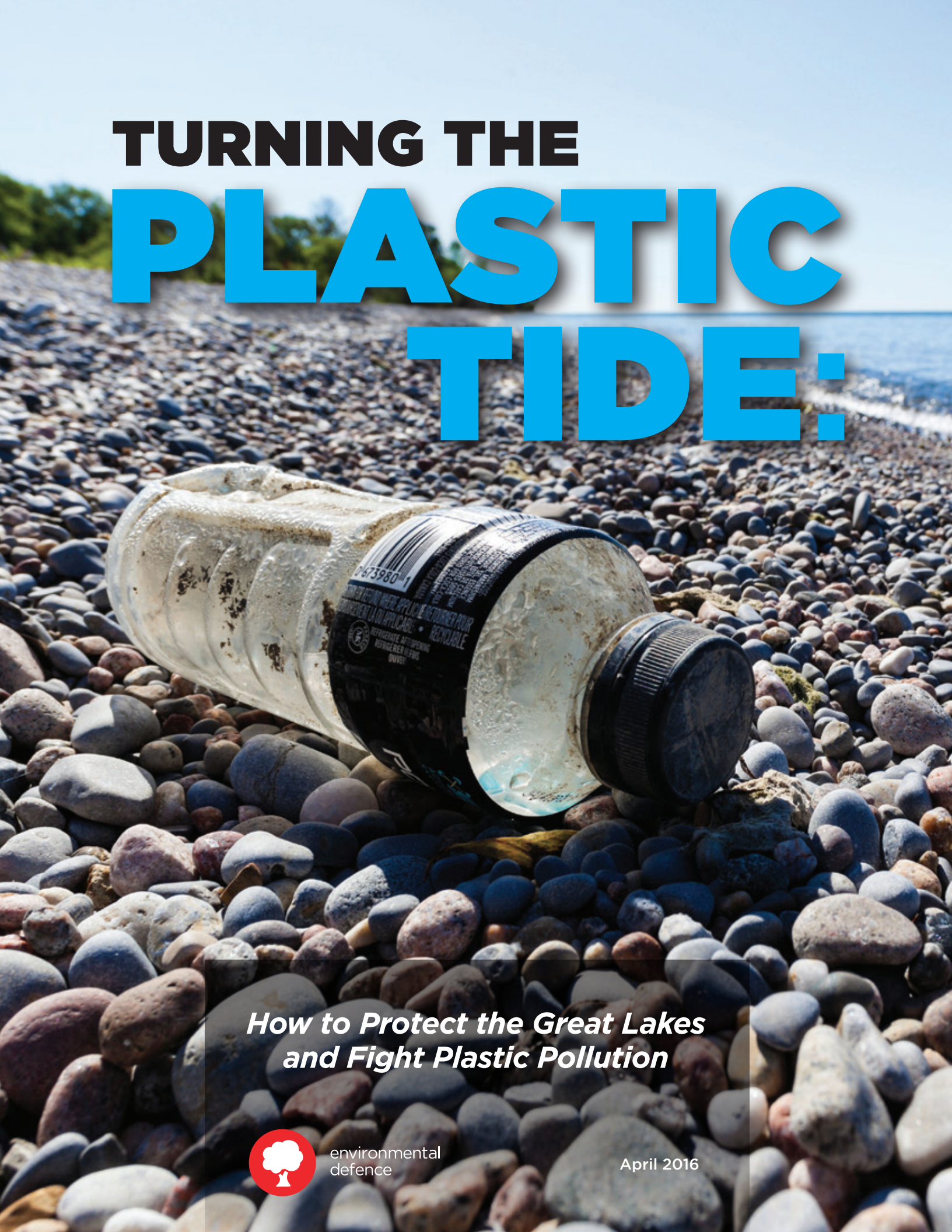

TURNING THE PLASTIC TIDE:

How to Protect the Great Lakes and Fight Plastic Pollution

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Turning the Plastic Tide:
How to Protect the Great Lakes and Fight Plastic Pollution

By ENVIRONMENTAL DEFENCE

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TURNING THE PLASTIC TIDE: How to Protect the Great Lakes and Fight Plastic Pollution

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EXECUTIVE SUMMARY

Plastic pollution has reached every corner of the globe, and is a growing problem in the Great Lakes. In fact, 80 per cent of the litter in Great Lakes region is plastic.[1]

The good news is that there are solutions to this pollution. In the case of micro-beads, tiny pieces of plastic added as exfoliants to personal care products like face wash, the U.S. has already banned them. The process has started in Canada to do the same.[2]

And for another major source of plastic pollution, single-use plastic bottles, the answer is quite simple: put a price on the plastic.

Ontario's Blue Box program isn't working well enough. Less than half of the plastic bottles sold in Ontario find their way to recycling bins.[3] The rest—an estimated one billion plastic bottles each year—end up in landfills or the environment.[4]

We can and must do better. Ontario is one of the few Canadian jurisdictions without a deposit return program for plastic bottles and, as a result, has the lowest plastic bottle recycling rates in the country. Canadian provinces and territories with deposit return programs, in comparison, recover between 72 per cent and 95 per cent of their bottles.[5] And Ontarians know these systems work—the province already has a very successful deposit return program for wine and beer bottles.

In addition to improving recovery rates, a well designed deposit return system can also generate much needed resources to protect our freshwater. New Brunswick, for example, uses revenues from plastic bottle deposit return programs to raise funds for environmental initiatives.[6] In Ontario, this money can be used to help clean up the Great Lakes.

Every summer, Lake Erie is afflicted by larger and larger algal blooms. 2015 saw the worst algal bloom ever recorded on the lake.[7] These blooms are caused by too many nutrients, like phosphorus, finding their way into the water.[8] One of the main sources of phosphorus is runoff from farmers' fields. A newly established fund, created with money raised from a deposit return program for plastic bottles, could help farmers reduce the amount of phosphorus getting into our waterways.

When it comes to protecting our water, commercial and industrial water users, like water bottlers, need to start paying their fair share for the water they use. Currently, large water users, including water bottling companies, pay only $3.71 for a million litres of water. As a result, the province recovers only a fraction of the costs for its water quantity programs.[9] It's time for that to change—water charges for industrial water users should be raised to cover the costs of managing the province's water resources.[10]

This report outlines a plan that would make polluters pay, would charge a fair price for industrial water use, and would protect the Great Lakes for current and future generations.

Less than half of the plastic bottles sold in Ontario find their way to recycling bins.[3] The rest—an estimated one billion plastic bottles each year—end up in landfills or the environment.[4]

SUMMARY OF RECOMMENDATIONS

INTRODUCE A DEPOSIT RETURN PROGRAM FOR PLASTIC BOTTLES

Ontario should catch up to other Canadian provinces and territories and create a deposit return program for plastic bottles. A deposit return program would reduce plastic pollution in the environment and the number of bottles ending up in landfills, while also raising funds that can be used for initiatives to help protect the Great Lakes.

Ontario is rolling out new waste legislation, the proposed Waste Free Ontario Act, which is intended to increase recycling rates. A deposit return program for plastic bottles should be part of this new framework.

ASK INDUSTRIAL WATER USERS TO PAY THEIR FAIR SHARE

Ontario should increase the fees that industrial and commercial water users, such as water bottling companies, currently pay for the water they take from our aquifers, lakes, and rivers.

Over eight years ago, the Ontario government moved to make companies that bottle large amounts of water from the Great Lakes basin to pay for the water they take. The revenues raised from the fees would be used to cover the costs of the province's water conservation programs. The current fee of $3.71 per million litres of water is too low to recover those costs, and water quantity programs are subsequently underfunded.

More money is needed to monitor water quantity. It's time to follow through on the promise of eight years ago and raise the fees for water takers in order to recover the full cost of water management programs.

REFILLS NOT LANDFILLS

Ontarians can make a pledge to reduce waste by choosing to use a refillable water container. Ontario has some of the best tap water in the world and it costs a fraction of the price of bottled water. We can help protect our waterways with the simple step of carrying a reusable water bottle and asking for tap water at restaurants and events.

Current system vs. an example deposit return system for plastic bottles in Ontario

CURRENT SYSTEM

Customers buy plastic bottles

50% of bottles are recycled

50% of bottles end up in landfill or the environment

EXAMPLE DEPOSIT RETURN SYSTEM

There's a 10¢ deposit on each plastic bottle purchased

80% of bottles are returned to get the deposits back

20% of bottles are not returned. Government uses the revenues to help protect the Great Lakes

INTRODUCTION

Our planet is awash in plastic. Plastic pollution has now made its way to every corner of the globe—from the ocean floor, to remote polar regions, and into the food chain.[11] Studies predict that by 2050, there could be more plastic than fish in the world's oceans.[12]

The global plastic problem has been well documented, but what's less well known is that plastics are piling up in Canada's environment too, and they are accumulating in the Great Lakes.

Plastic pollution has been found in the Great Lakes at concentrations equal to what's found in the floating islands of plastic waste known as the Great Pacific Garbage Patch.[13] And the problem is getting worse. A staggering 80 per cent of litter in the Great Lakes region is plastic.[14] What's even more troublesome is that most plastics don't decompose—they just break down into smaller pieces that persist in the environment for centuries.

The good news is that it's not too late to turn back the plastic tide. In fact, the tide

Plastic pollution has been found in the Great Lakes at concentrations equal to what's found in the floating islands of plastic waste known as the Great Pacific Garbage Patch.[13] And the problem is getting worse.

is turning on some fronts already. For example, the U.S. has banned the sale of products containing microbeads—a type of microplastics unnecessarily added to personal care products, which are polluting our waterways and can harm wildlife. Canada is also taking steps to do the same.

In this report, we take aim at another unnecessary source of plastic pollution that is lapping at our shorelines and piling up in our waterways: single-use plastic water bottles.

We don't need plastic water bottles. Most Canadians have access to some of the best tap water in the world. We can choose to use a refillable water bottle, or have a glass of tap water, instead of buying a single-use water bottles and contributing to plastic pollution. However, despite all of this, Canadians buy an estimated 2.4 billion litres of bottled water every year. [15]

The bottled water industry is problematic for many reasons, but one of the main issues is the poor recycling rates for the bottles themselves. Ontarians may be avid recyclers, but only half the plastic bottles sold in the province find their way to recycling bins.[16] The return rates for bottles consumed at events or on the go are even worse—just over a quarter are recycled.[17] The rest end up in landfills or the environment.

We can and must do better. We know how to keep plastic bottles out of our lakes and rivers. It's quite simple: put a price on the plastic.

Ontario is one of the few Canadian jurisdictions without a deposit return program for plastic bottles. Canadian provinces and territories with a deposit return program recycle over three quarters of their bottles.[18] While Ontarians may be proud of their Blue

In some countries, customers return their bottles by using reverse vending machines. The machines collect the bottles and give the customers their deposits back.

Boxes, the reality is that the Blue Box system is failing us, especially when compared to a deposit return program.

Ontarians know firsthand that deposit return programs work. In 2007, the Ontario Deposit Return Program (ODRP) for wine and liquor bottles was introduced. Thanks to that program, 65,000 more tonnes of glass are diverted annually from Ontario landfills.[19] Refillable beer bottles are returned at a rate of 98 per cent.[20] When it comes to cans, the return rate for non-alcoholic cans in Ontario is 60 per cent. In comparison, the return rates for beer cans, which have a deposit on them, is 82 per cent, proof that putting a price on containers works.[21]

Putting a price on plastic water bottles won't only help to keep them out of our environment. It could also generate much needed resources to help with other Great Lakes issues, such as tackling algal blooms in Lake Erie. In 2015, the lake had its largest bloom ever recorded. The bloom was so large that it could be seen from space.[22]

The Province of Ontario has signed a bi-national agreement with Michigan and Ohio to work to reduce phosphorus, which causes algal blooms, from entering Lake Erie. However, despite this commitment, and the fact the province recently passed *The Great Lakes Protection Act*, the Great Lakes were not mentioned in Ontario's 2016 budget.[23] Where the resources needed to protect the Great Lakes will come from remains an open question. Right now, there is a severe shortage of funding.

Over the years, the budgets of Ontario's Ministry of Environment and Climate Change (MOECC) and the Ministry of Natural Resources and Forestry (MNRF) have not kept pace with the expanded responsibilities placed on these ministries.[24] For example, MOECC, the ministry tasked with protecting the

environment and fighting climate change, receives only 0.4 per cent of the province's annual budget.[25] And Ontario's budget for Great Lakes protection is only about $15 million per year.[26]

Federal funding is scarce as well. For instance, the Great Lakes Action Plan was funded at $16 million over two years from 2010-2012—but since then, no additional funding has been committed. The 2016 federal budget allocated $3.1 million towards reducing phosphorus and resulting algae in Lake Erie.[27] In comparison, the U.S. has invested $2.26 billion since 2010 through its Great Lakes Restoration Initiative.[28] This is in addition to funding for infrastructure contributed by U.S. states.

More resources are needed to protect the Great Lakes in Canada. A deposit return program can help fill this funding void. In addition to greatly improving return rates, deposit return programs can also generate millions of dollars in social and environmental benefits.[29] And they can generate funds that can be dedicated to protecting the environment.

For example, in New Brunswick, the proceeds from its deposit return program are put into an environmental fund.[30] Prince Edward Island has committed to doing the same.[31] The fund helps pay for waste and water quality programs, including helping farmers create vegetated areas along streams and wetlands that keep phosphorus on the land and out of the water. It's a model Ontario should follow.

Ontario's Bill 151, the proposed Waste Free Ontario Act, offers a new stewardship approach to minimize waste generated by products and packaging, like plastic bottles.[32] As this new framework is being finalized, now is the time for Ontario to make changes to the way that plastic bottles are handled, catch up with the rest of Canada, and introduce a deposit return system.

In addition to keeping bottles out of the environment, Ontario should also address other shortcomings of its water policy. When it comes to managing water quantity, the province should increase the charges for taking water, especially for "consumptive uses" like water bottling, where the water isn't returned to the environment or local watershed.

These charges were introduced in 2007 in response to public demand for better protection of Ontario's water and were intended to cover the costs of water quantity programs.[33] However, the fee is too low and, at present, Ontario only recovers a fraction of the costs of those programs.[34]

It's time to increase the payments so that they cover the costs associated with water takings by commercial water users, like water bottling companies.[35]

It's time to put a price on plastic pollution, charge a fair price for industrial water use, and clean up the lakes.

Operational Land Imager satellite image of western Lake Erie algal bloom. July 31, 2015.
Photo credit: NASA

Putting a price on plastic water bottles won't only help to keep them out of our environment. It could also generate much needed resources to help with other Great Lakes issues, such as tackling algal blooms in Lake Erie.

WHY WE NEED THE GREAT LAKES GREAT

The Great Lakes are a global treasure and arguably *the* defining feature of Ontario. In fact, the word Ontario is traceable to Amerindian sources and derives either from 'Onitariio' meaning beautiful lake or 'Kanadario' meaning beautiful water.[37] It is a name that we need to live up to.

At nearly one fifth of the world's available surface fresh water, the lakes are the single largest body of freshwater on the planet. And they provide drinking water to 8.5 million Ontarians.[38]

More than just the water we drink, the Great Lakes sustain a diversity of fish and other wildlife. The watershed is home to 3,500 types of animals and fish, including many that are rare, or endangered.[39] Emerging threats such as algal blooms, plastic pollution and invasive species are putting these vital Great Lakes ecosystems at risk. Climate change and increased urban development are amplifying these threats, and communities are already beginning to feel the strain.

The growing problem of algal blooms

Every summer, Lake Erie is getting covered by larger, more harmful algal blooms. In 2014, 500,000 people in Toledo, Ohio and Pelee Island, Ontario were unable to access safe drinking water from their taps for days, due to blooms on the lake.[40]

Image of the Toronto Islands, Photo credit: John Vetterli

"We cannot understand Ontario without the Great Lakes"

–The Hon. Elizabeth Dowdeswell, Lieutenant Governor of Ontario[36]

Some algal blooms are known as nuisance blooms, clogging drinking water intakes and blocking access to beaches and marinas. Others are toxic—these Harmful Algal Blooms (HABs) can be deadly to animals and can cause skin rashes and make water undrinkable for humans.[41] Additionally, the breakdown of the blooms sucks oxygen out of the water sometimes causing marine "dead zones" that can suffocate fish.[42]

Millions of people rely on the Great Lakes for drinking water, jobs, and recreation. Ontario's $450 million commercial and recreational fishery and multi-million dollar tourism industry need a healthy Great Lakes to survive. And phosphorus pollution, and resulting algal blooms, have proven to be costly. In 2014, an algal bloom on Lake Erie cost roughly $65 million US in damage to local property values, tourism, recreation and added costs for water treatment.[43]

Recognizing the need for a new tool to protect and restore the ecological health of the Great Lakes—St. Lawrence River Basin, the Government of Ontario passed *The Great Lakes Protection Act* in the fall of 2015. However, more resources are needed to implement the Act and the programs that will tackle the threats to the Great Lakes.

An algal bloom during the summer of 2014 left thousands of Toledo, Ohio residents without safe tap water for days. Photo credit: Dave Zapotoksy, *The Toledo Blade*

Water is our most precious resource, but water quantity and quality programs are sorely underfunded in Ontario.[44] Addressing the significant funding gap is vital to protecting our freshwater.

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THE PROBLEM WITH PLASTIC

Among the many threats facing the lakes is the rising problem of plastic pollution—and most of this pollution is entirely avoidable.

Today, there is no part of the planet—from the Pacific Ocean to the North Pole—where plastic pollution cannot be found.[45] And the problem is getting worse.

According to a recent report by the World Economic Forum (WEF), an entire garbage truck's worth of plastic is dumped into the world's oceans every minute.[46] The proliferation of plastic in the environment is so significant that some have said it is a defining feature of the Anthropocene, a new geologic era defined by humankind's impact on the environment.[47]

The accumulation of plastic in the oceans has been well documented. The Great Pacific Garbage Patch, an area the size of Texas with exceptionally high concentrations of plastics, chemical sludge, and other debris, is now known to many. Less well known, however, is that what's happening in our oceans is also happening in our lakes, including the Great Lakes.

Studies have found more than six million bits of plastic per square kilometre in the Great Lakes.[48] That's similar to levels found in the Great Pacific Garbage Patch.[49] Plastic pollution has been found in all five of the lakes, with the highest concen-trations in Lake Erie and Lake Ontario.[50]

Once in the lakes, the plastic doesn't go away on its own. Clean up of plastic pollution in the Great Lakes, including beach clean-ups, is estimated to cost $486 million US annually.[51] If left in the lakes, the plastic never really de-composes. It just breaks down into smaller pieces. As these pieces build up in our waterways, they threaten the species that live in and depend on the water—including us.

Fish and other wildlife can ingest these tiny bits of plastic. Fishermen have begun catching fish with stomachs full of plastic in Canadian rivers.[52] The litter can also harm fishes' digestive systems and can cause mutations.[53,54] Some animals get ensnared in the plastic and drown or choke to death. Many birds mistake the plastic for food, and they eat the plastic and feed it to their chicks.[55]

In water, plastic particles act as a sponge for persistent toxic chemicals, making them even more dangerous. Plastics found in rivers, streams, and other waterways have been shown to contain poly-chlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), pesticides, and flame retardants.[56,57] These toxins can make their way up the food chain from zooplankton, to fish, and eventually to people who eat the fish and unknowingly consume endocrine-disrupting and cancer-causing chemicals.[58]

Plastic pollution is choking our waterways, killing animals, and posing a threat to human health. It must stop.

Studies have found more than six million bits of plastic per square kilometre in the Great Lakes.[48]

THE CASE AGAINST PLASTIC BOTTLES

The good news is that some progress is being made to stop the accumulation of plastic pollution in our waters. For example, the U.S. has signed a bill requiring American manufacturers and retailers to end the use of microbeads in products by July 1, 2017. The Canadian government is also moving to ban the sale of products containing microbeads.

Now it's time to tackle other sources of plastic pollution, like plastic water bottles. Less than half of the bottles sold in Ontario make their way to recyclers—that means about 18,500 tonnes of polyethylene terephthalate (PET) bottles,[59] nearly a billion plastic bottles, are not recycled in Ontario each year.[60] Is it any wonder then that bottle caps and bottles are among the most common items of litter found on our shorelines? For example, in 2015, a total of 37,769 plastic beverage bottles were picked up by volunteers during the Great Canadian Shoreline Cleanup.[61]

Plastic bottles also pose a threat in other environments too, of course. Bottles have been linked to the death of farm animals and pose costs for farmers in terms of crop losses and equipment damage.[62]

In most cases, plastic water bottles aren't needed, which is why some jurisdictions are looking to ban them.[63] But at the very least, we need to figure out a way to collect these bottles, and keep them out of the environment.

BOTTLED WATER—A BAND-AID SOLUTION AT BEST

Bottled water isn't needed in most cases. And when it is needed, it's a band-aid solution that brings problems of its own.

In parts of the world without access to clean drinking water, bottled water is necessary. However, that is not the case in many parts of Ontario, home to some of the cleanest and best protected drinking water in the world. Ontario's Chief Drinking Water Inspector found that in 2014-2015, 99.8 per cent of municipal residential drinking water system tests met the province's rigorous drinking water quality standards.[64]

In parts of the world without access to clean drinking water, bottled water is necessary. However, that is not the case in many parts of Ontario, home to some of the cleanest and best protected drinking water in the world.

There have been some lapses in the past. Most infamously, a contaminated water crisis in Walkerton, Ontario left 2,300 people sick and seven people dead in 2000. But the province has learned from these mistakes, and after the Walkerton tragedy, Ontario put in place strong legislation to protect water from source to tap, to ensure such a disaster would never happen again.

Nonetheless, there are still a number of communities in Ontario that depend on bottled water on a daily basis. This problem is especially prevalent in First Nations communities. At any one time, about one in every six of Canada's more than 600 First Nations communities is under a boil water advisory. Some of these advisories have been in effect for years.[65] In these communities, bottled water is needed but it cannot take the place of a more sustainable and permanent solution.

Unfortunately, in some cases, spending resources on bottled water can actually take resources away from a permanent fix. In one First Nations community facing a boil water advisory, the Canadian government has spent more than two million dollars on bottled water—about half the price of a new water treatment plant.[66]

Bottled water is also needed in emergencies, like the crisis in Flint, Michigan, where it was recently discovered that the city's water supply was contaminated with high levels of lead. Bottled water has been shipped in by the truck load, but it's not a sustainable long-term solution. If bottled water were used to meet all of the water needs of Flint residents to drink, bathe, and live their regular lives, each resident would need 200 bottles of water a day—that's a total of 20.4 million bottles every day.[67]

The tragedy in Flint should never have happened in the first place. Although bottled water was needed as a stop-gap solution, that solution has also had consequences: copious amounts of empty plastic water bottles that are overwhelming the municipal recycling system, polluting neighbourhoods, and filling up the city's landfills.[68]

BOTTLED WATER— NOT THE BETTER CHOICE

Water bottling companies often use images of pristine springs and glacial-fed streams as an attempt to brand their product as the cleaner and healthier alternative.[69] But there are many reasons why package-free tap water may be better than bottled. Here are a few:

1 Plastic bottles can release harmful chemicals

Plastic water bottles can become contaminated with the chemicals used in their manufacture. Phthalates are a plasticizer used in making the plastic packaging of water bottles and, according the World Health Organization, this toxic substance can damage human development and impair the reproductive system.[70] Chemicals like phthalates can leach from the plastic into the water as the bottle degrades from heat, sunlight, and bacterial presence from repeated use.[71,72,73]

2 Tap water is tested more often

Tap water is subject to more rigorous testing than bottled water. The City of Toronto tests its water for some 300 potential contaminants every four to six hours.[74] Bottled water producers claim that they test their water as much as municipalities, but the results of any such tests do not have to be made public.[75] One study done in Canada found that water bottling plants are inspected only once every three years.[76]

The results of testing that have been done certainly give reason for pause. In 2010, Canadian researchers tested nearly a dozen brands of bottled water and discovered that 70 per cent had high levels of bacteria.[77] The bacteria levels weren't high enough to cause much harm, but nonetheless, the tests throw cold water on the idea that bottled water is better.

3 Sometimes, bottled water is just expensive tap water

Some bottled water is actually tap water. An estimated eight per cent of bottled water sold in Canada comes from municipal sources.[78] Worse still, water bottling companies aren't required to disclose that on the labels. The upshot is that when you buy bottled water, you may be paying a premium for something you could get from your tap.

TAP WATER VS. BOTTLED WATER		Water produced from 5 units (MJ) of energy[79]	Price per litre	Frequency of inspections	Consumers rights to know test results
	TAP WATER	4,000 glasses of water	$.004[80] (less than 1 cent)	Every 4-6 hours	Test results available to public
	BOTTLED WATER	1 standard 500 mL bottle of water	$2.50[81]	As little as once every 3 years	Test results not required to be made public

The City of Toronto tests its water for some 300 potential contaminants every four to six hours.[74] Bottled water producers claim that they test their water as much as municipalities, but the results of any such tests do not have to be made public.[75]

CASH IT, DON'T TRASH IT!

When Ontario first launched its Blue Box program, it was an example that other jurisdictions followed. But today, the Blue Box program is failing us. Only 25 per cent of the waste in Ontario is recycled, meaning that three quarters of it ends up in landfills or the environment.[82] Part of the reason is that not all waste is generated at home, but Blue Boxes only collect residential recycling. Of the single-use plastic water bottles consumed at work, events, or on-the-go, only a little over a quarter are recycled.[83]

We need to do better, and when there are established best practices that are known to work well, we should adopt them. One such best practice is a deposit return program for plastic bottles. Bottle deposit systems used to supplement curbside recycling, like the Blue Box, are an effective way of capturing what is currently missed.

Less than half of plastic beverage containers sold in Ontario found their way into recycling bins in 2012.[84] In comparison, jurisdictions with deposit return programs have a recovery rate between 72 per cent and 95 per cent.[85]

The majority of Canadian jurisdictions have a deposit return program for non-alcoholic beverage containers. Ontario, Manitoba, and Nunavut are the exception. If Ontario were to introduce such a system, then recovery rates could be expected to rise from 47 per cent to 80 per cent—which is the average return rate for deposit return programs. That would mean that over 600 million more bottles would be recycled each year.[86]

Depending on how the program is structured, a deposit return system can also raise much needed funding to protect the environment. New Brunswick puts proceeds from its deposit return into an environmental fund and Prince Edward Island has committed to do the same.[87,88] A similar model could help Ontario tackle the problem of plastic pollution, while also creating a sustainable source of funding to help protect Great Lakes water quality.

Ontario is moving forward with new waste management legislation, the proposed Waste Free Ontario Act, to finally get recycling rates moving up again. Now is the opportunity for the province to introduce a deposit return program as part of this new framework.

The majority of Canadian jurisdictions have a deposit return program for non-alcoholic beverage containers. Ontario, Manitoba, and Nunavut are the exception.

Non-alcoholic plastic beverage deposit return programs in Canada

JURISDICTION	DEPOSIT/ REFUND	PET BOTTLE COLLECTION RATE (%, 2012)
Northwest Territories	Yes	95
Yukon	Yes	94
Prince Edward Island	Yes	84
Nova Scotia	Yes	80
Saskatchewan	Yes	79
Alberta	Yes	76
British Columbia	Yes	75
Newfoundland	Yes	74
Québec	Yes	74
New Brunswick	Yes	72
Manitoba	**No**	**51**
Ontario	**No**	**50**
Nunavut	**No**	**N/A**

(Source: CM Consulting, May 2014, Who Pays What 2014, p 17)

BOTTLED WATER COMPANIES NEED TO PAY THEIR FAIR SHARE

Although this report is primarily about the need tackle plastic pollution to help protect the Great Lakes, Ontario also needs to address the rates it charges large water users, including water bottling companies.

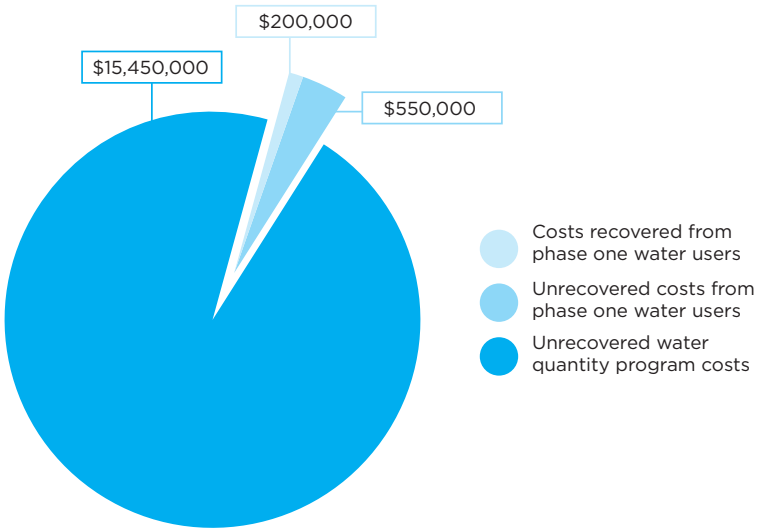
In 2007, the Ontario government promised to charge companies that bottle large amounts of water from the Great Lakes basin for the water they take. The revenues raised from the fees were intended to cover the costs of water conservation programs in Ontario. Even though the province did pass legislation to fulfill its promise, only the first phase of implementation was carried out, and the current revenues collected fall far short of what's needed to manage Ontario's water resources.[89]

The Government of Ontario recovers only 1.2 per cent of the $16.2 million it spends on water quantity management programs. That's because many industries with a Permit to Take Water (PTTW) pay nothing to withdraw water. And large volume industrial and commercial water users, like bottled water producers, pay only $3.71 for each million litres of water they extract.

This leaves the province out of pocket for water conservation programs that are needed to manage water. The fee of $3.71 per million litres also means that companies, like Nestlé, pay less to extract one million litres of water than what it could cost to buy two litres of bottled water at the store. Because of this, we are essentially subsidizing companies to take our water and sell it back to us, all while the province is losing out on funding needed to manage and protect Ontario's freshwater.

Increased water-taking charges would ensure that those who benefit from taking water assume greater responsibility for supporting the programs that protect and sustain those water supplies.

Water quantity program costs, 2012



(Source: *Small Things Matter: Annual Report 2014/2015* by the Environmental Commissioner of Ontario.)

COMMUNITIES OPPOSE BOTTLED WATER

Ontario also needs to take a hard look at the water bottling industry, and assess its impacts on our water resources. According to the United Nations, access to clean drinking water is a human right.[90] That right shouldn't be undermined by water bottling companies that take too much and threaten the ability of communities to meet their needs.

In 2015, Nestlé Waters Canada applied for a permit to extract water from the Middlebrook Well, near Elora, Ontario. The Grand River Watershed is already showing signs of stress according to the Environmental Com-missioner of Ontario, as low-water levels threaten ecosystem health.[91] This has the neighbouring communities of Elora and Wellington concerned—given Nestlé's past record of opposing efforts to minimize extraction during drought—that increased withdrawal of groundwater will further reduce the base flows to some streams and rivers.[92,93]

These communities are not alone. In San Bernardino, California, Nestlé has been drawing water during a drought from the Arrowhead Springs on a decades old permit. As a result, parts of a connecting creek have dried up.[94]

Ontario needs to take a hard look at the current permit program for water users to determine whether allowing consumptive uses is in the provincial interest. If an aquifer cannot sustain the demands companies will place on it, the needs of the communities need to come first.

Elora Gorge Photo credit: Michael Liebeskind

CONCLUSION

"We can no longer take our province's water supplies for granted."

– Ellen Schwartzel
Acting Commissioner of Ontario[95]

Plastic pollution is a pervasive problem around the world.[96] The floating islands of plastic waste known as the Great Pacific Garbage Patch have been well documented. However, the emerging problem of plastic pollution in the Great Lakes is less well known. Yet, concentrations of plastic pollution in the Great Lakes rival those found in the oceans.[97] It is not just small pieces of plastic, like microbeads, that are the problem. Larger pieces of plastic, like water bottles, are littering shorelines, polluting the water, and harming wildlife.

Half of the bottles consumed in Ontario are not recycled and end up landfills or the environment—where they harm wildlife and pollute our waters. Bottling companies are paying next to nothing to pump our water and sell it back to us at a huge markup. And when bottled water is needed, like the recent water emergency in Flint, Michigan, it is a band-aid solution that causes problems of its own.

The good news is that we know how to keep plastic bottles out of our lakes and rivers. It's quite simple: put a price on the plastic. Ontario is one of the few Canadian jurisdictions without a deposit return program for plastic bottles. Canadian provinces and territories with a deposit return program recycle over three quarters of their bottles.[98] In addition to improving recovery rates, this would help address gaps in funding for water quality programs. The province can also ensure it recovers the full costs of managing its water quantity programs by amending its Permit to Take Water program and making water takers pay more.

We can turn the tide and protect the Great Lakes from plastic waste. We have the solutions. Now, it's time to take action.

RECOMMENDATIONS FOR HEALTHIER WATER

INTRODUCE A DEPOSIT RETURN PROGRAM FOR PLASTIC BOTTLES

Ontario should catch up to other Canadian provinces and territories and create a deposit return program for plastic bottles. A deposit return program would reduce plastic pollution in the environment and the number of bottles ending up in landfills, while also raising funds that can be used for initiatives to help protect the Great Lakes.

Ontario is rolling out new waste legislation, the proposed Waste Free Ontario Act, which is intended to increase recycling rates. A deposit return program for plastic bottles should be part of this new framework.

ASK INDUSTRIAL WATER USERS TO PAY THEIR FAIR SHARE

Ontario should increase the fees that industrial and commercial water users, such as water bottling companies, currently pay for the water they take from our aquifers, lakes, and rivers.

Over eight years ago, the Ontario government moved to make companies that bottle large amounts of water from the Great Lakes basin to pay for the water they take. The revenues raised from the fees would be used to cover the costs of the province's water conservation programs. The current fee of $3.71 per million litres of water is too low to recover those costs, and water quantity programs are subsequently underfunded.

More money is needed to monitor water quantity. It's time to follow through on the promise of eight years ago and raise the fees for water takers in order to recover the full cost of water management programs.

REFILLS NOT LANDFILLS

Ontarians can make a pledge to reduce waste by choosing to use a refillable water container. Ontario has some of the best tap water in the world and it costs a fraction of the price of bottled water. We can help protect our waterways with the simple step of carrying a reusable water bottle and asking for tap water at restaurants and events.

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