



# DROWNING IN PLASTIC

Ending Canada's contribution to  
the global plastic disaster

**OCEANA** Protecting the  
World's Oceans

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# The Canadian government must act now to ban harmful single-use plastics. Canada can do its part to end the plastic disaster and create a healthier future for our oceans.

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## Executive summary:

# Time for leadership

Once created and discarded, large pieces of plastic break down into smaller and smaller microplastics that last for centuries. Massive amounts of plastic waste are endangering our oceans – the Earth’s largest life-support system.

Canada contributes disproportionately to this growing disaster. Each year Canada introduces millions of tonnes of plastics into the domestic market, using more than 125 kilograms per person. Most of our plastic waste—87 per cent—ends up in landfills or the environment.

Just nine per cent of our blue box and industrial plastics end up being recycled. Packaging makes up almost half of this waste, and the COVID-19 crisis is making things worse, driving up the use of plastic containers for take-out food, as well as disposable masks and gloves.

Recycling single-use plastics is expensive and countries like Canada have offloaded the problem to other countries. Until recently, much of our plastic waste was sold overseas. Over the last 30 years Canada has exported roughly four million tonnes of plastic waste, mostly to countries in Asia that are ill-equipped to handle it.

Much of the plastic we discard ends up in the oceans. Plastic from overflowing trash cans, litter on the street and waste sitting in landfill can get blown into stormwater sewers, rivers or streams. On top of that, microplastics from clothing get washed down the drain. Ultimately, it all flows into the sea, where it threatens whales, birds, turtles and other marine life.

Canada has a national and global responsibility to stop this damage. We need to move away from our current system where, in most cases, plastic that lasts for centuries is created, used once and then immediately disposed of.

To drive the innovation needed to shift away from this harmful model, Canada must start by banning the use of unnecessary single-use plastics, the single biggest source of plastic waste in this country.

Canadians overwhelmingly support this. When polled in June 2020 by Abacus Data, 86 per cent of respondents said they support a national ban on harmful single-use plastic.

### To put a halt to the plastic disaster, Oceana Canada is calling on governments and businesses to:



**1. Refuse:** Deliver on the commitment to ban all unnecessary single-use plastics in Canada by 2021.



**2. Reduce:** Starting now, municipalities, universities, public institutions and businesses should provide plastic-free options.



**3. Reuse:** Support policies and infrastructures to reuse plastics, including refilling beverage containers.



**4. Rethink:** Stop exporting plastic waste to developing nations either directly or indirectly and promote reduction-based solutions internationally.



# Plastic: One of the world's most pressing environmental disasters


Scientists have found plastic in the deepest parts of the ocean,<sup>1,2</sup> in Arctic ice<sup>3</sup> and in desert air.<sup>4,5</sup> It's choking sea turtles and killing seabirds.<sup>6</sup> It's in our beer, our honey and every fish tested in the Great Lakes.<sup>7,8</sup> And once plastic has been created, it doesn't go away. Instead, it breaks down into micro- and nano-particles that accumulate in the food chain.

Canada disproportionately contributes to this rapidly growing disaster. And the numbers keep increasing. Between 2002 and 2017, our household waste grew 30 per cent, faster than population and GDP growth.<sup>9</sup>

Plastic waste isn't a problem that can be solved by consumers making individual choices. Even for the most dedicated environmentalist, it's almost impossible to go plastic free, because the scale of plastic production is massive. From cars, electronics and toys, to sporting equipment and clothing, plastic is part of our everyday lives. While plastic serves many useful purposes, producing plastic, a material made to last forever, for a single use is not necessary or sustainable.

We also can't recycle our way to a solution. A meagre nine per cent of plastic in this country gets recycled domestically, and similarly, only nine per cent of all plastic ever produced has been recycled.<sup>10</sup> Shipping our waste overseas only moves the problem further away – with much of it ending up in our oceans, and sometimes back on our shores. Instead, we must cut off harmful plastic production at the source.

This report outlines how Canada contributes to the global plastic disaster. It describes how we can turn the tide, starting with a ban on unnecessary single-use plastics, and become a world leader in plastic reduction.



In 2017, 348 million tonnes of plastics were produced around the world.<sup>11</sup> That's more than the estimated weight of every adult on the planet added together.

# Plastic pollution is killing our oceans – and lakes and rivers, too

Without action, the annual global flow of plastic into the ocean will nearly triple by 2040, to around 29 million metric tonnes per year, equivalent to 50 kilograms of plastic for every metre of coastline worldwide.<sup>12</sup>

More than eight million metric tonnes of plastics end up in the ocean each year (with a range of 4.8 million to 12.7 million metric tonnes).<sup>13</sup> That's roughly equivalent to dumping an entire garbage truck filled with plastics into the ocean every minute.

Freshwater is affected too. Each year 10,000 tonnes of plastics enter the Great Lakes.<sup>14</sup> A recent study found up to 6.7 million plastic particles per square kilometre – concentrations greater than those in the notorious Great Pacific Garbage Patch.<sup>15</sup>

To make matters worse, the volume of plastic produced worldwide keeps growing. By 2035, it's expected to double.<sup>16</sup> By 2050, it will almost quadruple.<sup>17</sup> And the more plastics that are created, the more plastic waste enters the environment.

As plastic waste accumulates, it kills ocean creatures. They're tangled, strangled and starved by it as their stomachs fill with plastic they've mistaken for food.

**Microplastics may now outnumber zooplankton, the tiny creatures that make up an essential part of the marine food web.<sup>18</sup>**

With the longest coastline in the world, Canada has a national and global responsibility to stop the flow of harmful single-use plastics that contribute to killing and harming millions of marine animals every year.<sup>19</sup>

## Starving for a solution:

Marine animals are full of plastics. Take a look inside the stomachs of marine turtles, whales, seabirds or fish and there's a good chance that's what you'll find.

Ninety per cent of seabird species<sup>20</sup> and 52 per cent of all sea turtles studied<sup>21</sup> have ingested plastics. Some mistake it for prey, while others eat fish or other animals that have consumed it. Adult birds also mistakenly feed plastic to their chicks, threatening their chances of survival.

Certain microplastics look similar to the phytoplankton, zooplankton and tiny eggs that many fish feed on. Whales also mistake plastics for food. A study conducted in Canada's remote Arctic waters found microplastics in the stomach and intestines of every single beluga tested.<sup>22</sup>



Credit: Chris Jordan



Credit: gemredding

## The Harm of Plastics



### Starvation and entanglement:

Millions of animals, including nearly 700 species, get entangled or ingest plastic waste in the ocean, leading to injury, starvation and death.<sup>23</sup>



### Accumulation in the environment:

Plastics break down into micro- and nano-particles that never go away. These particles steadily accumulate in the food chain as one species feeds on another.



### Health hazard:

Plastics contain hundreds of additives, many of which are harmful and can cause a wide range of health impacts, from cancer to impaired development and other issues.<sup>24</sup> Some plastics also serve as vectors for harmful chemicals that can poison animals and potentially harm humans.<sup>25</sup>



### Habitat disruption:

Floating plastics can serve as rafts that transport invasive marine organisms and bacteria to new ecosystems, causing harm and disruption.<sup>26</sup>



### Climate change:

Most plastics are made from fossil fuels and require a lot of energy to produce, generating greenhouse gases. Greenhouse gases are also created by plastics waste management: landfilling, recycling and especially incineration.<sup>27</sup>



# Canada's plastic problem

## Canada uses – and throws away – a disproportionate amount of plastics

Although Canadians make up less than 0.5 per cent of the global population, we use 1.4 per cent of all plastics produced.\*

Not only that, our consumption keeps growing. Canadians use 4.6 million metric tonnes of plastics every year – roughly 125 kilograms per person.<sup>28</sup> Experts predict that by 2030, that number will grow to more than six million metric tonnes.<sup>29</sup>

And the more we use, the more we discard. Each year, more than 70 per cent of the plastic we consume—3.3 million tonnes—is thrown away.

The most recent available global comparison of plastic waste generated per capita is from 2010, and showed that Canada produced nine times more plastic waste per person<sup>†</sup> than India, up to 3.6 times more than some countries in Southeast Asia and up to twice that of some Scandinavian countries.<sup>30</sup>

## Half of our plastic waste is packaging

In Canada, 47 per cent of the plastic we use is for packaging, including plastic bottles, wraps, cups, cutlery and plastic bags.<sup>31</sup> And most of that packaging gets thrown away within six months, if not sooner.<sup>32</sup>

## 99 per cent of the 1.6 million tonnes of plastic packaging generated in Canada in 2016 was discarded the same year.<sup>33</sup>

If Canada's trends continue as predicted we'll be generating another 450,000 tonnes of plastic packaging waste by 2030.<sup>34</sup>

\* In 2016, 335 million tonnes of plastics were produced around the world (PlasticsEurope, Plastics – the Facts 2018), while Canada used 4.6 million metric tonnes of plastics in 2016 (Deloitte and CheminfoServices Inc, 2019).

† This measures the overall per capita plastic waste generation rate prior to waste management, recycling or incineration.

## The COVID-19 public health crisis is making things worse

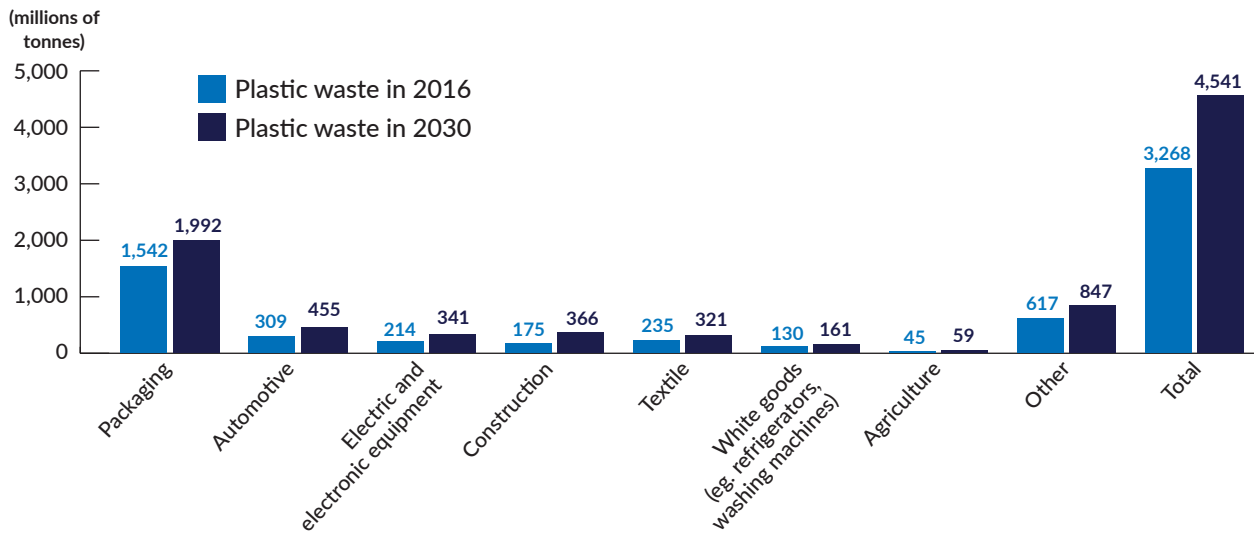
The current pandemic has increased the use of single-use plastics such as take-out food containers by 250 to 300 per cent.<sup>35</sup> However, more than 100 scientists and health experts have said that reusables are still safe to use.<sup>36</sup>



Credit: iStock, mihtander, luoman

## Plastic Nation

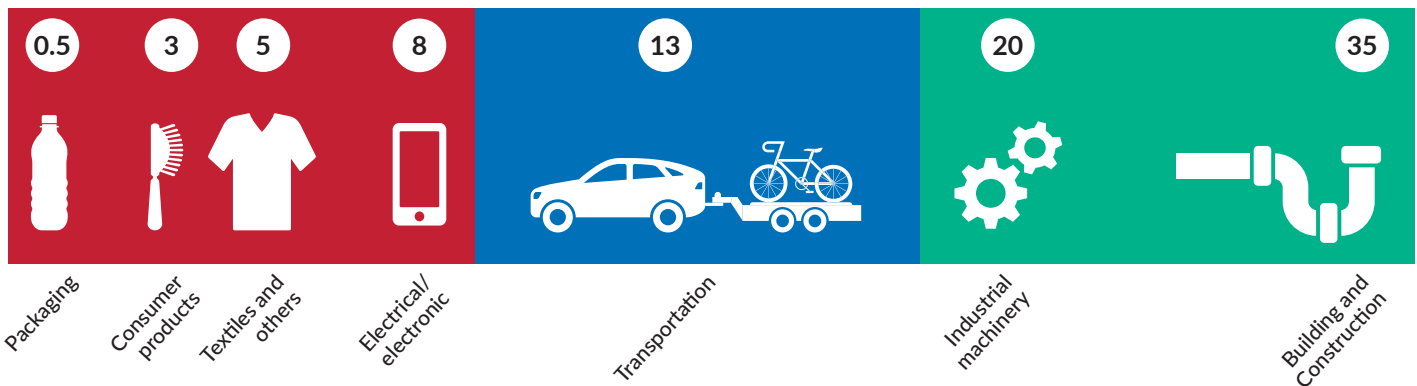
Projections of plastic waste generation in Canada in 2030



Source: Deloitte and Cheminfo Services Inc. (2019). *Economic study of the Canadian plastic industry, markets and waste: Final report - Task 1* (unpublished).

## Life is short

Average useful life of various plastic items, by industrial sector, in years.<sup>37</sup>





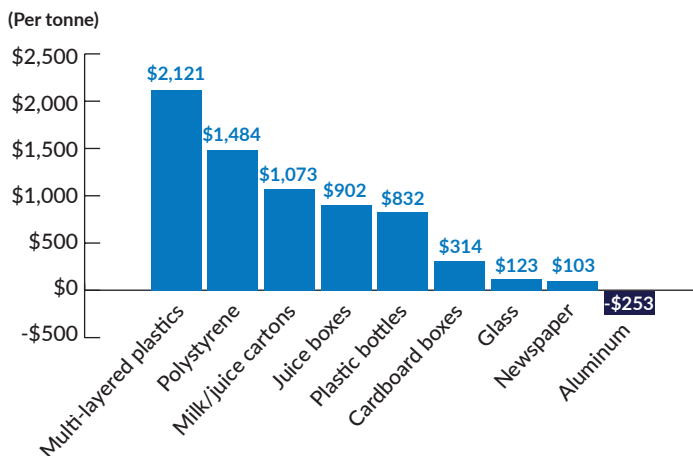
# Recycling doesn't work

In a 2011 survey conducted by Stewardship Ontario, 75 per cent of respondents reported that the recycling blue box was their primary environmental effort.<sup>38</sup> Canadians have been led to believe that their plastics are being recycled and refashioned into something useful. Unfortunately, that simply isn't true.

It costs considerably more to recycle plastics than it does to recycle other materials.<sup>39</sup> As a result, it's difficult for recycled plastics to compete with cheap virgin material.<sup>40</sup> In 2016 \$347 million was spent in Ontario to operate the blue box program, but only \$95 million was recovered from selling the collected materials.<sup>41</sup>

The blue box was launched when disposable beverage containers became popular. Manufacturers, retailers and consumers preferred these disposable containers because they were lighter, unbreakable, cheaper to ship and easier to stack. But as consumers started discarding piles and piles of containers as waste and litter, industry had to come up with a "solution."<sup>42</sup>

## Net cost per tonne to recycle, by material (2014)



Source: Environmental Commissioner of Ontario, Beyond the Blue Box Ontario's Fresh Start on Waste Diversion and the Circular Economy, 2017, page 5, <http://docs.assets.eco.on.ca/reports/special-reports/2017/Beyond-the-Blue-Box.pdf>

Curbside recycling made its global debut in Kitchener, Ontario, in 1981,<sup>43</sup> and it has been successfully promoted around the world. This mammoth effort, however, yields miniscule results for plastic waste and can't keep up with our growing plastic use. And it's expensive.

In 2016, only nine per cent of Canada's plastic waste was recycled domestically. Eighty-six per cent was landfilled, and the rest was exported, incinerated or discarded into the environment. Europe performs better but still recycles less than a third of its plastic waste.<sup>44</sup> In most other high-income countries, rates hover around 10 per cent.<sup>45</sup> Recycling should be encouraged when it is viable, but these figures make it clear that it will never be a solution to global single-use plastic pollution.

The more plastic we use, the more we throw away. The only solution is to cut it off at the source.

**When your bathtub is overflowing, you don't run for a mop before you turn off the faucet. When it comes to plastic waste, recycling is the mop. We need to turn off the faucet.**



Credit: iStock, CarryOnDroning

# Exporting waste: shifting the blame

Canada has long contributed to the plastic pollution problem across the globe. From 1988 to 2016 Canada shipped almost four million tonnes of plastics abroad,<sup>46</sup> mostly to Asia. That's like shipping 800 blue whales worth of plastics every year for 29 years.

China imported the bulk of it for many years, along with plastic waste from other countries. That's because most developed nations import consumer goods made in China. Rather than send back empty ships, they started to export waste to avoid the cost of sorting and processing it.<sup>47</sup>

However, China stopped accepting 24 types of waste in 2017<sup>48</sup> and the following year Canada's export of recyclables to China dropped from 25,800 tonnes to 1,000.<sup>49</sup> For a few years, Canada's exports shifted toward other southeast Asian countries such as Cambodia, Malaysia, Thailand and Vietnam, until they too stopped accepting mixed and contaminated waste.

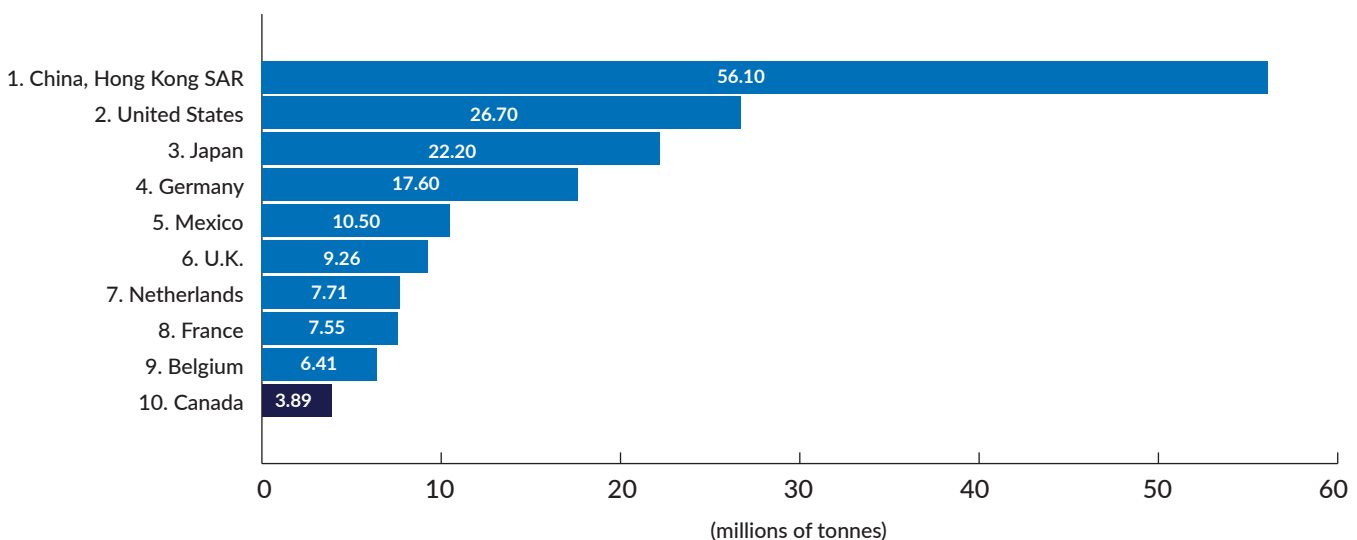
These countries were already ill-equipped to manage their own waste. Much of the waste in low-income countries is dumped or burned without any regulations in place,<sup>50</sup> and

importing more just exacerbated the problem. In Indonesia, for example, burning plastic waste has increased air pollution and contaminated the food chain due to high dioxin levels. A fifth of that plastic waste ends up in rivers and — ultimately — the ocean.<sup>51</sup>

In early 2020, Malaysia's environment minister declared "we do not want to be the garbage bin of the world," and sent back 150 shipping containers of plastic waste that cannot be recycled to 13 countries, including Canada. In the spring of 2019, Canada spent more than \$1.1 million to bring illegally shipped garbage back from the Philippines, after spending nearly six years trying to convince the Philippines to dispose of it there.<sup>52</sup> Canada finally agreed to bring it back after the Philippine president threatened to declare war on Canada until the garbage was returned.

Currently, much of the material collected for export is sitting in depots in Canada and in other developed countries, waiting to be sold. Many municipalities have stopped collecting certain types of packaging.<sup>53</sup> In other cases, particularly in the U.S., recycling programs have been stopped altogether due to the cost and the lack of end markets for recycled plastic.<sup>54</sup>

## Cumulative net weight of plastic export by country or region, 1988-2016



Source: Jambeck et al. (2018). "The Chinese import ban and its impact on global plastic waste trade." *Scientific Advances*. [https://www.researchgate.net/publication/325881851\\_The\\_Chinese\\_import\\_ban\\_and\\_its\\_impact\\_on\\_global\\_plastic\\_waste\\_trade](https://www.researchgate.net/publication/325881851_The_Chinese_import_ban_and_its_impact_on_global_plastic_waste_trade)





Credit: EPA/Mark R. Cristino

Demonstrators hold placards while lying down on the road during a protest at the Canadian Embassy in Makati, south of Manila, Philippines, on May 21, 2019. Led by the Eco Waste Coalition group, the protest demanded the return of Canada's waste.

## What's left contaminates ecosystems

Despite the hundreds of millions of dollars spent on blue box programs across the country, a striking 86 per cent of all plastic waste generated in Canada<sup>55</sup>—and 79 per cent of plastic packaging—goes to landfill.<sup>56</sup> And it's not just taking up increasingly scarce space there. Plastics contain hundreds of hazardous chemical substances that can leach out and potentially contaminate groundwater.<sup>57</sup> The plastic pollution problem affects us all, not just coastal communities.

Meanwhile, between 40,000 and 170,000 tonnes of plastics end up as litter in Canada each year.<sup>58</sup> Clean-ups capture only a portion of that, and they're a costly endeavour. Although specific data for Canada is not available, Toronto alone spends around \$25 million collecting litter every year,<sup>59</sup> while a 2009 study estimated that litter costs U.S. governments, businesses, educational institutions and volunteer organizations almost \$11.5 billion USD annually.<sup>60</sup>



# Turning the tide on Canada's contribution to the plastic disaster

Because plastic waste can't be managed effectively through recycling, it has been accumulating in landfills and in the environment. Half of that waste is from packaging.

Attempts to increase recycling rates while increasing plastic use and production simply won't work. The real solution lies in minimizing the amount of single-use plastics used and discarded. There's no time to waste.

That's why Oceana Canada is calling on the Canadian government to implement a plan, backed by regulations, to refuse, reduce, reuse and rethink, and on businesses to offer plastic-free choices.







# 1. Refuse: Ban unnecessary single-use plastics

Much of the single-use plastic we use—bags, cutlery, plates, bottles and cups—can be replaced by reusable options. The federal government should ban all single-use plastics that are unnecessary or harmful.

The Canadian government committed to banning harmful single-use plastics by 2021, and Canadians overwhelmingly support this action. In 2020, 86 per cent of Canadians surveyed said they want the federal government to fulfil its commitment to help end the plastic disaster.

Now, with so much more plastic being used due to the pandemic it is more urgent than ever that we cut off harmful single-use plastics at the source: A national ban is the most comprehensive way to turn the tide on unnecessary single-use plastic.

Single-use plastics that should be banned include:

- All unnecessary single-use plastics designed to have a short life span and which can often be easily eliminated or swapped for reusables (such as beverage bottles, bags, cutlery, straws, packaging, etc.);
- Oxo-degradable plastics, which break down into plastic fragments;
- Packaging made of PVC and polystyrene, which contain harmful chemicals and are very expensive to recycle;
- On a case-by-case basis, other plastics that cannot be recycled, such as stand-up pouches and black plastics; and
- Compostable plastics that require specialized industrial facilities that may not be available.<sup>61</sup>



# 2. Reduce: Offer plastic-free choices

Starting now, businesses, municipalities, universities and public institutions should provide plastic-free options. This includes using alternative materials and going back to reusable and refillable packaging.<sup>62</sup> Successful examples exist and need to be supported through municipal resolutions, public procurement requirements and institutional support.

## Ditching disposables

The main function of most disposables used in the hospitality sector is to replace dishwashing and cut labour costs. Saving companies money has come at a great cost to everyone else in tangible ways. The hidden cost of harmful single-use plastics is borne by society and the environment as a whole through overflowing landfills and toxic pollution. Food courts, university campuses, cultural institutions, concert venues, hospitals and businesses all create unnecessary and harmful waste.

Ditching disposables is entirely possible. For example, Yorkdale Shopping Centre in Toronto cut its waste from 120 garbage bags per day to three per day, while serving food for more than 20,000 customers a day.<sup>63</sup> Since the single-use plastic bag ban came into effect in Prince Edward Island just over a year ago, 16 million bags have been eliminated from that province's waste system. Meanwhile, many university and college campuses across North America are moving toward zero waste by promoting reusables and implementing strategies to eliminate waste.



## 3. Reuse: Create policies to encourage refill and reuse

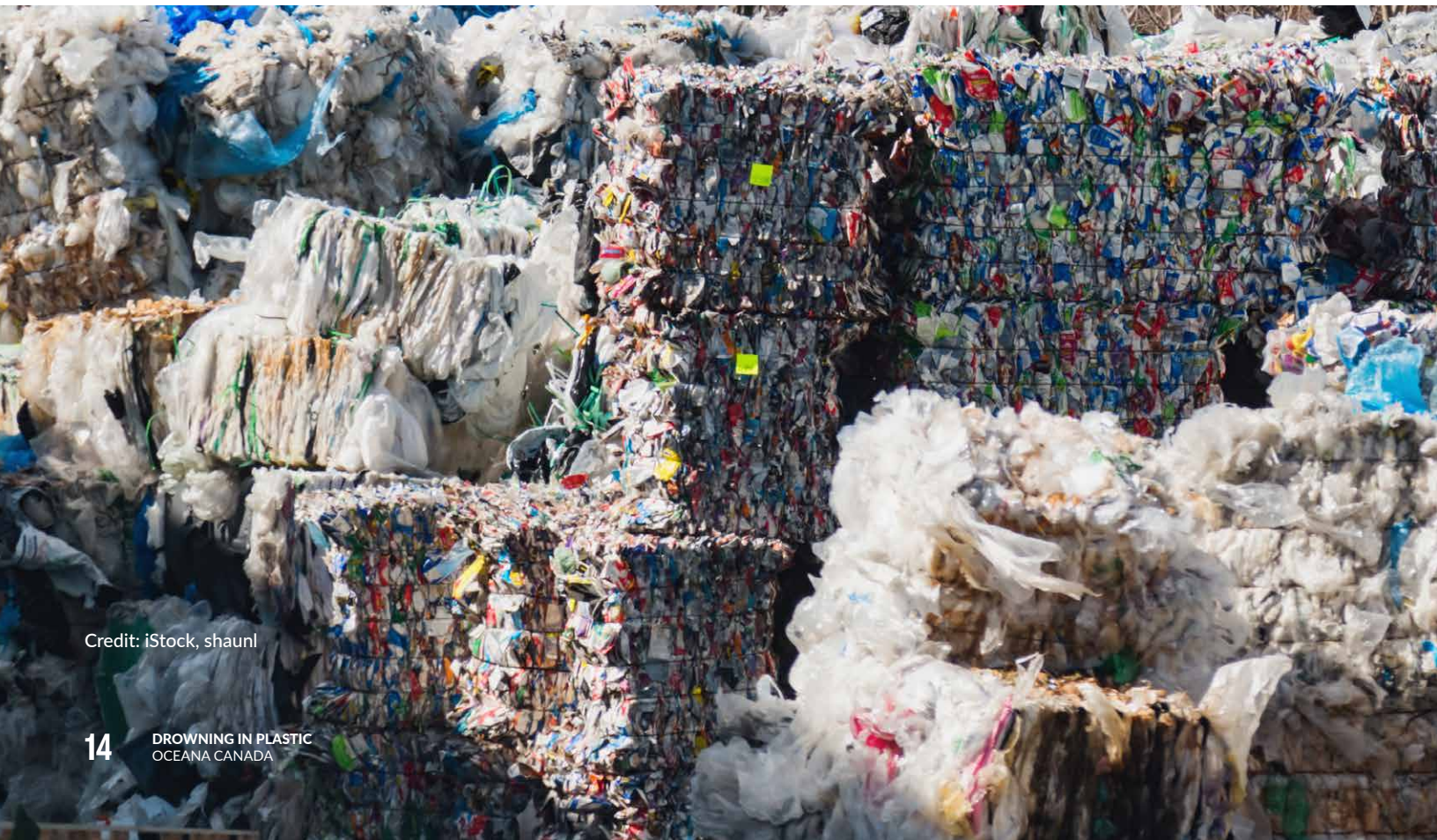
The false promise of recycling throughout the last few decades has led to a steady shift from reusable and refillable packaging to single-use alternatives. It's time to reverse that trend and return to the more sustainable way of living that prioritizes reusables and refillables. According to one market analysis, converting just 20 per cent of global plastic packaging into reuse models offers a \$10 billion USD business opportunity.<sup>64</sup>

Beverage bottles must be a priority because they disproportionately affect the environment. They are number one out of the top 10 most commonly found plastic items in beach cleanups, when measured by weight.<sup>65</sup> According to an analysis by Oceana, 21 billion to 34 billion plastic bottles made of polyethylene terephthalate (PET) become marine pollution every year.<sup>66</sup>

By introducing policies that encourage refillables for all beverages, Canada could drastically reduce the 441,000 tonnes of waste from single-use plastic bottles each year.<sup>67</sup>

Refillable bottles are multiple-use bottles. Customers are incentivized to return them through deposit return schemes, so that companies can clean them, re-label them and refill them with beverages to sell again.<sup>68</sup> Companies can use refillable glass bottles up to 50 times and refillable PET bottles up to 20 times before they are retired and recycled.<sup>69</sup>

Plastic use has skyrocketed during the COVID-19 pandemic, as many businesses have suspended reusable programs over fears of spreading the virus. But scientists and medical professionals believe that reusable containers and bags can be used safely as long as they are washed. It is now more urgent than ever that we embrace refillables and reusable packaging.



Credit: iStock, shaunl





## 4. Rethink: Stop exporting plastic waste

Banning all trade of virtually unrecyclable plastics to the developing world is an important step in redesigning the plastic economy.

In 2019, the international convention that regulates trade in hazardous waste (the Basel Convention) banned the export of most plastic waste to developing countries.<sup>70</sup> The ban will come into force in 2021. However, some loopholes still exist. Because the U.S. is not a party to the Convention, Canada could send plastic waste to the U.S., which could then export it overseas. Thus, Canada must make sure that any plastic waste we send to the U.S. will be treated and recycled there.

### Canadians want to end the plastic disaster

Abacus Data polled 1,800 Canadians in June 2020 on behalf of Oceana Canada. According to the results:



Eighty-six per cent of Canadians support a national ban on single-use plastics.



An overwhelming number of Canadians (87 per cent) are concerned about plastic pollution and its impact on the environment.



A majority (57 per cent) believes that the plastic packaging they put in their blue box actually gets recycled.



Almost everyone surveyed (93 per cent) was upset, disappointed, angry and/or surprised to learn that only nine per cent of plastic ever produced has been recycled.



**Canada has proven it can take a leadership role in addressing plastic pollution. In 2015, the federal government voted to add plastic microbeads to the Canadian Environmental Protection Act's list of toxic substances and subsequently became one of the first countries in the world to ban microbeads in cosmetic products.<sup>71</sup>**

Conclusion:

# Canada must be a leader in helping end the plastic disaster

Canadians are large generators of plastic waste per capita. By promoting recycling as a means to deal with the growing amount of packaging and other single-use plastics, we are complicit in flooding the oceans with plastics.

The solution is clear: we need to put an end to the throwaway culture. But this isn't a change that consumers can make on their own.

That's why Oceana Canada is calling on governments and businesses to:

-  **1. Refuse:** Deliver on the commitment to ban all unnecessary single-use plastics in Canada by 2021.
-  **2. Reduce:** Starting now, municipalities, universities, public institutions and businesses should provide plastic-free options, including reusable and refillable packaging.
-  **3. Reuse:** Support policies and infrastructures to reuse plastics, including refilling beverage containers.
-  **4. Rethink:** Stop the export of plastic waste to developing countries either directly or indirectly and promote reduction-based solutions internationally.

Canadians want, and deserve, plastic-free options. Government and industry have the ability to provide them. By bravely reimagining a more equitable and sustainable world, we can put an end to the plastic disaster.



Credit: iStock, Robert Pleško



# Make your voice heard

To get involved in Oceana Canada's campaign to end single-use plastics, visit [Oceana.ca/Plastics](https://Oceana.ca/Plastics) and add your name to our petition urging the government to **#EndthePlasticDisaster**.



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Oceana Canada was established as an independent charity in 2015 and is part of the largest international advocacy group dedicated solely to ocean conservation. Oceana Canada has successfully campaigned to end the shark fin trade, make rebuilding depleted fish populations the law, improve the way fisheries are managed and protect marine habitat. We work with civil society, academics, fishers, Indigenous Peoples and the federal government to return Canada's formerly vibrant oceans to health and abundance. By restoring Canada's oceans, we can strengthen our communities, reap greater economic and nutritional benefits and protect our future.