeted under this power. Although Parliament likely could not use it single out domestic plastic manufacturers, it could potentially be used to target a wide range of domestic industries that use plastic components or packaging in their products. For an analysis of the interprovincial or international trade and commerce power and its potential to justify various federal actions on the analogous issue of greenhouse gas reduction, see Chalifour, *supra* note 15 at 394.

²⁴ *Constitution Act, 1867*, *supra* note 14 at 91(2). For an analysis of the general trade and commerce power and its potential to justify various federal actions on the analogous issue of greenhouse gas reduction, see Chalifour, *supra* note 15 at 394-398.

²⁵ *Constitution Act, 1867*, *supra* note 14 at ss 91 & 92(10)(c). These powers are controversial and are unlikely to be used unless justified by particularly exigent circumstances. For an analysis of the emergency and declaratory powers and their potential to justify various federal actions in typically provincial spheres on the analogous issue of greenhouse gas reduction, see Chalifour, *supra* note 15 at 355-363.

²⁶ For an example of legislation that sets analogous targets for reducing pollution, see the *Greenhouse Gas Reduction Targets Act*, SBC 2007, c 42. Over recent decades, British Columbia has also had dramatic success in reducing solid waste disposal by setting ambitious targets. See BC Ministry of Environment, *A Guide to Solid Waste Management Planning* (September 2016) at 17-18, online: <www2.gov.bc.ca/assets/gov/environment/waste-management/garbage/swmp.pdf>. For a discussion of the advantages of setting legislative targets, see John Dernbach, "Targets, Timetables, and Effective Implementing Mechanisms: Necessary Building Blocks for Sustainable Development" (2005) 6 *Sustainable Development Law and Policy* 46.

²⁷ This could build on the 2009 Canada-wide Action Plan for EPR and Strategy for Sustainable Packaging, and/or British Columbia's current packaging regulations. See Canadian Council of Ministers of the Environment, "Current Priorities", online: <www.ccme.ca/en/current_priorities/waste/epr.html>; Canadian Council of Ministers of the Environment, "Canada-wide Action Plan for Extended Producer Responsibility", PN 1499 (October 2009), online: <www.ccme.ca/files/current_priorities/waste/pn_1499_epr_cap_e.pdf>; Canadian Council of Ministers of the Environment, "A Canada-wide Strategy for Sustainable Packaging", PN 1501 (October 2009), online: <www.ccme.ca/files/current_priorities/waste/pn_1501_epr_sp_strategy_e.pdf>; British Columbia, "Packaging and Printed Paper", online: <www2.gov.bc.ca/gov/content/environment/waste-management/recycling/product-stewardship/packaging-and-printed-paper>.

²⁸ This could be modeled on, e.g., the federal Pollution prevention resource finder (formerly the Canadian Pollution Prevention Information Clearinghouse). See Government of Canada, "Pollution prevention resource finder" (19 February 2018), online: <<https://pollution-waste.canada.ca/pollution-prevention-resources>>.

²⁹ Domestic action is just as crucial as international leadership, and any meaningful Zero-Plastics Waste Charter will need to address waste from plastic products as well as packaging, and include an enforceable timeline. See note 7.

³⁰ For an overview of this issue, see Partridge & Sandborn, *supra* note 1 at 10-20.

³¹ *Ibid* at 10.

³² Beginning in 2011, the US government banned the sale of bottled water in several national parks. The Trump administration has recently cancelled this initiative. See Jessica Glenza, "National park ban saved 2m plastic bottles – and still Trump reversed it" *The Guardian* (26 September 2017), online: <www.theguardian.com/environment/2017/sep/26/national-park-plastics-bottled-water-ban>.

³³ France and Rwanda both have national plastic bag bans. Although Canada's division of powers may ultimately prevent similar nation-wide bans (or taxes) on single-use plastics, these issues deserve further study in light of the increased effectiveness of a federal ban (or tax) relative to "ad hoc bans across different municipalities" (or provincial taxes). See Partridge & Sandborn, *supra* note 1 at 12-13; Walker & Xanthos, *supra* note 7 at 100.

³⁴ Depending on the extent of delegation in any given province, the authority to address single-use plastics through charges or bans may rest with the province and/or municipalities. The Canadian Plastic Bag Association is currently challenging Victoria's Checkout Bag Regulation Bylaw, claiming the City is acting beyond the scope of the jurisdiction delegated to it under the *Community Charter*. See Jason Proctor, "Plastic ban battle ignites as industry challenges Victoria ban" *CBC* (30 January 2018), online: <www.cbc.ca/news/canada/british-columbia/plastic-bag-ban-legal-victoria-1.4510936>.

³⁵ As of 2009, all provinces and territories except Nunavut had some sort of beverage container deposit scheme in place, but these should all be enhanced and expanded to include a wider range of containers. See Partridge & Sandborn, *supra* note 1 at 18-20; Bottle Bill Resource guide, "All Canada Bottle Bills" (9 September 2009), online: <www.bottlebill.org/legislation/canada/allprovs.htm>.

³⁶ On reusable packaging, see Ellen MacArthur Foundation, *The New Plastics Economy: Rethinking the Future of Plastics* (2016), online:

<www.ellenmacarthurfoundation.org/assets/downloads/EllenMacArthurFoundation_TheNewPlasticsEconomy_Pages.pdf>.

³⁷ See Partridge & Sandborn, *supra* note 1 at 18; Hamblin, *supra* note 12; Kozlowski & O'Connor, *supra* note 12; Gould, *supra* note 12; Bradford Harris, "The intractable cigarette 'filter problem'" (2011) 20 Tobacco Control 10, online: <www.ncbi.nlm.nih.gov/pmc/articles/PMC3088411/>.

³⁸ *Fisheries Act*, *supra* note 10, ss 34(2) & s 36(3).

³⁹ Section 93(1) of *CEPA*, *supra* note 9, broadly empowers the Governor in Council to make regulations regarding Schedule 1 substances. In addition to using such regulations to set national standards, the federal government could consider giving provinces the option to choose their own methods of meeting clear performance goals for reducing particular types of plastics, analogous to the approach taken in the Pan-Canadian Framework on Clean Growth and Climate Change. See Government of Canada, "Pan-Canadian Framework on Clean Growth and Climate Change" (12 December 2017), online: <www.canada.ca/en/services/environment/weather/climatechange/pan-canadian-framework.html> [Canada, "Pan-Canadian Framework"].

⁴⁰ This will likely require collaboration with other levels of government.

⁴¹ For an overview of this issue, see Partridge & Sandborn, *supra* note 1 at 21-22.

⁴² Los Angeles requires catchment inserts with mesh screens, which substantially reduce marine pollution. Ideally, Canadian sewer upgrades would be funded by a polluter pays scheme rather than taxpayer dollars. Jessica Midbust et al, "Reducing Plastic Debris in the Los Angeles and San Gabriel River Watersheds" (Bren School of Environmental Science & Management, University of California, Santa Barbara, April 2014) at 37-41, online: <www.bren.ucsb.edu/research/2014Group_Projects/documents/Bren-Group-Project-Thesis-Reducing-Plastic-Debris-in-the-Los-Angeles-and-San-Gabriel-Riv_000.pdf>; Partridge & Sandborn, *supra* note 1 at 22.

⁴³ *CWA*, *supra* note 11.

⁴⁴ *Supra* note 38.

⁴⁵ For example, the existing habitat-related powers in ss 34-43 of the *Fisheries Act*, *supra* note 10, and expanded powers that will likely be enacted via Bill C-68, *supra* note 10.

⁴⁶ For an overview of this issue, see Partridge & Sandborn, *supra* note 1 at 23-27.

⁴⁷ Walker & Xanthos, *supra* note 7.

⁴⁸ *Microbeads in Toiletries Regulations*, SOR/2017-111; Shauna Pettipas, Meagan Bernier & Tony R Walker, "A Canadian policy framework to mitigate plastic marine pollution" (2016) 68 Marine Policy 117 at 119.

⁴⁹ Although the federal and provincial governments could work with industry to evaluate current voluntary measures and find cooperative solutions to prevent future spills of nurdles (pellets), mandatory measures must be developed to deal with any remaining gaps in environmental protection. California's 'nurdle law' provides a potential precedent: in 2008, the state named pre-production plastic pellets as a pollutant under the federal *Clean Water Act*. See Partridge & Sandborn, *supra* note 1 at 26; Amy Westervelt, "It's taken seven years, but California is finally cleaning up microbead pollution" *The Guardian* (27 March 2015), online: <www.theguardian.com/vital-signs/2015/mar/27/microbead-california-pollution-nurdle-law-plastic>.

⁵⁰ Section 93(1) of *CEPA*, *supra* note 9, broadly empowers the Governor in Council to make regulations regarding Schedule 1 substances. In addition to using such regulations to set national standards, the federal government could consider giving provinces the option to choose their own methods of meeting clear performance goals for reducing or eliminating particular types of plastics, analogous to the approach taken in the Pan-Canadian Framework on Clean Growth and Climate Change. See Canada, "Pan-Canadian Framework", *supra* note 39.

⁵¹ Strategic steps should be taken after careful consideration of Canada's obligations under international trade agreements.

⁵² This will likely require collaboration with other levels of government.

⁵³ Synthetic garments can shed more than 1900 microfibres per wash. See M A Browne et al, "Accumulation of Microplastic on Shorelines Worldwide: Sources and Sinks" (2011) 45 Environ Sci Technol 9175 at 9177. For an overview of the problem and possible approaches, see Jefferson Lai, "Banned, but What About Microfibers?" *Georgetown Environmental Law Review* (21 April 2016), online: <<https://gelr.org/2016/04/21/microbeads-banned-but-what-about-microfibers-georgetown-environmental-law-review/>>.

⁵⁴ Research should identify existing best practices from around the world as well as seeking to develop new ones.

⁵⁵ The federal government could adapt and expand existing product labelling models like ECOLOGO Product Certification or Natural Resources Canada's Energy Star program to convey this kind of information to consumers. See UL, "ECOLOGO Product Certification", online: <<https://industries.ul.com/environment/certificationvalidation-marks/ecologo-product-certification>>; Natural Resources Canada, "ENERGY STAR for products" (11 January 2018), online: <www.nrcan.gc.ca/energy/products/energystar/12519>.

⁵⁶ Washing synthetic garments in a top-load washing machine releases approximately 7 times as many microfibers as washing them in a front-load washing machine. See Niko L Hartline et al, "Microfiber Masses Recovered from Conventional Machine Washing of New or Aged Garments" (2016) 50:21 *Environ Sci Technol* 11532.

⁵⁷ Existing capture technologies include the Canadian-made Lint LUV-R Washing Machine Discharge Filter, the Guppyfriend Washing Bag, and the forthcoming Cora Ball Microfiber Catching Laundry Ball: Environmental Enhancements, "Lint LUV-R Washing Machine Discharge Filter" (2018), online: <www.environmentalenhancements.com/index.html>; Langbrett, "Guppyfriend Washing Bag", online: <guppyfriend.langbrett.com/en/>; Rozalia Project, "A human-scale solution to the biggest pollution problem facing our oceans: Microfibers" (2017), online: <rozaliaproject.org/stop-microfiber-pollution/>.

⁵⁸ This could possibly be modeled on the way Canada regulates vehicle engine emissions.

⁵⁹ This already appears to be on Canada's G7 agenda – see Weber, *supra* note 7. The Canada-US International Joint Commission on boundary waters is also doing excellent work on microplastic pollution in the Great Lakes – see International Joint Commission, "Prevention of microplastic pollution entering the Great Lakes", online: <http://www.ijc.org/en/Prevention_of_microplastic_pollution_entering_the_Great_Lakes>. Canada could also use other international and bilateral forums and agencies to persuade non-G7 countries to address these issues.

⁶⁰ For an overview of this issue, see Partridge & Sandborn, *supra* note 1 at 28-31.

⁶¹ Global Ghost Gear Initiative, "Development of a Best Practice Framework for the Management of Fishing Gear – Part 1: Overview and Current Status" by Tim Huntington (2017), online: <https://www.ghostgear.org/sites/default/files/attachments/wap_gear_bp_framework_part_1_mm_lk-2017.10.23-web.pdf>.

⁶² *Fisheries Act*, *supra* note 10.

⁶³ There are multiple American examples of Indigenous involvement in government-funded fishing gear recovery initiatives. See Partridge & Sandborn, *supra* note 1 at 30.

⁶⁴ For example, the British Columbia-based Volunteer Diver Derelict Fishing Gear Removal Program, which has been pleading for national action on this issue – see Rendezvous Dive Adventures, "Ghost net removal", online: <rendezvousdiving.com/stewardship/ghost-net-removal/>.

⁶⁵ *Fisheries Act* licencing powers could be used uniformly to achieve this: see Partridge & Sandborn, *supra* note 1 at 28.

⁶⁶ *Fisheries Act*, *supra* note 10.

⁶⁷ Expanded *Fisheries Act* powers will likely be available soon through the passage of Bill C-68, *supra* note 10. Clause 1 of the proposed amendments will expand the s 2(1) definition of 'fish habitat' to include any 'water frequented by fish', likely increasing the federal government's ability to tackle marine plastic pollution under existing and amended habitat-related powers (ss 34-43). Additionally, clause 23 (future s 35.1(10)) will allow the Governor in Council to establish objectives for the conservation and protection of fish and fish habitat by regulation, clauses 20 & 23 (future ss 34(1) and 35.2(1)) will allow the Governor in Council to designate ecologically significant areas on the basis of ministerial recommendations, and clause 23 (future s 35.2(9)) will mandate the creation of a fish habitat restoration plan for an ecologically significant area if the Minister is of the opinion that fish habitat restoration is required there to meet any prescribed objectives for the conservation and protection of fish and fish habitat. Together, these powers could be used to target marine plastic pollution in all federal ocean waters through a broad 'ecologically significant area' designation and subsequent creation of fish habitat restoration plans for the entire area.

⁶⁸ For an overview of this issue, see Partridge & Sandborn, *supra* note 1 at 32-35.

⁶⁹ *Supra* note 27.

⁷⁰ *Supra* note 28.

⁷¹ For an overview of this issue, see Partridge & Sandborn, *supra* note 1 at 36-40

⁷² According to Minister McKenna, Canada has to “do much better when it comes to recycling and looking at how we have a real circular economy” – see Dharssi, *supra* note 7.

⁷³ While the federal government’s recent \$35 million Strategic Innovation Fund grant to plastic manufacturer Nova Chemical may fund some research and development to enhance recyclability, it will also help Nova Chemical expand their facilities to produce 431,000 additional tonnes of polyethylene every year, which is clearly incompatible with plastic reduction. See Mia Robson, “Despite lip service on reducing waste, Ottawa gave Alberta plastics giant \$35M grant” *CBC* (15 February 2018), online: <www.cbc.ca/news/canada/edmonton/despite-lip-service-on-reducing-waste-ottawa-gave-alberta-plastics-giant-35m-grant-1.4536675>.

⁷⁴ *Ibid.* Properly targeted Strategic Innovation Fund grants and similar types of funding can be used to achieve this.

⁷⁵ EC, Commission, *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions – A European Strategy for Plastics in a Circular Economy* (Brussels: EC, 2018), online: <ec.europa.eu/environment/circular-economy/pdf/plastics-strategy.pdf>. See also the Ellen MacArthur Foundation, “New Plastics Economy”, *supra* note 36.

⁷⁶ This recommendation would concretize and build on Minister McKenna’s recent remarks regarding Canada’s G7 agenda. Domestic action is just as crucial as international leadership, and any meaningful Zero-Plastics Waste Charter will need to address waste from plastic products as well as packaging, and include an enforceable timeline. See note 7.

⁷⁷ For an overview of this issue, see Partridge & Sandborn, *supra* note 1 at 41-43.

⁷⁸ A sustainable polluter-pays approach to funding cleanups could be achieved by charging all container ships a small levy to create a marine plastic spill fund. This could be modeled on the Ship-source Oil Pollution Fund (formerly the Maritime Pollution Claims Fund), which was initially funded by a levy on oil imported into or shipped from Canada. Under the *Marine Liability Act*, SC 2001, c 6, the Minister of Transport has the authority to impose a levy on oil shipments by weight, though this power has not been used for decades. See Government of Canada, “Ship-source Oil Pollution Fund: Questions and Answers”, online: <sopf.gc.ca/?page_id=460>. The one-time funding that Parks Canada provided for community clean-up of Pacific Rim National Park Reserve after the 2016 Hanjin Seattle cargo spill is not a sustainable model, as Parks Canada received that money through Hanjin Seattle’s bankruptcy proceedings: see *CBC News*, “Marine debris clean-up efforts in jeopardy as funding runs out” (22 September 2017), online: <www.cbc.ca/news/canada/british-columbia/shoreline-clean-up-funding-1.4303740>.